Preliminary Staff Assessment

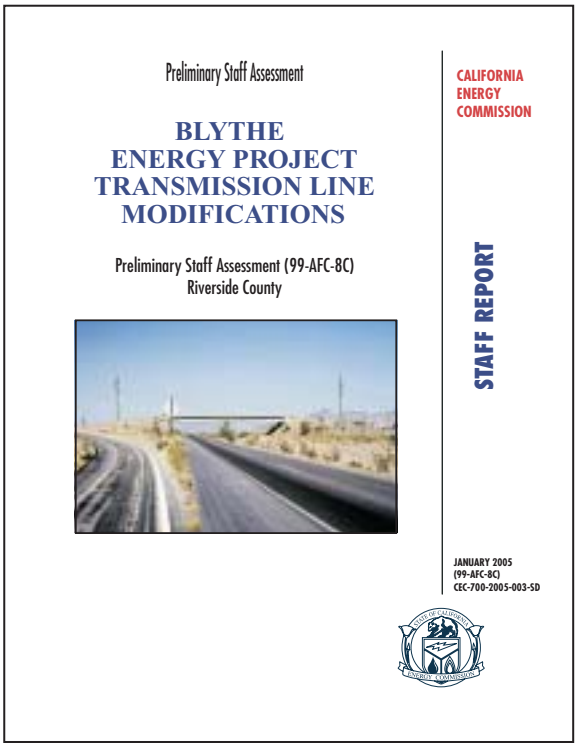
BLYTHE ENERGY PROJECT TRANSMISSION LINE MODIFICATIONS

Preliminary Staff Assessment (99-AFC-8C)
Riverside County

CALIFORNIA ENERGY COMMISSION

STAFF REPORT

JANUARY 2005
(99-AFC-8C)
CEC-700-2005-003-SD



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EXECUTIVE SUMMARY

Jack W. Caswell

This Preliminary Staff Assessment (PSA) of the Blythe Energy Project Transmission Line Modification (BEPTL) contains the California Energy Commission staff (Commission staff) evaluations of Blythe Energy, LLC's petition to amend the Energy Commission's Decision and modify the project license (99-AFC-8C). (see Project Description)

The proposed Blythe Energy Project (BEP) modifications are construction of two new electric transmission line components and a new substation. This project would be located entirely within Riverside County, between the Buck Boulevard (Buck) Substation near the City of Blythe and the Julian Hinds Substation near Hayfield (Project Description figure 1). Along most of its 67.4 mile length, the Buck to Julian Hinds transmission line component would be located within a 95 foot right-of-way adjacent to and north of Southern California Edison's existing Devers-Palo Verde transmission line (Project Description figure 2).

The 6.7 mile Buck to Devers-Palo Verde transmission line component to the south would be located adjacent to an existing Imperial Irrigation District 161 kV transmission line. The proposed new Midpoint substation for interconnection would be located adjacent to Southern California Edison's existing Devers-Palo Verde 500 kV transmission line. (Project Description figure 3).

The Commission is the lead agency for the purpose of California Environmental Quality Act (CEQA) compliance. Western Area Power Administration (Western) and the Bureau of Land Management (BLM) are the co-lead federal agencies for the purpose of National Environmental Policy Act (NEPA) compliance. This PSA is a Commission staff document, presenting staff's analyses and does not necessarily reflect the views of the Commissioners, Western or BLM. As well as presenting an analysis for CEQA compliance, the PSA contains information required under NEPA. Commission staff, Western, and BLM will work jointly in the development of a Final Staff Assessment (FSA). If appropriate, Western and BLM will use the FSA as the basis for their environmental determinations under NEPA.

In this analysis, staff examined the direct, indirect and cumulative environmental, public health and safety, and transmission system engineering aspects of the amendment petition. It presents staff's preliminary conclusions, recommendation, and proposed Conditions of Certification (COC) that staff believes are necessary to mitigate or avoid significant adverse environmental impacts of the project if approved by the Commission. Staff may receive comments on the PSA from local, state, and federal agencies, and interested members of the public. These comments will be addressed in the FSA.

The purpose of the Energy Commission's amendment petition review process is to assess the impacts of this proposal on environmental quality, public health and safety and the existing transmission system. The review process includes an evaluation of the consistency of the proposed changes with the Energy Commission's Decision and if the project, as changed, will remain in compliance with applicable laws, ordinances,

regulations, and standards (Title 20, Calif. Code of Regulations, section 1769). We will conduct one or more publicly noticed workshops on the PSA in February 2005. Based on these workshops, complete data responses, comments received on the PSA, and additional information that will be gathered, Commission staff will revise the PSA and issue an FSA.

NECESSITY FOR THE PROPOSED MODIFICATION

Blythe Energy desires the proposed modification due to restricted transmission line capacity in the Blythe area electrical transmission system. This transmission system is controlled predominantly by the California Independent System Operator (CAISO) and Western Area Power Administration (Western). While Blythe Energy can deliver full power to the southwest regional transmission system, the modifications are intended to enhance the ability to deliver the full capacity of its 520-megawatt power plant located in Blythe, California directly to the California electricity market. The existing transmission paths to Southern California in the CAISO system are not sufficient to continuously deliver electricity and support the long-term power purchase agreements that Blythe Energy prefers.

In March 2001, the Energy Commission approved the Blythe Energy Project Application for Certification (99-AFC-8C). As described in the Blythe Commission Decision, a number of transmission system improvements in Western's transmission system were anticipated to deliver the project power to the California regions with high demand for electricity, such as the Los Angeles and San Diego areas. These transmission system improvements did not materialize. Blythe Energy has been unsuccessful in securing other system improvements to deliver its full electricity capacity directly to the desired markets.

Interconnection requests have been filed with Southern California Edison (SCE) and Western for the proposed transmission line components. The transmission components involve termination of new transmission lines into existing facilities that are owned by SCE and Western (see project description). The criteria used by Commission staff in evaluating the results of these analyses include CAISO Grid Planning Standards, Western Electricity Coordinating Council Planning Criteria, and National Electric Reliability Council Planning Standards. Conclusions of these studies and mitigation measures required for any potential impacts that could affect other parties using the regional transmission system will be included in the FSA in the appropriate technical sections.

PROJECT FUNDING AND OWNERSHIP

Blythe Energy intends to fund the entire transmission project. It will assume the role of "Project Sponsor" as defined in Appendix A of the CAISO, Federal Energy Regulatory Commission Electric Tariff regulations (section 3.2.1.1.2). Following construction of the modifications, the substation facilities and transmission lines would be operated and maintained by Blythe Energy or another responsible party as appropriate.

BACKGROUND AND OUTREACH

On October 12, 2004, Blythe Energy, LLC, (BEP) filed a Petition to Amend the Blythe Energy Project (BEP) Commission Decision and modify the project (99-AFC-8C), and staff began its review of the petition. The Energy Commission appointed a Siting Committee on October 20, 2004, to oversee the amendment petition.

The analysis contained in the PSA is based upon information from: 1) the Petition to Amend application for BEP; 2) the applicant's responses to data requests from both Commission staff, Western and BLM; 3) interested federal, state, and local agencies; 4) various documents and publications listed at the end of each section and; 5) public workshops, site visits and meetings with CAISO, BLM and Western; and 6) staff's independent analyses.

The Energy Commission has made a substantial effort to notify interested parties and encourage public participation. The Energy Commission has:

- mailed Notices of Receipt to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on October 15, 2004;
- mailed a Notice of Public Hearing and Site Visit on October 29, 2004 to responsible and trustee agencies, persons with property contiguous to the proposed project, sensitive receptors, and various individuals that have expressed interest in the project;
- placed a November 9, 2004 advertisement in the Desert Post Weekly and Palo Verde Valley Times requesting radio and television stations to announce a November 10, 2004 public Informational Hearing and Site Visit and a related public workshop scheduled for November 15, 2004;
- conducted an Informational Hearing and Site Visit on November 10, 2004;
- held a public workshop on November 15, and a continuation of that workshop on November 23, 2004, with a call-in number; and
- published this PSA on January 24, 2004 and sent notices of its availability to responsible and trustee agencies, libraries, persons with contiguous property to the proposed project and linears, and individuals that have expressed interest in the project. We are requesting all parties to submit comments by February 28, 2005.

STAFF'S ASSESSMENT

Each technical section of the PSA contains a discussion of impacts, and where appropriate, mitigation measures presented in the form of additional Conditions of Certification or revised Conditions of Certification (COC) from the original Commission decision and license for this project. To identify the new COC's staff has provided additional numbering or underline/strikeout format. COC's in the original Commission Decision will continue to apply as modified or supplemented.

The Preliminary Staff Assessment includes discussion of:

- the environmental setting surrounding the project area;
- potential impacts to public safety, and measures proposed to mitigate these impacts,
- potential environmental impacts, engineering or operational impacts and measures proposed to mitigate these impacts,
- compliance with laws, ordinances, regulations and standards; and
- public need and benefits.

SUMMARY OF MAJOR TOPICS/ISSUES

While the information provided in the Petition and Data Responses is not yet complete, staff provides the following conclusions to highlight PSA and agency concerns. Our present conclusions are subject to revision based on receipt of future information and additional analyses by staff, the CAISO, BLM and others. Our identification of topics/issues is intended to foster dialog between the various stakeholders interested in this petition.

- The transmission System Impact Studies are insufficient to assess the reliability and environmental implications of the project and its cumulative impacts. Amended studies have been requested with the intent of securing a more complete explanation of the direct and cumulative transmission impacts of the project.
- Available information is not sufficient for staff to confidently conclude that laws, ordinances, regulations and standards and the state's interests will be balanced and accommodated. Staff concludes that the policies of BLM's California Desert Conservation Area Plan and the state's interests in optimization of the designated Utility Planning Corridor may be inconsistent with the petitioner's proposal. Staff will coordinate with BLM, SCE, Western, and the CAISO and project developers and will hold workshops to gain a better understanding of stakeholder needs and options for reaching consensus.
- Staff has evaluated 23 alternatives to the project with our major conclusions focused on five of the alternatives, in addition to the No Project Alternative, which were carried forward for full consideration:
  a) Eagle Mountain Alternative,
  b) Desert Southwest Transmission Project (DSWTP) Alternative,
  c) Devers-Palo Verde 500 kV No. 2 (DPV2) Project Alternative,
  d) Buck Boulevard to Julian Hinds with Reconductoring Alternative; and
  e) Wiley Well Substation Alternative.

Conclusions for several resource areas are based on incomplete baseline information, and only preliminary conclusions are presented for transmission system engineering (TSE) because the System Impact Studies for the project are currently being revised.

TECHNICAL AREAS MISSING SIGNIFICANT INFORMATION

Commission staff, with participation by Western and BLM as co-lead federal agencies have published two sets of Data Requests and conducted a two day workshop to secure additional information. Staff and the federal agencies intend to conduct two additional workshops prior to the publication of the Final Staff Assessment (FSA). At a later date not yet determined, the Energy Commission Committee, consisting of two Commissioners assigned to the BEPTL will hold public hearings in order to ask questions related to the FSA, and receive formal testimony and comments from the public, interested agency or parties in the proceeding.

In many technical subject areas of this preliminary PSA staff has identified informational needs that are required to complete their analyses and make informed recommendations. The table below shows the status of each technical area as it relates to incomplete or additional information required before the FSA can be completed and published.

Additional Information Required	Technical Subject Area	Additional Information Required	Technical Subject Area
No	Alternatives	**Yes**	Socioeconomics
No	Air Quality	**Yes**	Soils and Water Resources
Yes	Biological Resources	**Yes**	Traffic & Transportation
Yes	Cultural Resources	No	Transmission Line Safety
No	Geo/Paleo Resources	**Yes**	Transmission System Eng.
No	Haz/Material	**Yes**	Visual Resources
No	Land Use	**Yes**	Waste Management
No	Noise	No	Worker Safety/Fire Protection

STAFF CONCLUSIONS

Staff has concluded that, until all the information identified in this document has been provided and workshops have been held, it is unable to complete a full analysis, nor make a final recommendation on the petition to amend the Blythe Energy Project Amendment Petition. Additionally, staff can not now identify mitigation measures that would mitigate any significant direct, indirect or cumulative impacts of the project.

Staff will publish a joint FSA when the following information has been obtained (all dates are estimates):

Biological Resources:

- Biological assessment with mitigation measures accepted as complete by Western and United States Fish and Wildlife Service (Feb/Mar 2005).

Cultural Resources Data Requests (DR) #28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 42:

- #33, 37; a current cultural resources survey report of the impact area (Area of Potential Effect for the Buck to Julian Hinds Transmission Line, Buck to D-PV and the Transmission Line Midpoint Substation) (March, 2005).
- Not a DR; a current cultural resources survey report of the Impact area (Area of Potential Effects of the transmission line realignment near the airport if required) (report need dependent on FAA conclusion - see Traffic & Transportation below).
- #36, 38, 42; identification of mitigation measures that would ensure avoidance of cultural resources (March, 2005).
- #30, 34, 35, 37; an evaluation for the National Register of Historic Places and the California Register of Historic Resources for any resources that cannot be avoided (Mar/Apr. 2005).
- #28, 29, 31, 32; responses to data requests that are still not complete (Mar/Apr. 2005).
- Not a DR; conclusion of Native American consultation between Western Area Power Administration, the Bureau of Land Management and the Energy Commission (April, 2005).

Traffic Transportation DR #118:

- FAA's determination on Hazard to Air Navigation (Feb. 2005).

Socioeconomics DR #64 (receipt date linked to TSE below)

- #64a; construction payroll estimate.
- #64b; construction and operation sales tax estimate.
- #64c; value of purchased construction and operation equipment and materials estimate.
- #64d; estimated annual property taxes and expected life of project.
- #64e; year of value for $50 million dollar estimate for the cost of the project.

Soils and Water:

- Revised drainage erosion and sedimentation control plan (Spring 2005).

Transmission System Engineering DR #73, 74:

- #73, 74; amended System Impact Study prepared by SCE (Feb/Mar. 2005).
- Not a DR; supplementary System Impact Study prepared by Western (Spring 2005).
- #73, 74; facilities Studies report prepared by SCE (April 2005).

- #73, 74; facilities Study report by Western with connection to Buck Blvd Substation and decision (April 2005).
- #73, 74; CAISO analysis recommendations and preliminary approval letter (May 2005).

Visual Resources:

- Visual simulation of the alternative transmission poles route within the orange grove
- Alternative transmission poles route investigative study on adjacent land uses in the area and reviewing the type of user or viewers present in the orange grove area. (report need dependent on FAA conclusion - see Traffic & Transportation above)

Waste Management DR # 128:

- A route survey for the presence of military ordinance related hazardous material (Spring 2005).

BLYTHE TRANSMISSION LINE AMENDMENT (99-AFC-8C)
PRELIMINARY STAFF ASSESSMENT
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INTRODUCTION

Jack W. Caswell

PURPOSE OF THIS REPORT

Blythe Energy, LLC (BEP, Applicant) filed an amendment petition on October 12, 2004 requesting that the California Energy Commission (Energy Commission) amend the Commission Decision made on March 21, 2001 and modify the project in order to develop two new transmission lines and a substation for the existing Blythe Energy Project power plant facility located in the City of Blythe, Riverside County.

In March, 2001 the Energy Commission approved the Blythe Energy Project Application for Certification (AFC) (99-AFC-8). In the Energy Commission's review of that application it was determined that transmission improvements through the Imperial Irrigation District (IID) would solve electrical capacity direct delivery problems in the California market. As described in the AFC Blythe Energy submitted a service request to the IID for long tem transmission service through the district. In response to the request for services the IID submitted permitting designs for a double circuit 230-kV transmission line parallel to their existing Blythe-Niland 161-kV transmission line that is routed across the United States Marine Corps Chocolate Mountains Aerial Gunnery Range (USMC). USMC approval is required to initiate the requested improvements to the IID transmission line. Subsequent to the events of September 11, 2001 issues the USMC has permanently rejected any additional transmission line routing or improvements to transmission lines across the gunnery range.

Energy Commission staff prepared this Preliminary Staff Assessment (PSA) in accordance with NEPA/CEQA requirements. The Western Area Power Administration (Western) and Bureau of Land Management (BLM) are co-lead federal agency participants in this process and have control over portions of the existing Blythe Energy Project transmission system and a portion of the proposed right-of-way for the proposed additional transmission lines. Staff's environmental and engineering analysis in this document is the factual basis for staff's recommended finding regarding the project's potential to result in significant impacts on the environment or energy resources. It is the intent of staff and the co-lead federal agencies to conduct workshops to discuss the PSA and take comments. After this workshop process has been completed, staff will publish a Final Staff Assessment (FSA).

California's Warren-Alquist Act (Pub. Resources Code (PRC) § 25000 et seq.), provides the Energy Commission the exclusive power to certify all sites and "related facilities" for thermal electrical power plants of 50 MW or more within the state (Pub. Resources Code § 25120 and 25500 et seq.). Additionally, Title 20, California Code of Regulations (CCR) § 1769 authorizes the Energy Commission to approve amendments and modifications to those facilities it has certified. The amendment process includes an evaluation of the engineering and environmental impacts of the modified project and whether it will remain in compliance with applicable laws, ordinances, regulations, and standards.

Staff has edited existing Conditions of Certification (COC's) to the Blythe Energy Project license in various technical areas and in some cases added additional COC's which if implemented along with the Applicant's proposed mitigation measures, will ensure that the project would result in no significant environmental impacts. In addition, staff will adopt a reporting or monitoring program designed to ensure compliance with the Conditions of Certification during project development.

The Energy Commission has appointed a Committee composed of two Commissioners who conduct hearings at which all parties will have an opportunity to comment on the FSA and make recommendations on the amendment petition. The Committee will consider the amendment petition, staff's assessment, and any other evidence presented in the proceedings to determine whether to recommend approval of the amendment to the full Commission. Following hearings, the Committee will prepare and publish a proposed decision. The full Commission will then hold a hearing for final arguments and render a decision on the amendment petition application.

Section 1769(a)(3) authorizes the Commission's approval of the amendment petition if it can make the following findings:

"(A) The findings specified in section 1755 (c) [whether all significant environmental impacts can be mitigated or avoided], and (d) [if all significant impacts cannot be avoided, overriding considerations justify approving the amendment], if applicable;

(B) That the project would remain in compliance with all applicable laws, ordinances, regulations, and standards [LORS], subject to the provisions of Public Resources Code section 25525 [allowing override of local standards under specified circumstances];

(C) The change will be beneficial to the public, applicant, or intervenors; and

(D) There has been a substantial change in circumstances since the Commission certification justifying the change or that the change is based on information that was not available to the parties prior to Commission certification."

These topics and findings are discussed under the technical section of the PSA.

No particular format for the presentation of staff's testimony is provided in the statutes or regulations. Staff has chosen to model its report on the customary format for Staff Assessments for the initial certification of a facility. This report will focus on the proposed changes to the already certified project, discussing the already approved features only when they are relevant to that analysis. Some topic areas that would normally be found in a Staff Assessment for example, Reliability, Efficiency, Facilities Design and Public health are unaffected by the proposed amendments and are therefore present in the form of a brief explanation about why further discussion of the topic is unnecessary. For those topic areas in which discussion is warranted, the report will provide:

- a description of the project including the location of the project;
- an identification of the environmental setting;

- an identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
- a discussion of the ways to mitigate the significant effects identified, if any;
- an examination of whether the project would be consistent with existing zoning, plans, and other applicable land use controls and other applicable LORS; and
- the name of the person or persons who prepared or participated in the Staff Analysis.

The Energy Commission has made a substantial effort to notify interested parties and encourage public participation. The Energy Commission has:

- mailed Notices of Receipt to interested parties, local libraries, responsible and trustee agencies, and contiguous property owners on October 15, 2004 for the Petition To Amend the Blythe Energy Project;
- mailed a Notice of Public Hearing and Site Visit on November 1, 2004 to responsible and trustee agencies, persons with contiguous property to the proposed project, sensitive receptors, and individuals that have expressed interest in the project,
- placed an advertisement notice in the Desert Post Weekly and Palo Verde Valley Times to include radio and television stations on November 9, 2004 to announce a Informational Public Hearing and Site Visit,
- conducted an Informational/Scoping Hearing and Site Visit on November 10, 2004;
- placed an advertisement notice in the Desert Post Weekly and Palo Verde Valley Times on November 9, 2004 to announce a Public Workshop,
- sent notices to responsible and trustee agencies, persons with contiguous property and conducted a Public Workshop on November 15, 2004,
- published a Preliminary Staff Assessment on January 24, 2005 and sent notices of such to responsible and trustee agencies, libraries, persons with contiguous property to the proposed project and linears, and individuals that have expressed interest in the project; and
- will mail a Public Notice on February 1, 2005 for a Preliminary Staff Assessment Workshop to be conducted on February 17, 18, 2005 to responsible and trustee agencies, persons with contiguous property to the proposed project, and individuals that have expressed interest in the project.

TECHNICAL SECTIONS DETERMINED NOT APPLICABLE

The following technical sections are typically sections published as part of the Commissions Staff Assessment but were removed from the amendment review document process. The amendment petition for the Blythe Energy Project LLC, Transmission Line Modification does not require these technical sections. There is a brief explanation of why these sections were removed and where pertinent information relating to each section may be found in this document.

PUBLIC HEALTH: The technical area of Public Health discusses and analyzes the potential health impacts of releases of toxic emissions from construction and routine operation of proposed projects. Impacts on public and worker health from accidental releases of hazardous materials are examined in the Hazardous Materials Management section. Health effects from electromagnetic fields are discussed in the Transmission Line Safety and Nuisance section. Pollutants released from the project in wastewater streams to the public sewer system are discussed in the Soils and Water Resources section. Plant releases in the form of hazardous and non-hazardous wastes are described in the Waste Management section. Since the construction and routine operation of a transmission line would not release toxic contaminants into the environment. This document does not include a Public Health analysis.

EFFICIENCY: Power Plant Efficiency is not affected by this project. The power plant is presently capable of operating at full load (and thus at its maximum efficiency). This project would simply enable the owner to direct the plant's output where additional markets may be available. This document does not include an Efficiency analysis.

FACILITY DESIGN: Facility Design provides assurance that the power plant itself will be designed and constructed in compliance with applicable codes and standards. Such assurance regarding the design and construction of the transmission line is examined under the topic, Transmission System Engineering. This document does not include a Facility Design analysis.

RELIABILITY: Power Plant Reliability is not affected by this project. Reliability is determined by the design, construction and operation of the power plant, and by adequate supplies of fuel and cooling water. Any reliability issues related to electric transmission are examined under the topic, Transmission System Engineering. This document does not include a Reliability analysis.

PROJECT DESCRIPTION

Jack W. Caswell

PROJECT TITLE

Blythe Energy Project Transmission Line Modifications, Petition for Post-Certification Amendment (99-AFC-8C).

LEAD GOVERNMENT AGENCIES AND ADDRESSES

STATE

California Energy Commission
Systems Assessment and Facilities Siting Division
1516 Ninth Street
Sacramento, CA 95814

FEDERAL

Bureau of Land Management
South Coast Field Office
690 W. Garnet Ave.
North Palm Springs, Ca 92258

FEDERAL

Western Area Power Administration
Corporate Services Office
12155 W. Alameda Pkwy
Lakewood, Co 80228-8213

PROJECT COMPONENT LOCATIONS

The proposed modifications would be located entirely within Riverside County, between the Buck Substation near the City of Blythe and the Julian Hinds Substation near Hayfield as illustrated in Figure 1. For most of its length, the Buck to Julian Hinds transmission line component would be located adjacent to the existing Southern California Edison's Devers-Palo Verde 500 kV line as illustrated in Figure 2. Along most of its 67.4 length, the Buck to Julian Hinds transmission line would be located within a 95 foot right-of-way adjacent to and north of the existing Southern California Edison's Devers-Palo Verde right-of-way as illustrated in Figure 1. The existing Devers-Palo Verde right-of-way on Bureau of Land Management lands is 260 feet wide.

The 6.7 Buck to Devers-Palo Verde Transmission line component to the south would be located adjacent to an existing Imperial Irrigation District 161 kV transmission line with a new substation for interconnection, to be located adjacent to Southern California Edison's existing Devers-Palo Verde 500 kV transmission line as illustrated in Figure 3.

PROJECT SPONSOR'S NAME AND ADDRESS

Blythe Energy, LLC
700 Universe BLVD
Juno Beach, FL 33408

GENERAL PLAN DESIGNATIONS

- Bureau of Land Management Plans (MUC's)
- Riverside County General Plan
- Desert Center Specific Area Plan
- Palo Verde Valley Specific Plan
- Airport Plans – Desert Center, FAA Regulations
- Scenic Highways Element Plan
- City of Blythe General Plan

ZONING

- Bureau of Land Management, Class L and M, (Multiple Use Class)
- Riverside County General Plan, Public Facilities and Services
- City of Blythe General plan, I-H Zone

PROJECT HISTORY AND DESCRIPTION

On December 9, 1999, Blythe Energy Limited Liability Corporation, currently owned by Florida Power & Light (FPL), filed an Application for Certification (AFC) seeking approval from the Energy Commission to build the Blythe Energy Project (BEP) Blythe Energy, LLC is the owner of the BEP, a 520-megawatt (MW) natural gas fired electric-generating facility situated within the City of Blythe, Riverside County, California. In March 2001, the California Energy Commission (CEC) approved the Blythe Energy Application for Certification (99-AFC-8). The BEP started commercial operation in December of 2003.

The proposed transmission line modifications are for the purpose of improving the long-term transmission paths available for delivery of the BEP electrical output to the Southern California electrical transmission system. The proposed transmission line modifications would also serve to relieve transmission congestion and provide needed energy supplies in southern California for the future.

There are two distinct components to the proposed Blythe Energy Project transmission line petition: The proposed modifications would be located entirely in Riverside County. (see figure 1)

1) Buck to Julian Hinds Transmission Line Component:

- Upgrades to Western's Buck Substation.
- Installation of approximately 67.4 miles of new 230 kV transmission line between the Buck Substation (located adjacent to the BEP) and the Metropolitan Water District's Julian Hinds Substation (located approximately sixty miles to the west).

- The proposed transmission line route would generally follow Southern California Edison's (SCE's) existing 500 kV Devers-Palo Verde transmission line.
- Transmission line structures would be concrete, single-pole structures.
- Upgrades to the Julian Hinds Substation. (see diagrams below and figure 2)

2) Buck to Devers-Palo Verde Transmission Line Component:

- Upgrades to Western's Buck Substation.
- Installation of approximately 6.7 miles of a new 230 kV transmission line (initially operated at 161 kV) between the Buck Substation and SCE's existing Devers-Palo Verde 500 kV transmission line.
- Transmission line structures would be concrete single-pole structures.
- Construction of a new 161 kV to 500 kV substation ("Midpoint Substation") at the point of interconnection with SCE's existing Devers-Palo Verde 500 kV transmission line. (See diagrams below and figure 3)

Buck to Julian Hinds Transmission Line

The proposed 230-kV transmission line is approximately 67.4 miles long, extending from the existing Buck Substation, adjacent to the Blythe 1 Energy Project, to SCE's Julian Hinds Substation west of Desert Center. The first 6.7 miles of conductor will be on the same poles as proposed for the Buck to Devers-Palo Verde transmission line. The remaining 60.7 miles of proposed line would be located for most of its length adjacent to SCE's 500-kV transmission line on new poles. The transmission structures will be primarily a single-column concrete/steel hybrid type and require a right of way width of 95 to 100 feet. The height of the structures will range from 75 to 125 feet above ground surface depending on terrain and span lengths. The span length will range from 400 to 900 feet, averaging about 820 feet. Each pole structure base will be buried to a depth of 20 feet and backfilled with gravel or concrete to form the pole foundation.

Buck to Devers-Palo Verde Transmission Line

The proposed 230-kV transmission line is approximately 6.7 miles long, extending from the existing Buck Substation, adjacent to the Blythe 1 Energy Project, to Southern California Edison's (SCE's) existing Devers-Palo Verde 500-kV transmission line. This proposed line will be located adjacent to Imperial Irrigation District's existing 161-kV transmission line. The transmission structures will be primarily a single-column concrete/steel hybrid type and require a right of way width of 95 to 100 feet. The height of the structures will range from 75 to 125 feet above ground surface depending on terrain and span lengths. The span lengths will range from 400 to 900 feet, averaging about 820 feet. Each pole structure base will be buried to a depth of 20 feet and backfilled with gravel or concrete to form the pole foundation.

Substations and Staging/Laydown Areas

Buck Substation

The Buck Substation upgrade will involve the modification of existing equipment and the addition of new switchgear and related equipment within the current substation boundaries. A construction staging/laydown site within the existing substation would be used as one of four staging areas for the BEPTL. No new area will be disturbed as a result of the Buck Substation upgrades.

Julian Hinds Substation

The Julian Hinds Substation upgrade will also require the modification of existing equipment and the addition of new switchgear and related equipment. However, the existing substation site will need to be expanded by approximately 0.4 acres. A construction staging/laydown site of an additional 0.5 acres adjacent to the substation would be used as one of four staging areas for the BEPTL.

Midpoint Substation

The proposed 41.3 acre Midpoint Substation would be located at the intersection of the new transmission line with the existing SCE 500-kV transmission line. Equipment within the proposed substation would include bus structures, circuit breakers, protection devices and associated communication equipment. Access to the site would be provided by an existing 14-foot wide access road from Hobson Way. The access road would be surfaced with gravel or maintained to allow for all weather access. The equipment would be located in the center of the site and have a gravel surface around the concrete equipment pads and foundations. A perimeter road would encircle the equipment inset from the property boundary, and a buffer of land with native vegetation would separate the perimeter road with the fenced property boundary. Midpoint Substation would also serve as one of four construction staging/laydown areas for the BEPTL.

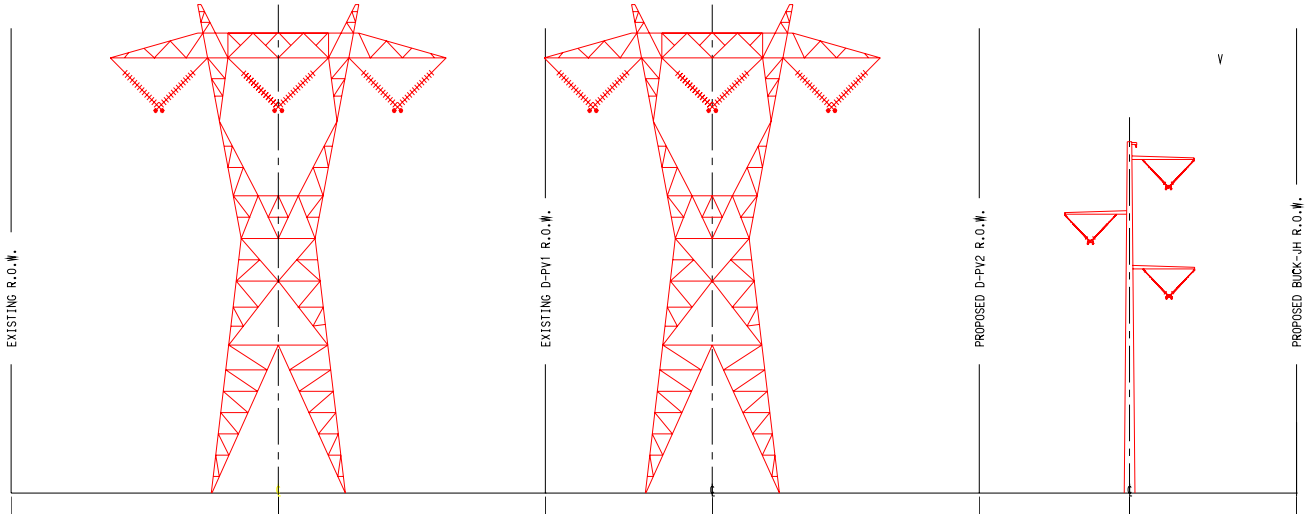
Desert Center

Desert Center will serve as the fourth staging/laydown area for the BEPTL.

Because the path ratings for each of the proposed transmission line components will not be established by the time this preliminary review is published, Blythe Energy is requesting approval of each transmission component path described as part of the project modifications. It is Blythe Energy's expectation that it may be necessary to ultimately build both components to deliver the full output of the Blythe Energy Project power plant facility.

Diagrams are representative of the existing and planed transmission towers:

Existing SCE Devers-Palo Verde 1 T-line	Planned SCE Devers-Palo Verde 2 T-line	Proposed Blythe Buck – Julian Hinds T-line



Combined D-PV 1 & 2 ROW

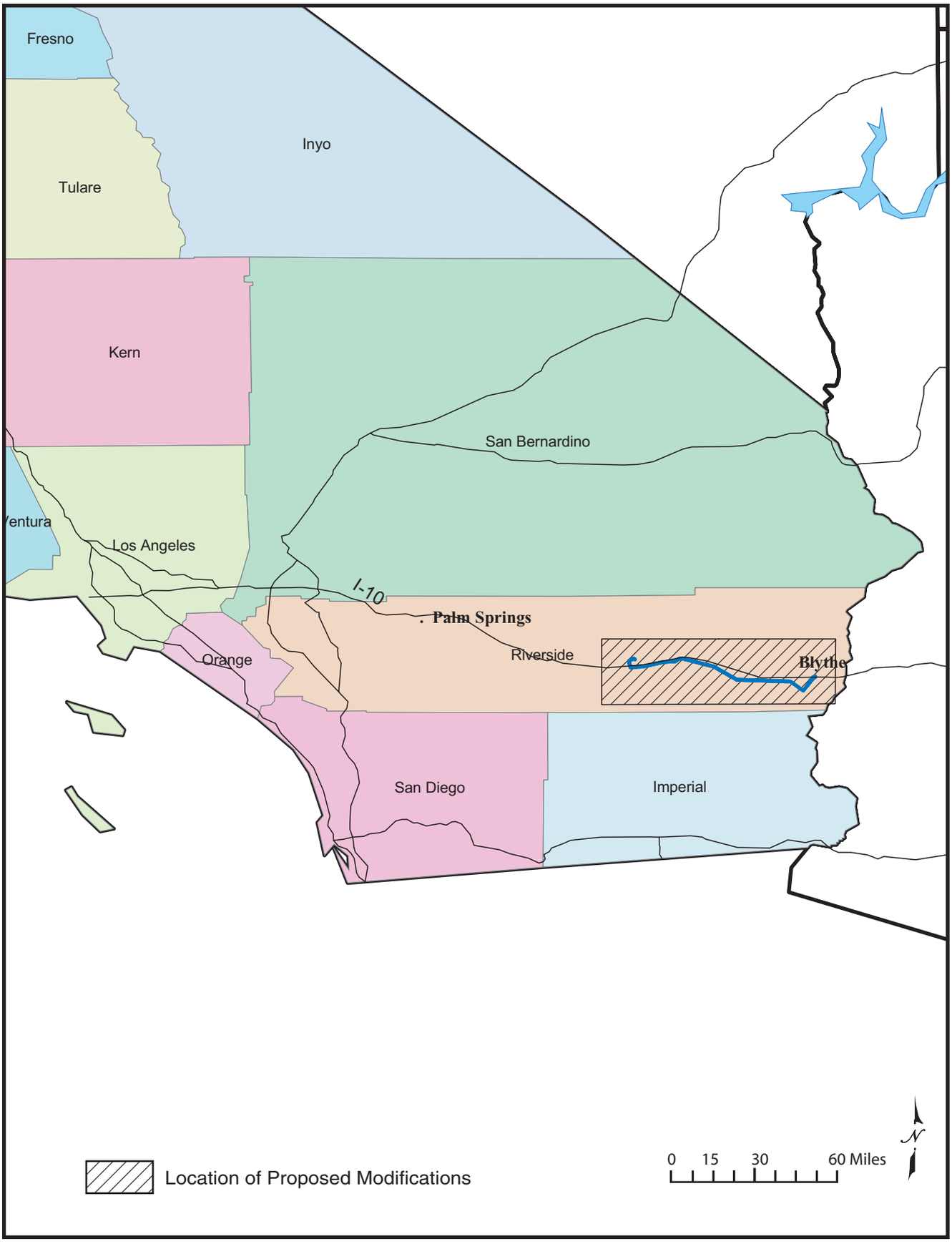
Proposed ROW 95’

CONSTRUCTION SCHEDULE AND WORKFORCE

If approved by the Energy Commission, Blythe Energy expects to begin construction of the project by 2005 and energize the system 2007 for the summer peak season. Blythe Energy estimates the capital costs of the transmission line project to exceed $50 million of which several million will go directly to local purchases. Blythe Energy expects to employ up to approximately 162 construction workers over the 24-month construction schedule. Construction payroll costs are estimated to be $8.9 million while annual operations payroll is expected to be $280,000 for three plant workers.

PROJECT DESCRIPTION - FIGURE 1

Blythe Energy Transmission Line Project - Regional Location Map

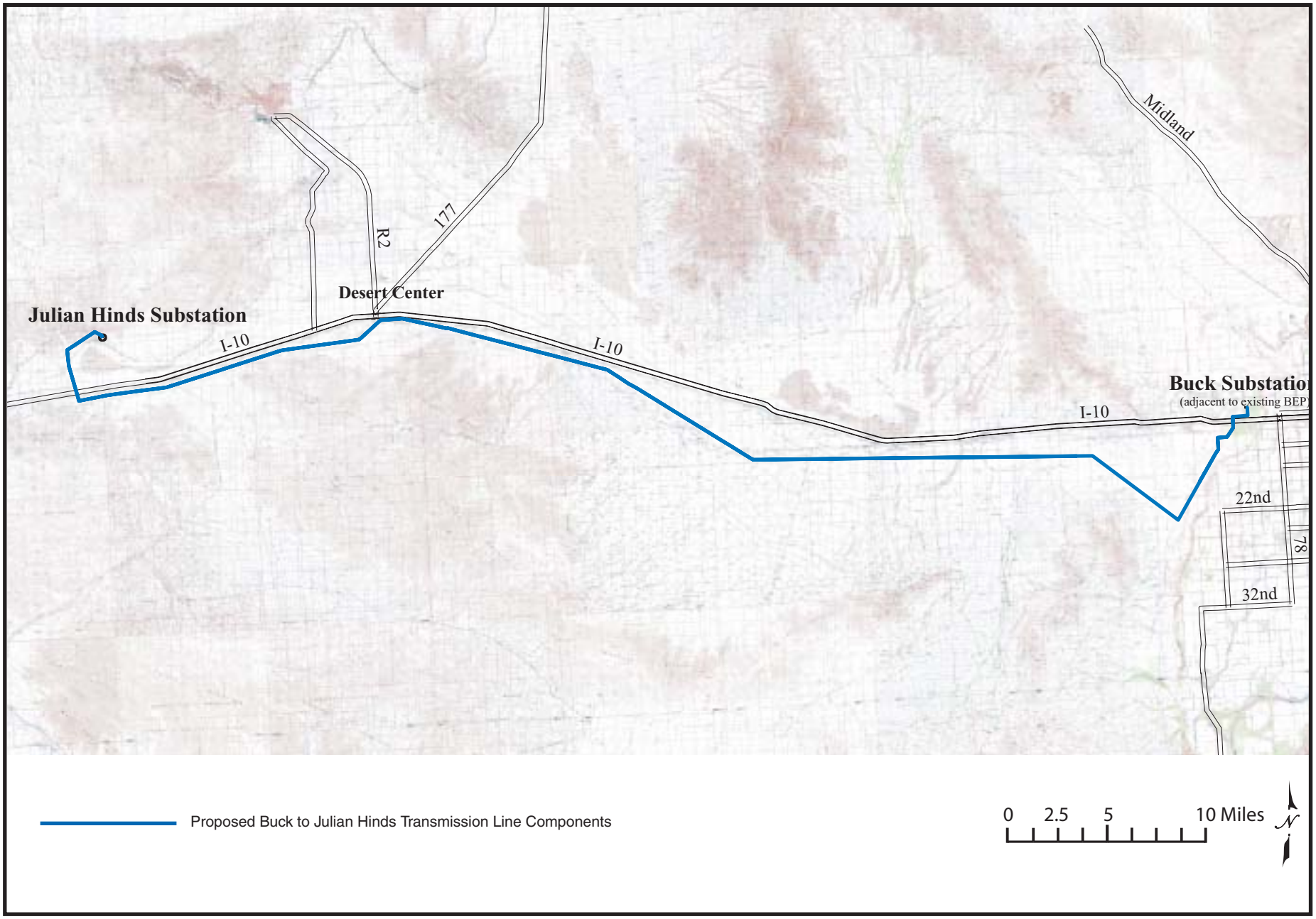


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Petition to Amend the Blythe Power Plant, October 2004

PROJECT DESCRIPTION - FIGURE 2

Blythe Energy Transmission Line Project - Buck to Julian Hinds Transmission Line Route

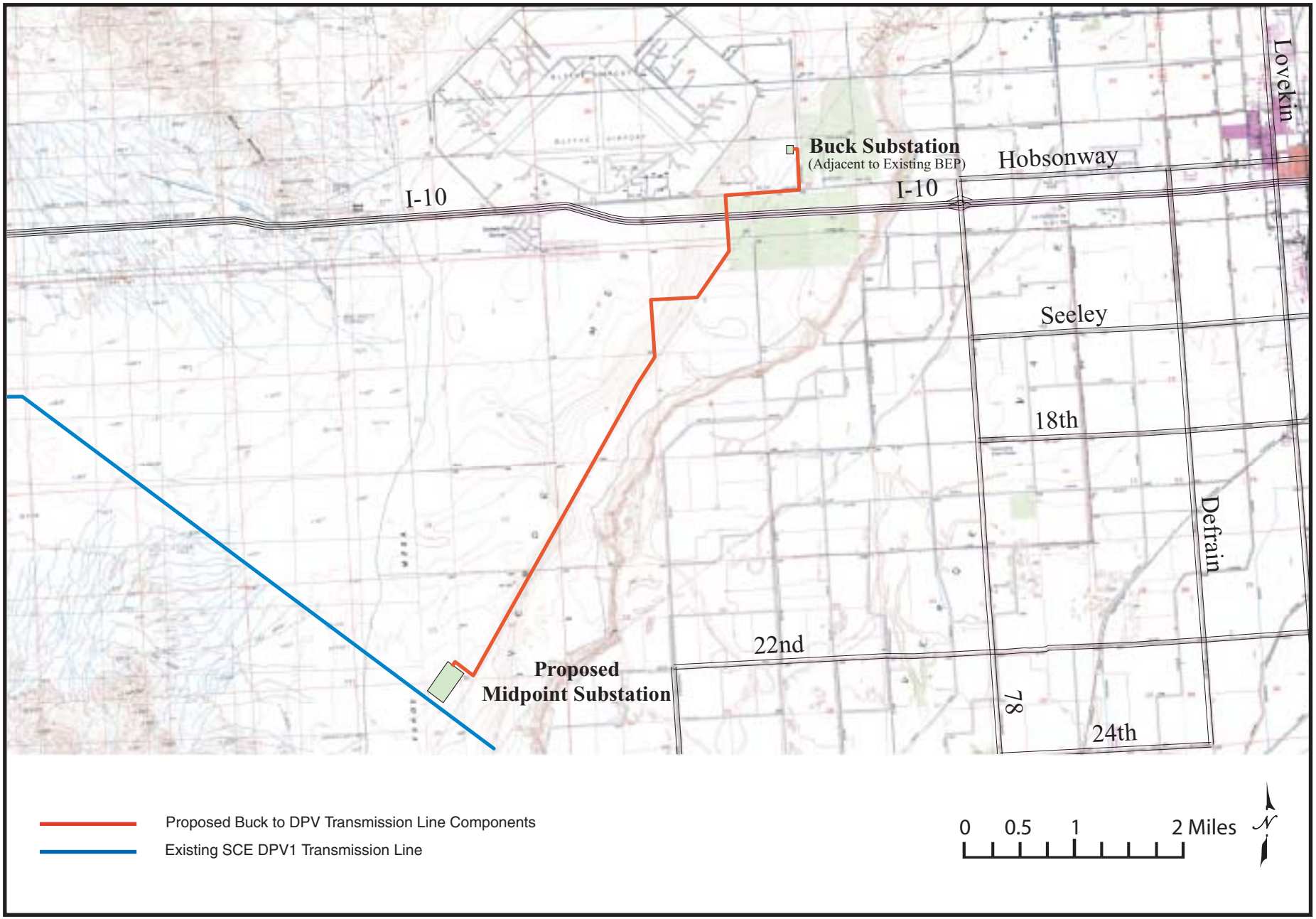


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Petition to Amend the Blythe Power Plant, October 2004

PROJECT DESCRIPTION - FIGURE 3

Blythe Energy Transmission Line Project - Buck to Devers - Palo Verde Transmission Line Route



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Petition to Amend the Blythe Power Plant, October 2005

ENVIRONMENTAL ASSESSMENT

AIR QUALITY

Gabriel D. Taylor

SUMMARY OF CONCLUSIONS

If the construction conditions of certification proposed below are implemented, staff is confident that the short-term air quality impacts from the construction of the proposed Blythe Energy Project Transmission Line (BEPTL) would not be significant. Staff is further convinced that the long-term operation of the BEPTL would not generate any significant criteria pollutant emissions or air quality impacts.

INTRODUCTION

This section considers the potential air quality impacts of the Blythe Energy, LLC (Blythe) Petition for Post-Certification Amendment (PPCA) for construction and operation of the proposed BEPTL.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

All applicable Laws, Ordinances, Regulations and Standards (LORS) are listed below in AIR QUALITY Table 1, however construction and operation of the proposed BEPTL would not require any new permits from either the South Coast Air Quality Management District (SCAQMD), or the Mojave Desert Air Quality Management District (MDAQMD) (BEP 2004, 5.2-8).

AIR QUALITY Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal LORS	
42 U.S.C. §7401 et seq.	Federal Clean Air Act

State LORS	
HSC §41700	"... no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."
CCR Title 13 §2423	Exhaust Emissions Standards and Test Procedures, Off-Road Compression-Ignition Engines

Local LORS - Mojave Desert Air Quality Management District	
Rule 201	Permits to Construct
Rule 221	Federal Operating Permit Requirement
Rule 401	Visible Emissions
Rule 402	Nuisance
Rule 403	Fugitive Dust
Rule 404	Particulate Matter Concentration
Rule 409	Combustion Contaminates
Rule 431	Sulfur Content of Fuels

Local LORS - South Coast Air Quality Management District	
Rule 201	Permit to Construct
Rule 401	Visible Emissions
Rule 402	Nuisance
Rule 403	Fugitive Dust
Rule 404	Particulate Matter - Concentration
Rule 409	Combustion Contaminates
Rule 431-2	Sulfur Content of Liquid Fuels
Rule 444	Open Burning

SETTING

The Blythe Energy Project (BEP) is a net 500 MW combined cycle facility consisting of two F-Class Siemens V84.3A combustion turbine generators, two duct fired heat recovery steam generators (HRSGs) and a single steam turbine generator. The facility is located about 2 miles west of the city of Blythe, California. The project received final approval from the Energy Commission on March 21, 2001, and began commercial operation on July 1, 2003.

Construction of the proposed BEPTL would take approximately 12 to 18 months and consist of approximately 74 miles of new transmission lines extending to the west of the BEP through a portion of two air quality management districts, the MDAQMD, and the SCAQMD. In addition, Blythe proposes to build one new interconnection substation.

The applicant estimates constructing 485 new transmission poles (BEP 2004, Tables 3.2-1 & 3.3-1), a total of 174 acres of disturbed land (BEP 2004, Tables 3.2-2 & 3.3-2) and a maximum workforce of approximately 162 personnel (BEP 2004, p. 3-22 & 3-34). The types of construction equipment that would be used include: pick-up and haul trucks, semi-tractor trailer vehicles, up to four bulldozers, drilling rigs, diggers and backhoes for foundation work, up to four cranes for unloading materials and erecting towers, and puller/tensioner equipment for erecting the transmission lines (BEP 2004, 3.2.7 & 3.3.7). Existing transmission line access roads would provide principal access to construction areas, and most construction staging/laydown areas would be located in previously disturbed land (BEP 2004, Table 3.2-2 & 3.3-2), thus minimizing the need for new road construction and the associated dust generation (BEP 2004, p. 5.2-4).

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

The U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have both established allowable maximum ambient concentrations of air pollutants based on public health impacts, called ambient air quality standards (AAQS). The state AAQS, established by CARB, are typically lower (more stringent) than the federal AAQS, established by the U.S. EPA. In general, a region is designated as attainment for a specific pollutant if the concentrations of that air contaminant do not exceed the standard. Likewise, an area is designated as nonattainment for an air contaminant if that standard is violated. Both the MDAQMD and the SCAQMD (the two air quality management regions within which the proposed construction and operation would occur) are designated as nonattainment for PM10 and ozone. Because the proposed construction would occur in a region that is classified as nonattainment for both the state PM10 and ozone AAQS; any PM10, ozone or ozone precursor emissions could contribute to an existing violation and would thus be significant.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Presented below are separate analyses for the construction and operations emissions and impacts of the proposed BEPTL project.

Construction Impacts and Mitigation

Though construction emissions from the BEPTL project would be both short-term and concentrated in the vicinity of the construction, they have the potential to be significant since the region is classified as nonattainment for both PM10 and ozone. The criteria pollutant emissions during construction would be comparable to the emissions from other large construction projects, and would primarily consist of fugitive dust from earth moving activities and combustion emissions from construction equipment and vehicles. Combustion emissions contain a mix of criteria pollutants, including both PM10 and various ozone precursors.

In prefiling discussions, the project owner was concerned with this potential for a significant contribution to existing violations of AAQS during construction and requested guidance from staff concerning the necessary mitigation efforts to avoid such a significant contribution. Staff provided the applicant with the most current construction mitigation requirements that would normally be imposed on construction projects significantly larger then the proposed BEPTL. The applicant used this guidance to develop the proposed conditions of certification presented in the Application for Certification (BEP 2004, 5.2.3). The following is a detailed description of the various aspects of these construction mitigation measures.

The effectiveness of construction dust mitigation strategies are measured as a percentage of the uncontrolled particulate emissions that are avoided. Thus, one hundred percent efficiency would mean that virtually no dust has been emitted. This effectiveness can vary widely due to a number of influencing factors. Some of these factors include ambient conditions (temperature, wind & humidity), size & weight of vehicles, vehicle speed, number of vehicles and soil parameters (chemical composition,

particle size distribution, organic components, etc.) The frequency of construction activities (disturbance of stabilized surfaces) and day to day aggressiveness of mitigation efforts (application of water or dust suppressants, street sweeping to remove carryout from paved roads, etc.) are further sources of uncertainty. Nevertheless, average control efficiency estimates have been developed. AIR QUALITY Table 2 below lists the estimated control efficiency for various construction mitigation measures based on an analysis of Best Available Control Measures (BACM) prepared by San Joaquin Valley Air Pollution Control District (SJVAPCD) staff in October 2001.

AIR QUALITY Table 2
Estimated Average Construction Mitigation Control Efficiency

Source	Control Method	Percent Efficiency
Construction, Demolition and Earthmoving	Truck Load Covers	95
	Pave Roads	90
	Chemical Dust Suppressant	60
	Periodic Watering	50
Windblown Dust	Plant vegetation completely covering disturbed surface	99
	Chemical Dust Suppressant	75-80
Bulk Materials	Wind Fences	60-80
	Wet Suppression	56-81
Unpaved Roads & Parking Lots	Paving	99
	Chemical Dust Suppressant	75
	Gravel	60
	Reduce Traffic by 50%	50
	Set Speed Limits	37
Carryout to Paved Roads	Truck Load Covers	95
	Wheel Washers	75
	Paved Access Aprons	60
	Street Sweeping & Other Road Cleanup	45
Disturbed Open Areas & Vacant Lands	Re-vegetation, Chemical Dust Suppressants & Wind Fences	70
	Plant Trees as Windbreak	8

H.R. Guerra, J.R. Nazareno, T. Le & J. Barba; San Joaquin Valley Unified Air Pollution Control District; *Final Staff Report: BACM Amendments to Regulation VIII (Fugitive PM10 Prohibitions), Table 1*; October 31, 2001

Experience has shown that there is a large degree of uncertainty in these average values due to varying levels of vigilance on the part of construction personnel. This is particularly true for efforts to control dust from earth moving activities and unpaved roads: if the mitigation measures are applied correctly and with sufficient frequency the control efficiency can approach 100%, but if applied incorrectly or infrequently the control efficiency can be significantly below the average.

Air Quality Construction Mitigation Manager (AQCMM)

The only way to guarantee a maximum day to day mitigation effort is to set up a system for real-time supervision of the mitigation. Staff has worked with a number of facility

construction projects and refined this requirement into condition of certification **AQ-SC1**. This condition requires designation of an Air Quality Construction Mitigation Manager (AQCMM), as well as any number of AQCMM Designees, who are responsible for monitoring the dust suppression efforts and directing more rigorous application of mitigation methods in situations where visible dust is observed. These individuals generally should have special experience with the type of construction and construction air quality monitoring, but they can also have other responsibilities on the project as long as they do not conflict with their AQCMM responsibilities.

Condition of Certification **AQ-SC2** requires submittal of an Air Quality Construction Mitigation Plan (AQCMP) that details both any unique considerations of the specific project site and the procedures the AQCMM and their Delegates would use to enforce compliance with the construction mitigation requirements. The AQCMP would also provide a schedule and procedure for documenting the mitigation efforts.

Air Quality Construction Mitigation

The construction mitigation requirements themselves are separated into two sections: construction fugitive dust control and diesel-fueled engine controls.

The fugitive dust controls specified in condition of certification **AQ-SC3** range from required speed limits and site access control to active dust suppression activities. Further, condition of certification **AQ-SC4** requires continuous supervision by either the AQCMM or their Delegate of all construction activities, and gives the AQCMM and their Delegates the authority to both actively implement additional dust mitigation strategies and temporarily stop construction if necessary. Many of these limitations would be particularly applicable to the new substation construction site and to the necessary construction staging/laydown areas along the transmission line path.

The diesel-fueled engine control requirements in condition of certification **AQ-SC5** are intended to minimize the criteria pollutant emissions from construction equipment. The primary function of the condition is to require all large equipment engines to meet or exceed Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines (CCR, Title 13, section 2423(b)(1)). Further requirements concerning fuel sulfur content, equipment maintenance, equipment idle time and after market emissions controls are also imposed based on experience on other large construction projects in recent years.

Staff agrees in concept with the conditions of certification based on staff's prefiling guidance and proposed by Blythe in the PPCA, however staff presents below a slightly updated version. Staff believes these proposed conditions of certification are substantially similar to the conditions proposed by Blythe in the PPCA, but provide a more clear presentation. Staff has refined these conditions of certification over the years as the result of extensive experience with large construction projects and this is the latest version of air quality construction mitigation conditions. Staff is confident that with the full implementation of the construction conditions of certification proposed below (**AQ-SC1** through **AQ-SC5**), the criteria pollutant impacts from construction of the BEPTL project would not be significant. In addition, to avoid possible future confusion,

staff proposes deleting the two existing construction conditions (**AQ-C1** and **AQ-C2**) which address similar construction mitigation issues.

Operation Impacts and Mitigation

There are two sources of potential criteria pollutant emissions during normal operations of electrical transmission lines: maintenance activities and corona discharge emissions.

Maintenance Activities

Normal maintenance activities would require a relatively minimal work force and quantity of heavy equipment. Maintenance of the substations would follow a routine schedule of inspections, preventative maintenance and necessary repairs. The transmission lines themselves would be regularly inspected by both ground and aerial patrols, with maintenance work and repairs scheduled as necessary (BEP 2004, 3.2.9.2).

Based on the limited number of personnel and pieces of heavy equipment required for long term maintenance of transmission lines, staff does not expect these activities to be a significant source of criteria pollutant emissions.

Corona Discharge Emissions

Corona discharge occurs on high voltage transmission lines when the localized electric field at the surface of the conductor is strong enough to overcome the dielectric strength of air. Though air is an excellent insulator at potentials up to approximately 1.5 MV/m (megavolt per meter), surface defects and water droplets can enhance the electric field at the surface of the conductor to cause localized ionization of the ambient air (Carstensen 1987, p. 78). This ionization causes the production of small quantities of ozone and oxides of nitrogen. Approximately ninety percent of the reactions produce ozone (DOE 2004, p. 3-89).

Corona effects are well understood and have been studied extensively for nearly a century. Corona discharge is a source of transmission energy loss and as such the project owner would actively attempt to prevent it both in the design and maintenance phases of the project. The transmission lines would be specifically designed to minimize corona effects, and specialized tools are readily available to quickly detect corona discharge sites (e.g. EPRI's DayCor®) which can then be repaired. Research has shown that even under worst case conditions (damp or rainy weather with wind directed perpendicular to the line) the maximum ozone concentrations near the conductor are orders of magnitude less than one part per billion (DOE 2001 and CPUC 1999). Further, the general consensus among all sources found is that the quantity of ozone and other oxides generated due to corona effects has long been considered insignificant (DOE 2001, Carstensen 1987 and CPUC 1999).

Based on the information provided in the PPCA and the analysis above staff concludes that there would be no significant air quality impacts associated with the operations of the proposed BEPTL project. Both the operations and general maintenance of electrical transmission lines produce negligible air emissions and no significant impact on ambient air quality.

TRANSMISSION LINES NEAR THE AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would follow the existing D-VP power line path through an existing right of way (ROW) in an orange grove. This proposed minor realignment of a small length of the transmission lines would not change any of the conclusions presented here concerning ambient air quality emissions and impacts.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No comments received.

CUMULATIVE IMPACTS AND MITIGATION

Air Quality staff performs a cumulative impact analysis to ensure that no significant air quality impact is caused by the combination of multiple projects permitted at approximately the same time. To evaluate reasonably foreseeable future projects as part of a cumulative impact analysis, staff needs project-specific information about probable future projects in the vicinity of the BEPTL project. The time at which a probable future project is well enough defined to have the information necessary to perform a modeling analysis is usually when that project applicant has submitted an application to the District for a permit. Air dispersion modeling required by the District would necessitate that each project applicant develop the modeling input parameters to perform a modeling analysis. Therefore, our local cumulative impacts analysis evaluates only those future projects that are currently under construction, or are currently under District review in our cumulative impact analysis.

No such projects were identified in the vicinity of the BEPTL project. Staff therefor concludes that there is no potential for a cumulative impact from the operation of the BEPTL project.

CONCLUSIONS

If the construction conditions of certification proposed below are implemented, staff is confident that the short-term air quality impacts from the construction of the proposed BEPTL would not be significant. Staff is further convinced that the long-term operation of the proposed BEPTL would not generate any significant criteria pollutant emissions or air quality impacts.

PROPOSED CONDITIONS OF CERTIFICATION

Staff proposes to delete the two existing construction conditions of certification (**AQ-C1** and **AQ-C2**) and replace them with the following five conditions (**AQ-SC1** through **AQ-SC5**). This will avoid possible future confusion regarding which construction conditions

apply. The old conditions are presented below in ~~strikeout~~ format, followed by the new conditions in underline format.

AQ-C1 (Deleted) ~~Prior to breaking ground at the project site, the project owner shall prepare a Fugitive Dust Mitigation Plan that will specifically identify fugitive dust mitigation measures that will be employed for the construction of the Blythe Energy Project and related facilities. The Fugitive Dust Mitigation Plan shall specifically identify measures to limit fugitive dust emissions from construction of the project site and linear facilities. Measures that should be addressed include the following:~~

~~1. The identification of the employee parking area(s) and the surface composition of those parking area(s);~~
~~2. The frequency of watering of unpaved roads and disturbed areas;~~
~~3. The application of chemical dust suppressants;~~
~~4. The use of gravel in high traffic areas;~~
~~5. The use of paved access aprons;~~
~~6. The use of posted speed limit signs;~~
~~7. The use of wheel washing areas prior to large trucks leaving the project site; and,~~
~~8. The methods that will be used to clean up mud and dirt that has been tracked-out from the project site onto public roads.~~

~~**Verification:** At least thirty (30) days prior to breaking ground at the project site, the project owner shall provide the CEC Compliance Project Manager (CPM) with a copy of the Fugitive Dust Mitigation Plan (FDMP) for approval. Ground breaking shall not commence until the project owner receives written approval of the FDMP from the CPM.~~

AQ-C2 (Deleted) ~~The project owner shall require as a condition of its construction contracts that all contractors/subcontractors ensure that all heavy earthmoving equipment, including but not limited to bulldozers, backhoes, compactors, loaders, motor graders, trenchers, cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer's specifications. The project owner shall further require as a condition of its construction contracts, that all heavy construction equipment shall not remain running at idle for more than 5 minutes, to the extent practical.~~

~~**Verification:** The project owner shall submit to the CPM, via the Monthly Compliance Report, a list of all heavy equipment used on site during that month including the owner of that equipment responsible for its maintenance and a letter from each owner indicating that the heavy equipment in question is properly maintained and tuned to manufacturer's specifications. The project owner shall maintain construction contracts on-site for six months following the start of commercial operation.~~

AQ-SC1 *Air Quality Construction Mitigation Manager (AQCMM)*: The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with conditions **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates.

The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent from the CPM.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 *Air Quality Construction Mitigation Plan (AQCMP)*: The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with conditions **AQ-SC3**, **AQ-SC4** and **AQ-SC5**.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt.

AQ-SC3 *Construction Fugitive Dust Control*: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the Project. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of **AQ-SC4** (Dust Plume Response Requirement). The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.

i) All paved roads within the construction site shall be swept as needed to prevent the accumulation of dirt and debris.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept when dirt or runoff from the construction site is visible on the public roadways.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this condition, (2) copies of any complaints filed with the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 *Dust Plume Response Requirement*: The AQCMM or an AQCMM Delegate shall continuously monitor the construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if step 2 specified above fails to result in

effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

AQ-SC5 *Diesel-Fueled Engines Control*: The AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

b) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.

c) All construction diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 1 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is “not practical” if, among other reasons:

(1) There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

(2) The construction equipment is intended to be on-site for ten (10) days or less.

(3) The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

d) The use of a soot filter may be terminated immediately if one of the following conditions exists, provided that the CPM is informed within ten (10) working days of the termination:

(1) The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.

(2) The soot filter is causing or is reasonably expected to cause significant engine damage.

(3) The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.

(4) Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

e) All heavy earthmoving equipment and heavy duty construction related trucks with engines meeting the requirements of (c) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

f) All heavy construction equipment with engines meeting the requirements of (c) above shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR a summary of all actions taken to maintain compliance with this condition, copies of all diesel fuel purchase records, a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained, and any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

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BIOLOGICAL RESOURCES

Stuart Itoga

SUMMARY OF CONCLUSIONS

The Bureau of Land Management (BLM) and Western Area Power Administration (Western) are federal co-lead agencies for the Blythe Energy Project Transmission Line Modification (BEPTL). The project would affect U.S. Fish and Wildlife Service (USFWS) critical habitat, the BLM Chuckwalla Desert Wildlife Management Area (both designated for recovery of desert tortoise), and the BLM Chuckwalla Valley Dune Thicket Area of Critical Concern designated to protect sensitive wildlife habitat. Most of the Buck to Julian Hinds transmission line would be constructed on land managed by the BLM. Western prepared a draft Biological Assessment (BA) but has not requested formal consultation with the U.S. Fish and Wildlife Service (USFWS). BLM has not yet commented on the BA.

Energy Commission staff, USFWS, and California Department of Fish and Game (CDFG)) staff do not agree with applicant's habitat assessment of the area proposed for the Midpoint Substation and conclude that it is creosote bush scrub habitat suitable to support desert tortoise. Impacts caused by constructing the project will significantly impact desert tortoise, Mojave fringe-toed lizard (MFTL), Harwood's milkvetch, Abram's spurge, Arizona spurge, Cove's cassia, Crucifixion thorn, Mesquite nest straw and Orocopia sage. Staff is working with Western, USFWS, and CDFG staff to develop mitigation measures to reduce impacts to levels less than significant.

Staff and Western staff concluded that applicant underestimated impact acreages associated with pole pad construction areas, and conductor splicing/pulling/tensioning sites. Based on figures submitted by Western, staff recalculated impact acreages for disturbances associated with the aforementioned activities. Staff's acreage impact figures are greater than those submitted by the applicant for the Blythe Energy Project Transmission Line Modification (BEPTL).

INTRODUCTION

This section provides the Energy Commission staff's analysis of potential impacts to biological resources from constructing and operating the Project. This analysis addresses potential impacts to state and federally listed species, species of special concern, and areas of critical biological concern. It describes the biological resources of the project site and at the locations of associated facilities. It discusses the need for mitigation and the adequacy of mitigation proposed by the applicant. Where necessary it specifies additional mitigation measures to reduce identified impacts to less than significant levels. It also determines compliance with applicable laws, ordinances, regulations and standards (LORS), and recommends conditions of certification.

This analysis is based, in part, upon information provided in the Blythe Energy Project Transmission Line Modification Petition for Post Certification Amendment (BLYTHE 2004a), site visits, workshops, staff data requests, applicant responses, Biological Assessment, Biological Evaluation, and consultations with various agency staff.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

BEPTL must comply with the following laws, ordinances, regulations, and standards during project construction and operation.

FEDERAL

Endangered Species Act of 1973

Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat.

Migratory Bird Treaty Act

Title 16, United States Code, sections 703 - 712, prohibits the take of migratory birds.

Clean Water Act of 1977

Title 33, United States Code, sections 1251-1376, and Code of Federal Regulations, part 30, section 330.5(a)(26), prohibits the discharge of dredged or fill material into the waters of the United States without a permit.

STATE

California Endangered Species Act of 1984

Fish and Game Code sections 2050 et seq. protects California's rare, threatened, and endangered species.

Nest or Eggs – Take, Possess, or Destroy

Fish and Game Code section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs or any bird.

Birds of Prey or Eggs – Take, Possess, or Destroy

Fish and Game Code section 3503.5 protects California's birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

Migratory Birds – Take or Possess

Fish and Game Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird.

Fully Protected Species

Fish and Game Code sections 3511, 4700, 5050, and 5515 prohibits take of animals that are classified as Fully Protected in California.

Significant Natural Areas

Fish and Game Code section 1930 et seq. designates certain areas such as refuges, natural sloughs, riparian areas and vernal pools as significant wildlife habitat.

Native Plant Protection Act of 1977

Fish and Game Code section 1900 et seq. designates state rare, threatened, and endangered plants.

California Code of Regulations

Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

Streambed Alteration Agreement

Fish and Game Code section 1600 et. seq., requires California Department of Fish and Game (CDFG) to review project impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions and other disturbances.

Regional Water Quality Board

To verify that the federal Clean Water Act permitted actions comply with state regulations, the Colorado River Basin Regional Water Quality Control Board issues a Section 401 certification. The Regional Board provides its certification after reviewing the federal Nationwide Permit(s) that is provided by the U. S. Army Corp of Engineers. The use of evaporation ponds would also need to applicant approved by the Colorado River Basin Regional Water Quality Control Board under Section 13050 of Division 7 of the California Water Code (see Soil and Water Resources Section).

LOCAL

Riverside County, California General Plan

Environmental Hazards and Resources

Goal 6 is to recognize and protect rare, threatened and endangered species of wildlife and vegetation as important County resources and a source of natural diversity.

Goal 8 is to recognize and promote the conservation of unique species of wildlife and vegetation found within a locale as an important County resource.

Riverside County, Airport Land Use Plan

The Airport Land Use Plan is being prepared for the Airport Land Use Commission (ALUC) and is intended to protect and promote the safety and welfare of residents in the airport vicinity and users of the airport while ensuring continued operation of the airport. The Public Utilities Code of the State of California, Section 21675 requires the ALUC to formulate a comprehensive land use plan for the area surrounding each public use airport.

City of Blythe, California General Plan

Biological Resources Goals

Goal 1 is to preserve and protect the City and regional biological resources, especially those sensitive, rare, threatened, or endangered species of wildlife and their habitat and to encourage a balance between nature and human development.

Biological Resources Policy

Policy 8 is that the City shall encourage and/or if appropriate, require the use of native trees and vegetation, including palo verde, mesquite, cottonwood, ocotillo, and screwbean, in public areas, private common areas, street dividers, and other landscape areas where Planning Division control can applicant exercised.

Open Space and Conservation Goal

Goal 5 is the preservation of riparian and ruderal habitats as important breeding and foraging habitat for native and migratory birds and animals.

SETTING

REGIONAL

The project components would be located in Riverside County, southeast California. The project would begin approximately seven miles east of the Colorado River and California/Arizona border. Project components would be located in portions of the Mojave and Sonoran deserts in the Palo Verde and Chuckwalla valleys. The Chuckwalla valley is bordered to the north by the Eagle, Palen, and McCoy Mountains. The Santa Rosa, Chuckwalla, and Palo Verde Mountains border the valley to the south, and Joshua Tree National Park is located north and east of the proposed project. The proposed project would traverse sensitive species habitat including habitat for the federal and state listed threatened desert tortoise. Efforts to promote recovery of sensitive species (including desert tortoise) are ongoing in the deserts of southeastern California.

PROJECT, SITE, AND VICINITY DESCRIPTION

The project is proposed as two components. The Buck Substation to Devers-Palo Verde transmission line is the first component proposed. Beginning at the existing Buck Substation, it would consist of upgrading the substation, constructing 6.7 miles of 230 kV transmission line (using new single pole concrete transmission structures), and constructing the Midpoint Substation. This component would end at the proposed Midpoint Substation. The Buck -Devers Palo Verde transmission line would traverse areas of creosote bush scrub, agricultural, and urban habitats. The proposed site for the Midpoint Substation consists of creosote bush scrub habitat. Some narrow unimproved roads appear to have been bladed within the proposed site, and there is evidence of illegal dumping. However, the site is predominantly functioning creosote bush scrub habitat.

The Buck to Julian Hinds transmission line is the second component proposed. It would also begin at the Buck Substation and would consist of upgrading the Buck and Julian Hinds Substations and constructing 67.4 miles of new 230 kV transmission line (using single pole concrete transmission structures) between them. The first 6.7 miles of this component would follow the same 6.7 mile route as the proposed Buck-Devers Palo Verde component. After the initial 6.7 miles, the Buck-Julian Hinds component would be routed west, roughly paralleling Interstate 10 before ending at the Julian Hinds Substation.

The Buck-Julian Hinds component would be constructed parallel and adjacent to the existing Southern California Edison (SCE) 500 kV Devers-Palo Verde I transmission line. Applicant proposes using existing access roads to construct the Buck-Julian Hinds 230kV transmission line. With the exception of the existing SCE transmission line and associated access roads, the Buck-Julian Hinds component would traverse functional, creosote bush scrub, desert wash woodland, and desert dune habitats.

If both components are constructed, two changes would be needed (BLYTHE 2004a). The first change would involve proposed upgrades to the Buck Substation. The second change would be to the 6.7 mile Blythe-Devers Palo Verde transmission line. This would change the 6.7 mile transmission line from a single pole, single circuit line to a single pole, double circuit line.

Constructing and operating the Buck-Julian Hinds component would require upgrades downstream of the Julian Hinds Substation. Upgrades are necessary to prevent conductor sag along the SCE transmission line exiting Julian Hinds Substation. Applicant indicated six new poles/towers would be needed, and SCE would obtain permits for the upgrades. The Commission would not license the upgrade, but staff must analyze the potential impacts to biological resources as reasonably foreseeable effects of the BEPTL.

The six poles would be constructed as upgrades to the existing SCE Julian Hinds to Mirage transmission line within the existing right of way. The six poles would be located between the Julian Hinds Substation and the town of Indio, California (figure 5.17-1, BLYTHE 2004a). Habitat types affected by the upgrade include creosote bush scrub, and desert dry wash woodland. The upgrade would significantly affect desert tortoise. The applicant indicated that impacts to desert tortoise would be mitigated by the purchase of compensation lands (BLYTHE 2004a).

Applicant did not provide detailed information for constructing the upgrades, so staff estimated impact acreage using Western staff's estimates for constructing transmission poles/towers (see **Biological Resources Table 3** below). Pole 1 would be constructed within Joshua Tree National Park. Pole 2 is within critical habitat for the desert tortoise. Desert tortoise sign was observed near poles 1 and 2. Poles 3-6 would be located on private land that also appears to be desert tortoise habitat. The applicant indicated that 0.1 acre of desert tortoise habitat would be affected by poles 1 and 2. This figure does not appear accurate given Western staff's estimates of the area needed to construct transmission poles/towers (see Direct and Indirect Impacts Section below). Staff calculated impacts to habitat for poles 1 and 2 as 0.5 acres and total impacts for six

poles as 3.1 acres. Constructing and operating the upgrades would require consultation with regulatory agencies and the National Park Service prior to construction.

To complete the analysis of biological resources impacts associated with constructing and operating the upgrades to the SCE Julian Hinds to Mirage transmission line, staff will need to know how the upgrades will be constructed and maintained, size of the areas to be disturbed during construction, and a list of species observed during surveys and potentially affected from constructing and operating the upgrades.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Staff's primary concerns with constructing the proposed components are take of sensitive species and the loss of sensitive species habitat. Constructing either one or both of the proposed components would significantly impact sensitive species/habitats. For a list of species considered in this impact assessment see **Biological Resources Tables 1** and **2** below.

Special Status Species Considered for the B-DPV Component
Biological Resources Table 1

Common Name	Scientific Name	Status USFWS/BLM/State/CNPS
Plants		
Abram's spurge	*Chamaesyce abramsiana*	-/-/-/2
Arizona spurge	*Chamaesyce arizonica*	-/-/-/2
Cottonheads	*Nemacaulis denudate var. gracilis*	-/-/-/2
Cove's cassia	*Senna covesii*	-/-/-/2
Crucifixion thorn	*Castela emoryi*	-/-/-/2
Flat-seeded spurge	*Chamaesyce platysperma*	-/-/-/1B
Harwood's milk vetch	*Astragalus insularis var. harwoodii*	-/-/-/2
Birds		
Applicantndire's thrasher	*Toxostoma applicantndirei*	-/S/SC/-
Burrowing owl	*Athene cunicularia*	-/S/SC/-
California horned lark	*Eremophila alpestris actia*	-/-/SC/-
Crissal thrasher	*Toxostoma crissale*	-/-/SC/-
Ferruginous hawk	*Buteo regalis*	-/S/SC/-
Golden eagle	*Aquila chrysaetos*	-/S/SC/-
Le Conte's thrasher	*Toxostoma lecontei*	-/S/SC/-
Loggerhead shrike	*Lanius ludovicianus*	-/-/SC/-
Merlin	*Falco columbarius*	-/-/SC/-
Northern harrier	*Circus cyaneus*	-/-/SC/-
Prairie falcon	*Falco mexicanus*	-/-/SC/-
Short-eared owl	*Asio flammeus*	-/-/SC/-
Mammals		
American badger	*Taxidea taxus*	-/-/SC/-
Big free-tailed bat	*Nyctinomops macrotis*	-/-/SC/-
California leaf-nosed bat	*Macrotus californicus*	SC/-/SC/-
Cave Myotis	*Myotis velifer*	-/S/SC/-
Occult little brown bat	*Myotis lucifugus occultus*	-/-/SC/-
Pale big-eared bat	*Plecotus townsendii pallescens*	-/S/SC/-
Pallid bat	*Antrozous pallidus*	-/S/SC/-
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	-/-/SC/-
Spotted bat	*Euderma maculatum*	-/S/SC/-
Western mastiff bat	*Eumops perotis*	-/S/SC/-
Yuma Myotis	*Myotis yumanensis*	-/S/-/-
Reptiles		
Colorado desert fringe-toed lizard	*Uma notata*	-/S/SC/-
Desert tortoise	*Gopherus agassizii*	T/S/T/-
Mojave fringe-toed lizard	*Uma scoparia*	-/S/SC/-
Northern red-diamond rattlesnake	*Crotalus ruber ruber*	-/-/SC/-
Amphibians		
Couch's spadefoot	*Scaphiopus couchii*	-/S/SC/-

Source: Blythe Energy 2004.
Listing status: Federal: **T** = threatened, **SC** = species of concern, **S** = BLM sensitive. State: **T** = threatened, **SC** = species of concern. CNPS: **1B** = rare or endangered in CA and elsewhere, **2** = Rare/Endangered in CA, more common elsewhere.

Sensitive Species Considered for Buck to Julian HindsTable 2

Common Name	Scientific Name	Status USFWS/BLM/State/CNPS
Plants		
Abram's spurge	*Chamaesyce abramsiana*	-/-/-/2
Arizona spurge	*Chamaesyce arizonica*	-/-/-/2
Ayenia	*Ayenia compacta*	-/-/-/2
California colubrina	*Colubrina californica*	-/-/-/2
Cottonheads	*Nemacaulis denudate var. gracilis*	-/-/-/2
Cove's cassia	*Senna covesii*	-/-/-/2
Crucifixion thorn	*Castela emoryi*	-/-/-/2
Desert sand parsley	*Ammoselinum giganteum*	-/-/-/2
Flat-seeded spurge	*Chamaesyce platysperma*	-/-/-/1B
Harwood's milk vetch	*Astragalus insularis var. harwoodii*	-/-/-/2
Mecca woody aster	*Xylorhiza cognate*	-/-/-/1B
Mesquite neststraw	*Stylocline sonorensis*	-/-/-/1A
Orocopia sage	*Salvia greatae*	-/-/-/1B
Purple stemodia	*Stemodia druantifolia*	-/-/-/2
Spearleaf	*Matelea parvifolia*	-/-/-/2
Birds		
Applicantndire's thrasher	*Toxostoma applicantndirei*	-/S/SC/-
Burrowing owl	*Athene cunicularia*	-/S/SC/-
California horned lark	*Eremophila alpestris actia*	-/-/SC/-
Crissal thrasher	*Toxostoma crissale*	-/-/SC/-
Ferruginous hawk	*Buteo regalis*	-/S/SC/-
Golden eagle	*Aquila chrysaetos*	-/S/SC/-
Le Conte's thrasher	*Toxostoma lecontei*	-/S/SC/-
Loggerhead shrike	*Lanius ludovicianus*	-/-/SC/-
Merlin	*Falco columbarius*	-/-/SC/-
Northern harrier	*Circus cyaneus*	-/-/SC/-
Prairie falcon	*Falco mexicanus*	-/-/SC/-
Short-eared owl	*Asio flammeus*	-/-/SC/-
Mammals		
American badger	*Taxidea taxus*	-/-/SC/-
Big free-tailed bat	*Nyctinomops macrotis*	-/-/SC/-
California leaf-nosed bat	*Macrotus californicus*	SC/-/SC/-
Cave myotis	*Myotis velifer*	-/S/SC/-
Colorado Valley woodrat	*Neotoma albigula venusta*	-/-/SC/-
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	-/S/-/-
Occult little brown bat	*Myotis lucifugus occultus*	-/-/SC/-
Pale big-eared bat	*Plecotus townsendii pallescens*	-/S/SC/-
Pallid bat	*Antrozous pallidus*	-/S/SC/-
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	-/-/SC/-
Spotted bat	*Euderma maculatum*	-/S/SC/-
Western mastiff bat	*Eumops perotis*	-/S/SC/-
Yuma myotis	*Myotis yumanensis*	-/S/-/-
Reptiles		
Colorado Desert fringe-toed lizard	*Uma notata*	-/S/SC/-
Desert tortoise	*Gopherus agassizii*	T/-/T/-
Mojave fringe-toed lizard	*Uma scoparia*	-/S/SC/-
Northern red-diamond rattlesnake	*Crotalus rur rur*	-/-/SC/-
Amphibians		
Couch's spadefoot	*Scaphiopus couchii*	-/S/SC/-

Source: Blythe Energy 2004.

Listing status: Federal: **T** = threatened, **SC** = species of concern, **S** = BLM sensitive. State: **T** = threatened, **SC** = species of concern. CNPS: **1A** = presumed extinct in CA, **1B** = rare or endangered in CA and elsewhere, **2** = Rare/Endangered in CA, more common elsewhere.

Staff is concerned about impacts to desert tortoise, burrowing owl, Harwood's milkvetch, Cove's cassia, Crucifixion, thorn, Mesquite nest-straw, Orocopia sage, and Mojave fringe-toed lizard.

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Staff reviewed California Environmental Quality Act (CEQA) guidelines, and National Environmental Policy Act (NEPA), the Application for Certification (AFC), Commission Decision and USFWS Biological Opinion for the BEP I project as well as other desert projects with similar impacts. Staff consulted with Western, USFWS, and CDFG staff for assistance in determining potential significance of project impacts.

Staff used definitions from CEQA guidelines and NEPA (40 CFR 1508.27) while analyzing potential impacts. CEQA guidelines define direct impacts as directly attributable to the project and occurring at the same time and place. Indirect impacts are caused by the project, but can occur later in time or farther removed in distance, but are still reasonably foreseeable and related to the project. Cumulative impacts are defined as those occurring when effects of the project are added to other closely-related past, present and probable future projects.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Direct Impacts B-DPV Component

Staff's main concerns with the Blythe-Devers Palo Verde component are impacts to desert tortoise, and Harwood's milkvetch caused by constructing the proposed midpoint substation. Habitat suitable to support burrowing owl, Abram's sage, Arizona sage, and Cove's cassia would be affected by constructing the Blythe-Devers Palo Verde transmission line.

Biological Resources Table 3 summarizes acreage impacts associated with constructing the Blythe-Devers Palo Verde component. Western staff indicated that initial estimates of acreage impacts for other transmission line projects were underestimated (WAPA 2004b). This past experience with constructing transmission lines led Western staff to revise impact areas for pole construction and conductor pull, tension, and splice sites.

Western staff concluded that constructing the transmission structures will require an area 150 feet by 150 feet and areas used for pulling, splicing, and tensioning conductors will require minimum areas of 100 feet by 200 feet. These estimates include all disturbances around each pole site (M. Wieringa pers. comm.). Because it can take desert plant communities a long time to recover from disturbances (15 years or more) construction impacts in the desert are considered permanent.

Staff calculated impacts using the information provided by Western. See **Biological Resources Table 3** below.

Acreage Impacts Buck to Devers-Palo Verde
Biological Resources Table 3

Feature	Qty	Area** (Applicant)	Area (Western)	Impact** (Acres)	Impact*** (Acres)
Crossing Structures	2	100'x100'		0.5	0.5
Pole Pad Construction	42	50'x50'	**150'x150'**	2.4	**21.7**
Pull Site*	8	*50'x140'* *110'x200'*	**100'x200'**	2.7	**3.7**
Spur Roads	42	25'x25'		0.6	0.6
Radius, Access to Spur	42	4315 sq ft		4.16	
Midpoint Substation	1	41.3 acres		41.3	41.3
Total Affected Acreage				51.7	**67.8**

Source: Blythe Energy and Western Power Administration.

*Western estimated that pull, splice, and tension sites would require same area.
** Impact estimates provided by Applicant.
*** Staff impact calculations based on area estimates provided by Western.
Bolded numbers results of Western impact acreage estimates.
Italicized numbers from applicant for conductor pull and splice sites, respectively.

Desert tortoise (federal and state threatened)

Applicant indicated that constructing the Blythe-Devers Palo Verde component (including the proposed Midpoint substation) would not require mitigation for desert tortoise because it is outside of designated habitat conservation areas, critical habitat and historic range of the desert tortoise. Surveys conducted by applicant in 2004 indicate that desert tortoise sign was observed between mileposts 1-7, and 7-12 (WAPA 2004d).

Habitat between mileposts 1 and 3 is agricultural land. Staff agrees with applicant that this area is not desert tortoise habitat. Areas between mileposts 3.1and 6 (approximate) are mixed creosote bush shrub habitat and Sonoran vegetated dune. Staff is concerned with impacts to Mojave fringe-toed lizard (MFTL) in this area.

The proposed Midpoint Substation site is creosote bush scrub. This habitat is not designated critical habitat or in a BLM management areas. It is still creosote bush scrub habitat capable of supporting desert tortoise and will require mitigation (including habitat compensation) to reduce impacts to levels less than significant. Projects proposed in areas not designated as critical habitat or BLM management areas are not exempt from mitigating impacts to desert tortoise or other sensitive species. Constructing the Midpoint Substation would cause significant impacts to desert tortoise through the loss of 41.3 acres of creosote bush scrub habitat that is suitable to support desert tortoise. However, due to the lower quality of the habitat, staff believes compensation at a lower ratio (1:1) is appropriate.

Staff, USFWS, and CDFG were concerned that construction of the original Blythe Energy Project (BEP I) power plant would result in take of the desert tortoise and

Harwood's milkvetch (USFWS 2001, 2002). Habitat compensation and other mitigation measures were required by the Energy Commission, USFWS, and CDFG.

USFWS staff indicated that this project will be permitted through re-initiation of the formal section 7 consultation for the original BEP I power plant. USFWS and CDFG staff indicated that the proposed site for the Midpoint substation (and some adjacent areas) are considered desert tortoise habitat and permitting of this project must be consistent with the BEP I approval (99-AFC-8) (S. Marquez, K. Nicol pers comm.).

Applicant proposes no mitigation for impacts to desert tortoise.

Staff proposes that applicant compensate for impacts to 41.3 acres of desert tortoise habitat at a 1:1 ratio. Staff consulted with the Desert Tortoise Preserve Committee to determine the cost for acquisition, administration and long-term management of high quality desert tortoise habitat. That cost is $1200 dollars/acre (J. Lee pers. comm.).

Staff proposes that in addition to habitat compensation for constructing the Midpoint Substation, applicant also implement tortoise protection measures such as were implemented for the BEP I power plant and proposed for upgrading the Julian Hinds Substation. Staff proposes **Biological Resources Conditions of Certification BIO-1, BIO-2** through **BIO-5, BIO-9, BIO-14, and BIO-15** to reduce impacts to levels less than significant.

Harwood's milkvetch Abram's spurge, Arizona spurge, Cove's cassia (CNPS list 2)

The applicant calculated direct disturbance to Harwood's milkvetch habitat based on plants observed at the proposed Midpoint Substation site and between mileposts 3.2 and 16 (BLYTHE 2004e). Within the Blythe-Devers Palo Verde component milkvetch was observed from milepost 3.2 to the proposed Midpoint Substation.

Constructing the proposed Midpoint Substation would result in the loss of 41.3 acres of Harwood's milkvetch habitat. Applicant calculated impacts between mileposts 3.2 and 16 as 26.4 acres of habitat. Areas beyond the Midpoint Substation (milepost 6.7) are within the Buck-Julian Hinds component of the project and are discussed below.

Although not observed during surveys, suitable habitat to support these species exists within the project component. Constructing the Blythe-Devers Palo Verde component would significantly affect habitat for these species. See **Biological Resources Table 4** below.

Biological Resources Table 4
Impacts to Sensitive Plant Species, Buck-Devers Palo Verde

Species	Milepost	Acreage
Abram's spurge	0.5-7.0	23.2
Arizona spurge	0.5-7.0	23.2
Cove's cassia	3.5-7.0	14.5

For impacts to Harwood's milkvetch, applicant proposes providing compensatory funding in the amount of $22,270 to the Rancho Santa Ana Botanical Garden for collection and preservation of seed.

Applicant indicated that impacts to Abram's spurge, Arizona spurge, and Cove's cassia would be mitigated through habitat compensated for desert tortoise

Staff proposes that instead of donating money for collecting and preserving Harwood's milkvetch seed, high quality habitat purchased for desert tortoise habitat compensation, also be suitable to support Harwood's milkvetch, Abram's spurge, Arizona spurge, and Cove's cassia. Staff believes that preserving habitat suitable for Harwood's milkvetch is more important than attempting to collect and preserve seeds, as habitat loss and associated fragmentation is the greatest threat to Harwood's milkvetch and other sensitive plants. Staff proposes **Biological Resources Conditions of Certification BIO-14, and BIO-15** to reduce impacts to Harwood's milkvetch, Abram's spurge, Arizona spurge, and Cove's cassia to levels less than significant.

The location for desert tortoise habitat compensation has not been determined so it is not certain that habitat suitable for desert tortoise would also be suitable for other species. It appears that only 87 percent of Cove's cassia habitat and 56 percent of Abram's and Arizona spurge affected by constructing both components of the project could be compensated through desert tortoise replacement habitat (BLYTHE 2004j). Staff needs more information from applicant on the amount of Abram's and Arizona spurge, and Cove's cassia habitat affected by the Blythe-Devers Palo Verde component. Staff proposes **Biological Resources Conditions of Certification BIO-14 and BIO-15** to reduce impacts to levels less than significant.

Mojave fringe-toed lizard (BLM sensitive, state species of concern)

MFTL were observed during surveys conducted in 2004 between mileposts 10 and 17. Although this area is within the B-JH component of the project, suitable habitat to support the Mojave fringe-toed lizard exists in the B-DPV component between mileposts 3 and 5 (BLYTHE 2004e). Constructing the Blythe-Devers Palo Verde component would significantly affect approximately 6.7 acres of MFTL habitat.

For impacts to MFTL, applicant proposes a 15 MPH speed limit, limitation of vehicle traffic to designated access and spur roads, biological monitoring, and the following mitigation measures (DR 2004):

- Qualified biologists will conduct preconstruction surveys to identify all potential habitat along the construction area. Within 7 days before construction begins, biologists will identify habitat areas subject to direct construction –related ground disturbance;
- Biologists will conduct a final clearance survey prior to construction activities to excavate potential burrows and relocate the lizards to nearby suitable habitat. The management strategy guidelines for relocation of described in Working Group of Flat-Tailed Horned Lizard (FTHL) Interagency Committee (Foreman 1997) shall be utilized for MFTL;

- Construction areas will be periodically examined (at least hourly when surface temperatures exceed 30 degree Celsius) for the presence of MFTL. In addition, all trenches, holes, or deep excavations will be examined for the presence of these lizards prior to filling. If lizards are found they will be relocated to nearby suitable habitat;
- A field contact representative will have the authority to ensure compliance with protective measures for these lizards, and will initiate a worker education program; and
- A biological monitor shall be present in each area of active construction within MFTL habitat throughout the work day from initial clearing through habitat restoration. The biological monitor shall have sufficient education and field experience or training with these lizards to understand their biology and behavior. The biological monitor shall have the authority and responsibility to halt activities that are in violation of these terms and conditions: 1) Examine construction area periodically (at least hourly when surface temperatures exceed thirty degrees Celsius) for the presence of MFTL. In addition, all hazardous sites (open pipes, trenches, holes, or deep excavations) shall be inspected for the presence of these lizards prior to backfilling. 2) Work with the construction supervisor to take steps, as necessary, to avoid disturbance to MFTL and their habitat. If avoiding disturbance is not possible or if a lizard is found trapped in an excavation, the affected lizard will be captured by hand and relocated. 3) Relocated MFTL shall be placed in the shade of a large shrub a short distance from the construction ROW and in the direction of undisturbed habitat. If the surface temperature in the sun is less than 30 degrees Celsius, or greater than 50 degrees Celsius, the biological monitor authorized to handle the lizard will hold it for later release. 4) Initially captured MFTL shall be held in a cloth bag, cooler, or other appropriate clean dry container form which the lizard cannot escape. Lizard shall be held at temperatures between 25 and 35 degrees Celsius and shall not be exposed to direct sunlight. Release shall occur as soon as possible after capture and during daylight hours when surface temperatures range from 32 to 40 degrees Celsius.

Staff agrees that the measures listed above would help reduce impacts to MFTL, but also proposes that habitat replacement to compensate for desert tortoise and sensitive plants listed above also be suitable for MFTL. Staff proposes **Biological Resources Conditions of Certification BIO-14 and BIO-15** to reduce impacts to levels less than significant.

Burrowing Owl (BLM sensitive, state species of concern)

Burrowing owls are known to occupy the area and could be affected by construction activities. No owls were observed during surveys but it is possible that owls could utilize any of the habitats within the Blythe-Devers Palo Verde component.

Applicant proposed burrowing owl clearance surveys within the first 3.5 miles of transmission line and burrowing owls would be sought along with desert tortoises during pre-construction surveys along the remainder of the transmission line (BLYTH 2004j).

Staff agrees with applicant's proposal to include burrowing owl as a target species during pre-construction surveys. If owls are observed during surveys, consultation with Commission and CDFG staff will be required to determine mitigation required to reduce impacts to levels less than significant. Staff proposes **Biological Resources Condition of Certification BIO-1.**

Indirect Impacts Blythe-Devers Palo Verde Component

Construction related impacts were assessed as long-term, permanent impacts. Natural vegetation in desert communities is slow to recover from construction related disturbances. In addition to long-term permanent impacts, disturbances create edge habitat which fragments and degrades habitat. Edge habitat can allow the establishment of non-native species, resulting in loss of biodiversity as non-native plants and animals disperse into interior habitats. Construction and operation of the Buck-Devers Palo Verde component would cause significant indirect impacts to native desert plant communities. Applicant proposes surveying for invasive and noxious weeds and implementing appropriate methods for control. Staff proposes **Biological Resources Condition of Certification BIO-10** to reduce impacts to levels less than significant**.**

Direct Impacts Buck-Julian Hinds Component

The Buck-Julian Hinds component would directly and significantly affect desert tortoise, Mojave fringe-toed lizard, Harwood's milkvetch, Abram's spurge, Arizona spurge, Cove's cassia, Crucifixion thorn, Mesquite nest straw and Orocopia sage. Direct impacts to burrowing owl are possible. If only this component is constructed, it would begin at the Buck Substation and end at the Julian Hinds Substation approximately 67.4 miles west. This component would initially traverse the same route as the B-DPV component (6.7 miles) before being routed west adjacent to SCE's existing 500 kV transmission line. The discussion of this component would not include an impact assessment for constructing the Midpoint Substation since it was considered in the Buck-Devers Palo Verde analysis.

This component would traverse critical habitat (USFWS) and BLM management areas (Categories I and III) delineated to aid the recovery of desert tortoise populations. It would also traverse areas of desert tortoise habitat not designated as critical habitat or within BLM management areas. Areas managed by BLM are within the Northern and Eastern Colorado Desert Management Plan (NECO) area. The NECO plan outlines the multi-use policy of the agency, created Desert Wildlife Management Areas (DWMA) and created habitat categories within DWMA's to assist in the recovery of desert tortoise populations.

NECO delineated land within a DWMA as Category I and remaining BLM lands in tortoise habitat as Category III. The goals for Category I habitat is to maintain stable, viable populations and increase where possible. Category III goals are to limit declines to the extent possible using mitigation measures. NECO also outlined specific tortoise mitigation measures for impacts within DWMA's. Habitat compensation for impacts within the DWMA are compensated at a ratio of 5:1, impacts within category III are 1:1.

The Buck-Julian Hinds transmission line would traverse approximately 41.2 miles of the Chuckwalla DWMA and approximately 6.3 miles outside. Staff used disturbance area

estimates provided by Western to estimate impacts associated with this component. **See Biological Resources Table 4** below.

Acreage Impacts Buck to Julian Hinds
Biological Resources Table 5

Feature	Qty	Area* (Applicant)	Area** (Western)	Impact * (Acres)	Impact** (Acres)
Crossing Structure	12	100'x100'		2.8	2.8
Pole Pad Construction	391	50'x50'	**150'x150'**	22.5	**202.3**
Pull Site/Splice Site	45	50'x140'/95'200'	**100'x200'**	5.9/10.1	**20.7**
Spur Road	391	25'x25'		5.6	
Crane Pad	374	7'x60' and 15'x140'		17.1	
Access Road		14'		31.8	
Radius, Access to Spur	378	4315 sq ft		37.5	
Julian Hinds Expansion	1	75'x240'		0.4 (no impact)	0.4 (no impact)
Total Acreage				133.3	**225.8**

Source: Blythe Energy (2004), Western (2004).
Bolded numbers are Western estimates of construction disturbances.
* Blythe Energy calculations
** Based on numbers provided by Western

Staff consulted with Western staff (M. Wieringa pers. comm.) and concluded that area impact estimates for pole construction and conductor pull, splice and tension sites provided by Western were more realistic than estimates provided by applicant. Staff used Western staff estimates to revise acreage impacts for pole construction sites, and sites proposed for pulling, splicing and tensioning conductors. Staff used Figure 10 (Tetra Tech 2004a) and Figure DR-14-1 (BLYTHE 2004e) to calculate the number and locations of transmission poles and conductor pull, tension and splice sites.

Julian Hinds Substation expansion would take place on an area already disturbed by the original construction of the substation. No impacts are expected from construction activities on the substation site. The only direct impacts to desert tortoise, Harwood's milkvetch, and MFTL on the Buck-Julian Hinds component would be caused by constructing the transmission line.

Desert Tortoise (federal and state threatened)

The proposed transmission line is 67.4 miles long. 60.7 miles of the transmission line would be constructed within desert tortoise habitat. Staff estimated constructing transmission poles would directly affect 28.7 acres (54 poles) of Category III desert tortoise habitat and174.4 acres (337 poles) of Category I habitat. Conductor pull and tension sites would affect 4.6 acres (10 pull/splice/tension sites) in Category III habitat and 16.1 acres (35 pull/splice/tension sites) in Category I habitat. Applicant has not indicated proposed locations for crossing structures.

Applicant proposes to compensate for impacts to desert tortoise through habitat compensation as outlined in **Biological Resources Table 7** below.

Compensation Payment Calculation for Desert Tortoise Habitat
Biological Resources Table 7

Habitat Level	Compensation Acres	Compensation paid to BLM ($600/acre)	Compensation Paid to CDFG ($295/acre)
Within DWMA (5:1)	597.5	$ 358,500	$ 176,263
Category III (1:1)	35.2	$ 21,108	$ 10,378
Total	**632.7**	$ 379,608	$ 186,641

Source Blythe Energy 2004.

In addition, applicant proposes the following :

1. Unless otherwise directed by the Service, prior to the start of construction on the transmission line components, Blythe Energy will conduct an additional full presence/absence protocol survey in 2005 for desert tortoises for all disturbance areas.
2. A pre-construction survey of each project component located within areas identified during previous surveys as designated Critical Habitat or as listed species habitat will be conducted by a qualified biologist no more than 7 days prior to the onset of activities.
3. Blythe Energy will submit the names, permit numbers, and relevant tortoise experience resumes of all individuals who might need to handle desert tortoises to the Service for approval at least 15 days prior to initiation of clearance surveys. Proposed transmission line activities will not begin until an authorized biologist has been approved. While other biologists may be employed as monitors, only those approved by the Service will be permitted to handle tortoises.
4. The Service will provide the names of all proposed, authorized biologists to BLM for their records. All persons authorized by the Service to handle desert tortoise will follow the guidelines established in the *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council 1994, revised 1999);
5. Qualified biologists will monitor all work in designated Critical Habitat or where prior Blythe Energy surveys have documented the occurrence of one or more listed species. In conjunction with Blythe Energy's Environmental Inspector, the Designated Biologist will have the authority to halt all non-emergency actions that might result in harm to a listed species, and will assist in the overall implementation of protection measures for listed species during project operations (*see also Reasonable and Prudent Measure 1, BO)*.
6. Employees and contractors will look under vehicles and equipment for the presence of protected species prior to movement. No equipment will be moved until the animal has left voluntarily or it is removed by a biologist authorized to do so. Anytime a vehicle is parked, the ground around and under the vehicle will be inspected for desert tortoises before the vehicle is moved.

7. If a desert tortoise is observed, it will be left to move on its own. If this does not occur within 15 minutes, an authorized biologist will remove and relocate the tortoise.
8. Desert tortoises that are found aboveground and need to be moved from harm's way will be placed by the authorized biologist in the shade of a shrub. All desert tortoises removed from burrows will be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.
9. If an existing burrow is unavailable, the authorized biologist will construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods will applicant monitored for at least two days after placement in the new burrows to ensure their safety. The authorized biologist will be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.
10. Firearms and pets will be prohibited from work sites.
11. Transmission line construction activities between dusk and dawn will be limited to emergencies only (i.e. issues involving human health and safety).
12. Open auger holes or other excavations that could entrap wildlife will be inspected by an authorized biologist a minimum of three times per day, and immediately prior to backfilling. Excavations that remain open overnight will be covered or ramped to prevent entrapment of wildlife.
13. If a listed species is located during construction, and a contingency for avoidance, removal, or transplant has not been approved by the Service or appropriate agency, Blythe Energy will not proceed with project activity until specific consultation with Western is completed.
14. All encounters with listed species will be reported to the Designated Biologist, who will record the following information:
    - Species name;
    - Location (GPS, narrative and maps) and dates of observations;
    - General condition and health, including injuries and state of healing;
    - Diagnostic markings, including identification nums or markers; and
    - Locations moved from and to.

This information will be provided to Western quarterly.

1. Employees and contractors will be informed during one or more training sessions that they are not authorized to handle or otherwise move listed species either commuting to work sites or at a work site.
2. Upon locating a dead or injured protected species, Blythe Energy will notify Western, the Service and CDFG within 24 hours. Written notification must be made within 5 days of the date and time of the finding or incident (if known) and must include: Location of the carcass, a photograph, cause of death (if known), and other pertinent information.

3. Should any sensitive species be found during pre-construction surveys and work must be done in identified areas during sensitive periods, the Operator shall develop and implement a plan for the protection of these species. This plan shall applicant approved by Western and the Service prior to commencing work in these areas. The results of any surveys and any protective measures instituted as a part of the protection and monitoring plan shall be approved by Western prior to implementation. The Operator shall be responsible for reporting all observations of threatened/endangered species or of species of special concern to the CDFG Natural Diversity Data Base within 10 days of sighting.
4. Spoil sites shall not be utilized without prior approval by Western.
5. A clearance survey for the desert tortoise shall be conducted by a qualified biologist within 24 hours prior to ground disturbance.
6. Burrows outside of the limits of construction will be flagged so that the biological monitor will be able to more easily locate them during construction.
7. All desert tortoise burrows or pallets in the construction area will be excavated by a qualified biologist. All desert tortoise handling and burrow excavation will be in accordance with handling procedures developed by the Service and conducted by qualified desert tortoise biologists.
8. Only approved access roads will be used. Only approved areas will be used for temporary storage areas, laydown sites, and any other surface-disturbing activities. Any routes of travel that require construction or modification, or any additional work areas, will have a qualified biologist(s) survey the area for tortoises prior to modification or construction of route or construction or use of a new work area.
9. All excavations will be inspected for tortoises three times daily and prior to backfilling.
10. All construction related activities in desert tortoise habitat will be conducted from dawn until dusk.

Staff has reviewed the above desert tortoise protection measures proposed by applicant. Staff agrees with some proposed measures and will include them in **Biological Resources Condition of Certification BIO-14.** However, the list of mitigation measures is not complete. USFWS, CDFG, Western, and BLM have yet to review proposed mitigation measures and additional measures are likely.

Staff reviewed desert tortoise habitat compensation figures proposed by applicant in the BEPTL Petition (BLYTHE 2004a) and Biological Assessment (WAPA 2004d). Results of impact acreage calculations for areas within Category I and Category III tortoise habitat showed different acreage amounts for the same component. Information submitted in the BEPTL Petition indicates 79.7 acres affected within DWMA and 23.1 in Category III habitat. Information in the BA (see Biological Resources Table 7 above) indicates 119.5 within DWMA and 35.3 within Category III habitat. Additionally, new construction disturbance estimates provided by Western staff will need to be compensated by applicant.

Using Western's figures, staff calculated impacts within Category I desert tortoise habitat as 190.5 acres and impacts to category III habitat as 35.3 acres. See **Biological Resources Table 8** below for impact and compensation summary.

Biological Resources Table 8 Staff Desert Tortoise Compensation

Category	Affected Acres	Compensation Acres	Cost/acre and management
Category I (5:1)	190.5 *	952.5	$1200/acre, $1200 x 952.5 = $1,143,000
Category III (1:1)	35.3*	35.3	$1200/acre, $1200 x 35.3 = $42,360
No Category (1:1)	41.3**	41.3	$1200/acre, $1200 x 41.3 = $49,560
Total	267.1	1029.1	$1200/acre, $1200 x 267.1 = $1,234,920

*Buck-Julian Hinds component ** Buck-Devers Palo Verde component

Burrowing owl (BLM sensitive, state species of concern)

Burrowing owls are known from the proposed project area. It is possible that owls could utilize habitat throughout the Buck-Julian Hinds component and could be directly affected by project construction and operation.

Applicant proposed including surveys for burrowing owl during pre-construction surveys. Staff agrees with this measure and also proposes consultation with staff and CDFG staff to determine mitigation required if burrowing owls are observed. Staff proposes Biological Resources Condition of Certification BIO-1 to reduce impacts to levels less than significant.

Harwood's milkvetch (CNPS list 2) and Mojave fringe-toed lizard (BLM sensitive, state species of concern)

Harwood's milkvetch was observed (BLYTHE 2004a) between mileposts 7 and 16. Mojave fringe-toed lizard was observed between mileposts 10 and 17. Constructing this component would directly and significantly affect approximately 5.7 acres of Harwood's milkvetch habitat and approximately 18.1 acres of MFTL habitat.

Applicant proposed the mitigation measures for impacts to Harwood's milkvetch and MFTL discussed in the B-DPV section above.

Because habitat loss and fragmentation are the greatest threats to sensitive species, staff believes that preserving large, contiguous areas of habitat would provide the most benefit to Harwood's milkvetch and MFTL. Staff proposes that habitat compensation for desert tortoise also be suitable for Harwood's millkvetch and MFTL. Staff proposed **Biological Resources Conditions of Certification BIO-1, BIO-5, BIO-14 and BIO-15** to reduce impacts to Harwood's milkvetch and Mojave fringe-toed lizard to levels less than significant.

Abram's spurge (CNPS list 2), Arizona spurge (CNPS list 2), Cove's cassia (CNPS list 2), Crucifixion thorn (CNPS list 2), Mesquite nest-straw (CNPS list 1A), Orocopia sage (CNPS list 1B)

None of these species were observed during project surveys. Suitable habitat exists to support these species, and constructing and operating the project would directly affect habitat suitable to support them see **Biological Resources Table 6** below.

Biological Resources
Table 6, Sensitive Plant Impacts

Species	Milepost	Acreage
Abram's spurge	7.0-22.3	10.3
Arizona spurge	7.0-22.3	10.3
Cove's cassia	7.0-67.4	153.8
Crucifixion thorn	21.0-67.4	113.9
Mesquite nest straw	63.5-64.5	9.3*
Orocopia sage	22.0-67.4	115.5

Applicant indicated that 56 percent of Abram's spurge and Arizona spurge, 78 percent of Cove's cassia and 100 percent of Crucifixion thorn, Mesquite nest-straw, and Orocopia sage habitats affected by the project would be mitigated through desert tortoise habitat compensation.

These figures indicate that 44 percent of the Abram's and Arizona spurge habitat impacts and 22 percent of Cove's cassia habitat impacts would not be mitigated to levels less than significant. Stating that impacts to these species would be mitigated (in part or completely) assumes that any habitat compensation for BEPTL desert tortoise impacts would mitigate impacts to the species listed above. The location for desert tortoise habitat compensation has not been determined. Staff proposes **Biological Resources Conditions of Ceritfication BIO-14 and BIO-15** to reduce impacts to levels less than significant.

Indirect Impacts B-JH Component

Indirect impacts caused by the B-JH component would be identical to indirect impacts caused by the B-DPV component. Applicant proposes a noxious/invasive weed management program. Staff proposes **Biological Resources Condition of Certification BIO-10** to reduce exotic species impacts to levels less than significant.

Both Components

Constructing both components would consist of the B-JH component with the addition of the Midpoint Substation. Staff analysis of the B-JH component did not include the initial 6.7 miles g at the Buck Substation or constructing the Midpoint Substation. The proposed Midpoint Substation site is desert tortoise and Harwood's milkvetch habitat. There is some habitat suitable to support MFTL between the Buck Substation and milepost 6.7. See **Biological Resources Table 9 for combined component impacts.**

Habitat Impacts (Acres) Both Components
Biological Resources Table 9

Desert Tortoise Habitat	B-DPV	B-JH	Both	Ratio/Total
No category (Midpoint Substation)	41.3		41.3	1:1 = 41.3
Category I		190.5	190.5	5:1 = 952.5
Category III		35.3	35.3	1:1 = 35.3
Total			267.1	1029.1

For direct habitat losses staff proposes **Biological Resources Condition of Certification BIO-15** to reduce impacts to levels less than significant.

OPERATION IMPACTS AND MITIGATION

Potentially significant impacts associated with operating the projects would be associated with maintenance of the transmission lines. Vehicles traveling on access roads could be a source of injury or mortality to animals on the road. However the access road is not paved and the varying terrain it crosses prohibits excessive vehicle speed. Educating drivers on species and protection measures would likely mitigate potential impacts. Staff proposes including transmission line maintenance personnel in Worker Environmental Awareness Training. Staff proposes **Biological Resources Condition of Certification BIO-5** to reduce impacts to levels less than significant.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission line poles 9 through 17. This alternative route would follow the existing D-VP power line path through an existing ROW in an orange grove. The following is staff's evaluation of the City of Blythe's proposed alternative route.

ALTERNATIVE ROUTE EVALUATION

The proposed realignment of transmission line power poles near the Blythe Municipal Airport would affect two acres of citrus orchard. This area has the potential to support burrowing owls, and applicant has proposed pre-construction and clearance surveys prior to construction. Staff agrees with these measures and concludes that construction of the transmission line within this area would not have a significant impact on biological resources.

CUMULATIVE IMPACTS AND MITIGATION

Habitat loss, fragmentation and degradation are a regional concern as are impacts to sensitive species. The proposed project would be constructed within a BLM utility corridor adjacent to an existing transmission line (SCE Devers to Palo Verde 1). Two additional transmission lines (SCE Devers to Palo Verde 2, Desert Southwest) are proposed adjacent to the proposed transmission line. All the lines have, or would impact species including desert tortoise, Harwood's milkvetch, and Mojave fringe-toed lizard.

Each project has or would contribute cumulatively to the regional loss, fragmentation, and degradation of sensitive species habitat. Staff considers habitat and sensitive species impacts caused by the B-DPV or B-JH component, or both components together to be cumulatively significant when considered together with the BEP I project and existing SCE Devers-Palo Verde transmission line.

Individually or collectively the project components would cause significant cumulative impacts to sensitive species and habitats. Staff believes that with the implementation of the mitigation measures proposed for direct and indirect impacts, cumulative impacts would be mitigated to levels less than significant. Staff proposes **Biological Resources Conditions of Certification BIO-1, 10, 14 and 15** to assist in reducing cumulative impacts to levels less than significant.

COMPLIANCE WITH LORS

Staff has been working with USFWS, CDFG, and Western staff to ensure that the proposed project will comply with all applicable laws, ordinances, regulations, and standards (LORS). Staff anticipates that the proposed project would comply with all applicable LORS.

CONCLUSIONS

Constructing the proposed project components individually or together would result in significant impacts to desert tortoise, Harwood's milkvetch, and Mojave fringe-toed lizard. Staff has proposed Conditions of Certification that would mitigate impacts to levels less than significant.

The Biological Assessment is not complete, and Western has not requested formal consultation with the USFWS nor has BLM commented on the Biological Assessment. It is likely that the USFWS, and CDFG will request additional information from the applicant and could require mitigation measures beyond what staff has proposed. Staff is working with USFWS, CDFG, and Western staff to address all potential impacts and mitigate them to levels less than significant.

Staff and Applicant disagree over the suitability of the proposed Midpoint Substation to support desert tortoise. USFWS and CDFG staff supports staff's assessment of the site as desert tortoise habitat. Staff used revised figures provided by Western staff to recalculate impact acreage. Total sensitive species acreage impacted is greater than the total provided by applicant.

Staff consulted with Desert Tortoise Preserve Committee staff to obtain a reasonable cost per acre of habitat for desert tortoise, and other species affected by the project. The cost for purchase, administration, and long term-management of high quality habitat would be $1200 per acre.

Applicant addressed impacts to biological resources caused by constructing the upgrades, but did not include a complete description of all activities associated with constructing the six poles needed for the upgrade. Staff used the information provided

to analyze impacts caused by proposed upgrades to the SCE Julian Hinds to Mirage Substation transmission line.

Western staff's estimates of the size of construction areas needed for the BEPTL transmission lines is greater than the applicants estimates; therefore, revised estimates and locations of impacts to sensitive species/ habitats (delineated by individual component) are needed.

PROPOSED CONDITIONS OF CERTIFICATION

In addition to the following Conditions of Certification, additional conditions may result from the USFWS Biological Opinion and incidental take permit, CDFG's Concurrence Determination and Streambed Alteration permit. The USFWS Biological Opinion and Incidental Take permit will provide mitigation requirements that must be followed prior to project construction, and during construction and operation. Once the CDFG receives a copy of the Biological Opinion and Incidental Take Permit, the CDFG will complete its review and provide a Concurrence Determination. These actions must be completed before construction can begin.

The following Biological Resources Conditions of Certification are proposed by Energy Commission staff.

DESERT TORTOISE AND SENSITIVE SPECIES PROTECTION

BIO-1 The project owner will implement the following mitigation measures identified in Section 7.12.2.4 found on page 7.12-24 of the BEP Application for Certification (BEP 1999a), Attachment 1 of the Biological Assessment Blythe Energy Project (BEP 1999a, AFC Appendix 7.12), project description clarification (BEP 2000s), and response to comments (BEP 2000l and BEP 2000w,) and response to data requests (BLYTHE 2004e). The project owner's mitigation measures shall be incorporated into the final BRMIMP (see Condition of Certification BIO-14 below) unless the mitigation measures conflict with mitigation required by the USFWS or CDFG as contained within their respective biological opinion or consistency determination.

Verification: For the proposed 76-acre power plant site, and BEPTL components, the project owner shall ensure the following:

If burrowing owls are found on the site, along the natural gas pipelines, or BEPTL components, off site compensation for losses will be required, unless the sighting was on actively cultivated lands.

Survey BEPTL components for Mojave fringe-toed lizard and implement protection measures outlined in Flat-Tailed Horned Lizard Interagency Coordinating Committee Rangewide Strategy Plan.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction, operation, and maintenance are informed about the sensitive biological resources associated with the project area.

Verification: Thirty (30) days prior to the start of ground-disturbance activities or the directional drilling at the Colorado River or a lesser period as mutually agreed, and also thirty days (30) prior to the start of ground-disturbance activities associated with the BEPTL, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. During project operation and maintenance signed statements for active project operational personnel shall be kept on file for the duration of their employment and for six (6) months after their termination.

WEED REDUCTION PROGRAM

BIO-10 A comprehensive exotic control program for California Department of Agriculture List A, List B, and Red Alert weeds, shall be implemented at the 76-acre power plant site and BEPTL components. This program should be implemented until such time that the adjacent land use on the north and west sides is no longer a natural community or agriculture, or until the plant is permanently closed. At the Colorado River, this exotic control program should be implemented as feasible until the Caltrans ROW is replanted and established. The natural vegetation adjacent to the BEP site shall be monitored to determine if it has been modified or degraded, if so, these changes to the adjacent sites should be documented by the project's Designated Biologist in a report which includes photos of the adjacent land uses.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONIORITING PROGRAM

BIO-14 The project owner shall submit to the CPM for review and approval, prior to any project related ground disturbance activities, including BEPTL, a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and shall implement the measures identified in the plan.

The final BRMIMP shall identify:

1. All biological resources mitigation, monitoring, and compliance conditions included in the Energy Commission's Final and amended Decisions;

2. All sensitive biological resources to applicant impacted, avoided, or mitigated by project construction, operation and closure;
3. All mitigation measures identified in the USFWS Section 7 Biological Opinion and amended Biological Opinions;
4. All mitigation measures identified in the CDFG Section 2081 Incidental Take Permit, or amended Incidental Take Permit;
5. All mitigation measures identified in the USACE Nationwide Permit, or amended USACE Nationwide Permit;
6. Terms and conditions contained in the project's federal 404 and state 401 certification or amended 404 and state 401 certifications;
7. Required habitat compensation funds and strategy, including provisions for acquisition, enhancement and management, for any permanent or cumulative loss of sensitive biological resources;
8. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
9. Performance standards to applicant used to help decide if/when proposed mitigation is or is not successful;
10. All performance standards and remedial measures to applicant implemented if performance standards are not met;
11. A discussion of biological resource-related facility closure measures;
12. A process for proposing plan modifications to the Energy Commission CPM and appropriate agencies for review and approval;
13. All mitigation measures for protection of desert tortoise;
14. All mitigation measures for protection of Mojave fringe-toed lizard; and
15. All mitigation measures for controlling exotic and invasive weeds.
16. All mitigation measures for reducing impacts to Harwood's milkvetch to levels less than significant.
17. All mitigation measures for reducing impacts to Abram's spurge, Arizona spurge, Cove's cassia, Crucifixion thorn, Mesquite nest-straw, and Orocopia sage to levels less than significant.

Verification: At least 30 days prior to start of any project-related ground disturbance (including exclusion fencing installation and BEPTL) activities, the project owner shall provide the CPM with the final version of the BRMIMP, and the CPM will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved BRMIMP must be made only after consultation with Energy Commission staff, CDFG, and the USFWS as appropriate. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

BEPTL HABITAT COMPENSATION

BIO-15 To compensate for permanent impacts to desert tortoise and other sensitive species affected by the project, the project owner will provide compensation funds to the Desert Tortoise Preserve Committee to be used for purchase, administration, maintenance, long-term management, and implementation of management plan objectives for desert tortoise habitat and also suitable to support Mojave fringe-toed lizard, Harwood's milkvetch, Abram's spurge, Arizona spurge, Cove's cassia, Crucifixion thorn, Mesquite nest-straw, and Orocopia sage. The final dollar amount will be based on either B-DPV (41.3 acres), or B-JH (987.8 acres), or both components (1029.1 acres), depending on what project owner constructs.

Component	Impact	Compensation
B-DPV	41.3 acres	41.3 x $1200 = $49,560
B-JH	987.8 acres	985.5 x $1200 = $1,185,360
Both	1029.1 acres	1029.1 x $1200 = $1,234,920

The compensation fund amounts in the table will include purchase and endowment
funds for administration, management, maintenance, monitoring, operation, and research.

Verification: No less than 60 days prior to the start of any BEPTL ground disturbing activities the project owner will provide a check to the DTPC, and a copy to the CEC CPM, Western, USFWS, BLM, and CDFG to verify that funds have been paid. Prior to expenditure of any funds, the DTPC will produce a management plan for review and approval by Western, BLM, USFWS, CDFG and the CPM.

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CULTURAL RESOURES

Gary Reinoehl

SUMMARY OF CONCLUSIONS

Various types of cultural resources exist within the impact area/Area of Potential Effects of the project. A current comprehensive survey and recording of the cultural resources in the impact area/Area of Potential Effect has not been completed. Resources that cannot be avoided may not have been evaluated for the NRHP or the CRHR. Depending on the criteria under which a resource/property might be eligible for one of the registers, the mitigation might be quite different. Until the resources/properties are evaluated under the NRHP and CRHR criteria, appropriate mitigation measures cannot be determined. There is insufficient information to draw conclusions regarding the significance of the impacts of the project and mitigation measures.

The following needs to be provided for staff to complete the Final Staff Assessment (FSA):

- A current cultural resources survey report of the impact area (Area of Potential Effect for the Buck to Julian Hinds Transmission Line and the Buck to Devers Palo Verde Midpoint Substation Transmission Line) (Date Requests 33, and 37).
- A current cultural resources survey report of the Impact area (Area of Potential Effects if the transmission line realignment near the airport is required),
- Identification of mitigation measures that would ensure avoidance of cultural resources (Data Requests 36 and 38).
- An evaluation for the NRHP and the CRHR for any resources that cannot be avoided (Data Requests 30, 34, 35, and 39).
- Responses to data requests that are still not complete (Data Requests 28, 31, 32, and 42).
- Conclusion of Native American consultation between Western Area Power Administration, the Bureau of Land Management and the Energy Commission.

If archeological sites meet the criteria for eligibility for the NRHP, the CRHR, or a local register for information values only, then avoidance or data recovery, if the resource could not be avoided, would mitigate the impact to less than significant. If cultural resources are identified that meet the eligibility criteria for the NRHP, the CRHR, or a local register for values other then just information, then other types of recording may partially mitigate the impacts. It may not be possible to mitigate all impacts to less than significant for some cultural resource types.

INTRODUCTION

This cultural resources analysis identifies potential impacts to cultural resources by the proposed Blythe Energy Project Transmission Line Modification (BEPTL), as defined under state and federal law. The primary concern in the cultural resources analysis for these modifications is to ensure that all potential impacts are identified and that

conditions are set forth that ensure that impacts are mitigated below a level of significance under the California Environmental Quality Act (CEQA) and under the National Environmental Policy Act (NEPA) if possible.

Staff provides a cultural overview of the project, as well as analyses of potential impacts from the project using criteria from the CEQA and the National Historic Preservation Act (NHPA). If cultural resources are identified, staff determines whether there may be a project related impact to identified resources and if the resource meets the eligibility requirements for the California Register of Historic Resources (CRHR) or the National Register of Historic Places (NRHP). If the resources meet the eligibility requirements for either register, staff recommends mitigation measures to ensure that no significant impacts would occur and that impacts to the cultural resources are reduced to a less than significant level, if possible.

There is always a potential that a project may impact a previously unidentified prehistoric or historic resource in an unanticipated manner. Staff, therefore, recommends procedures in the conditions of certification that mitigate these potential impacts.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

CULTURAL RESOURECES Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

	Description
Federal	
36 CFR 800	This regulation requires a process for the agency to take into account the effects of a proposed action on cultural resources.
National Environmental Policy Act (NEPA): Title 42, USC, section 4321-et seq.	This requires federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures
Federal Land Policy and Management Act (FLPMA): Title 43, USC, section 1701 et seq.	This requires the Secretary of the Interior to retain and maintain public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric water resource, and archeological values [Section 1701(a)(8)]; the Secretary, with respect to the public lands, shall promulgate rules and regulations to carry out the purposes of this Act and of other laws applicable to public lands [Section 1740].
Federal Guidelines for Historic Preservation Projects, Federal Register 44739-44738, 190	The Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. The Secretary's standards and guidelines are used by federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The State Historic

(September 30, 1983)	Preservation Office refers to these standards in its requirements for selection of qualified personnel and in the mitigation of potential impacts to cultural resources on public lands in California.
Executive Order 11593 May 13, 1971 (36 Federal Register 8921)	This orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.
American Indian Religious Freedom Act; Title 42, USC, Section 1996	Protects Native American religious practices, ethnic heritage sites, and land uses.
Native American Graves Protection and Repatriation Act (1990); Title 25, USC Section 3001, et seq.,	Defines “cultural items”, “sacred objects”, and “objects of cultural patrimony”; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for the return of specified cultural items.
State	
California Code of Regulations, Title 14, section 4852	This defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.
Public Resources Code, Section 5000	This code establishes the California Register of Historical Resources (CRHR), the criteria for eligibility to the CRHR, and defines eligible resources. It prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. This section sets procedures for notification if Native American artifacts or remains are discovered. It is the policy of the State that Native American remains and associated grave artifacts shall be repatriated.
Health and Human Safety Code 18961	Requires agencies that enforce and administer approvals affecting preservation of historical buildings to use the alternative provisions of this part and consult with the State Historical Building Safety Board to obtain its review prior to taking action or making decisions.
Penal Code, section 622 1/2	This states that anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.
California Health and Safety Code, section 7050.5	This code states that if human remains are discovered during construction, the project owner is required to contact the county coroner.

Local	
Riverside County Ordinance 578.4	This ordinance declares as a matter of public policy that the recognition, protection, preservation, enhancement, perpetuation and use of sites and structures within the County of Riverside having historic significance is necessary and required in the interest of the health, safety, prosperity and general welfare of the public.
Riverside County General Plan Policy OS 19.2	Review all proposed development for the possibility of archaeological sensitivity.
Riverside County General Plan Policy OS 19.3	Employ procedures to protect the confidentiality and prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations.
Riverside County General Plan Policy OS 19.4	Require a Native American Statement as part of the environmental review process on development projects with identified cultural resources.
Riverside County General Plan Policy OS 19.5	Transmit significant development proposals to the History Division of the Riverside County Regional Park and Open-Space District for evaluation in relation to the destruction/preservation of potential historical sites. Prior to approval of any development proposal, feasible mitigation shall be incorporated into the design of the project and its conditions of approval.
Riverside County General Plan Policy OS 19.6	Enforce the Historic Building Code so that historical buildings can be preserved and used without posing a hazard to public safety.
Riverside County General Plan Policy OS 19.7	When possible, allocate resources and/or tax credits to prioritize retrofit of County historic structures, which are irreplaceable.
Environmental Reports Packet (Riverside County Web Page)	Provides standard procedures for the preparation of archaeological or biological reports for privately initiated development proposals including a Memorandum of Understanding between the consultant and the county, notification to the county for the preparation of an archaeological report, standard scopes of work, report outlines, and a level of significance checklist.

SETTING

The proposed transmission line modifications would be situated in eastern Riverside County, California. The area is primarily undeveloped desert bounded by mountains. Most of the project area is within the Sonoran Desert, although the interset poles may be on the southern edge of the Mojave Desert. Precipitation in this area is typically about two inches of rainfall per year. High elevations sometimes receive as much as twelve inches of rainfall per year. Along the eastern border of the area is the Colorado River that is characterized by a green belt of vegetation. The desert's predominate plant is the creosote bush in the lower relatively flat areas.

PREHISTORIC SETTING

Early Man Period or Malpais (50,000-12,000 Before Present)

Numerous archeologists discuss cultural materials attributed to this period. The materials are heavily varnished choppers and scrapers found in the desert pavement. In some cases, core-based tools, shell tools, trails and geoglyphs are also included in the assemblage. Pottery, ground stone and hammer stones are missing from the assemblage. The technology to date these materials is still disputed in the archeological community (BLYTHE 2004a, p. 5.16-1; BLYTHE 2004e Attachment DR#32-1, p. 24; Moratto 2004, pp. 76-92).

Paleoindian Period or San Dieguito (12,000-8,000 Years B.P.)

Throughout the Great Basin and in Central and Northern California, lake and marsh environments existed in the what is now the desert region during this time period. The cultural tradition that has been associated with these environments is referred to as the Western Pluvial Lakes Tradition. This period is considered to be characterized by the hunting of Pleistocene large game that heavily utilized the lake and marsh environments. In the southern California desert, this phase is usually termed the San Dieguito complex. The artifact assemblage is characterized by foliate knives and points, crescents, knives, and a variety of scrapers, cleavers, and choppers. The warming climate, the Altithermal, started the drying of the lakes and marshes at about 8,000 B.P. resulting in the nearly complete loss of these traditions by 7,000 B.P. (BLYTHE 2004a, p. 5.16-2; BLYTHE 2004e Attachment DR#32-1, pp.24-26; Moratto 2004, pp. 76-103).

Archaic Period (Pinto and Amargosa) (8,000-1500 Years B.P.)

As the desert area dried, the carrying capacity of the area diminished and adaptation strategies changed. The general population of the desert area diminished and people congregated in areas where there was greater moisture and the availability of food was more consistent. Springs became very important resources in the deserts and larger archeological sites have been found in association with them. Use of hard seed materials became more prevalent and storage of food materials more important (BLYTHE 2004a, p. 5.16-2; BLYTHE 2004e Attachment DR#32-1, p. 26).

Late Prehistoric Period (1,500-100 B.P.)

Some significant changes occurred during this period including a shift from spear throwers to the bow and arrow and the advent of paddle and anvil ceramics (perhaps an influence from Mexico or from the Hohokam culture of the Gila River. Flood plain agriculture developed about this time, increasing sedentism in the local groups.

The groups still participated in trade and travel. Trail systems are well recorded for this period, documenting travel and trade to springs and resource procurement and ceremonial areas (BLYTHE 2004a, pp. 5.16-2 and 5.16-3; BLYTHE 2004e Attachment DR#32-1, pp. 26-27).

ETHNOGRAPHIC BACKGROUND

The transmission line crosses areas that are within the traditional boundaries used by the Cahuilla, Chemehuevi, Quechan and the Halchidhoma.

Cahuilla

The Cahuilla are of the Uto-Aztecan linguistic group, believed to have migrated from the Great Basin area into California. Independent clans owned territory within the area. The territory extended from the valley floors to the mountaintops, covering several biotic zones. Villages were occupied year round, and temporary camps would be utilized by small groups to gather foods and products in different environmental zones.

Communities were centered around water sources. Houses and structures were spaced at some distance from each other, making the community a mile or two in size. Some communities were large, totaling over a thousand individuals (BLYTHE 2004a, p. 5.16-5; BLYTHE 2004a, Appendix D, pp. 9-10; BLYTHE 2004e Attachment DR#32-1, pp. 32-34).

Chemehuevi

The Chemehuevi are also of the Ute-Aztecan language stock. They occupied an area east of the Cahuilla, north of the Quechan, south of the Mojave, and east of the Halchidhoma. The Chemehuevi organized in smaller more mobile groups than did the Cahuilla. Settlements were scattered and small groups traveled in a seasonal round visiting similar areas each year. They seldom maintained permanent settlements (BLYTHE 2004a, pp. 5.16-5 and 5.16-6; BLYTHE 2004a, Appendix D, p. 10; BLYTHE 2004e, Attachment DR#32-1, p. 36).

Quechan

The Quechan are part of the Western Hokan language group. They lived on both sides of the Colorado River from Blythe south to the confluence of the Gila and Colorado River. The Quechan utilized agricultural practices as well as hunting and gathering. The villages were located on the higher river terraces while planting took place by smaller family groups that moved to the flood plain to tend the crops during the summer and fall (BLYTHE 2004a, p. 5.16-6; BLYTHE 2004a, Appendix D, p. 11).

Halchidhoma

The Halchidhoma were from the Western Hokan language group. The occupied an area south of the Quechan traditionally. They had moved north by the eighteenth century to an area around Blythe and Parker. They were subsequently forced out of this area by the Quechan and Mojave.

The Halchidhoma relied on agricultural practices with hunting and gathering activities as a supplement. Much like the Quechan, the Halchidhoma maintained villages in the winter and spring on the higher river terraces and moved to the flood plain in the summer and fall to tend crops (BLYTHE 2004a, pp. 5.16-6 and 5.16-7; BLYTHE 2004a, Appendix D, p. 11).

HISTORIC SETTING

Hispanic Period

The earliest exploration into the Colorado River area was by Henando de Alacron in 1540, who sailed up the Colorado River to an area near present day Yuma. Although some exploration did occur into this area, the Spanish occupation focused on the area and to the south and east of Yuma and along the California coastal area. The desert interior remained somewhat isolated from the early effects of missions. In the late 1800s, the Spanish started moving into this area by establishing the Mission La Purisima Concepcion near present day Yuma and Mission San Pedro Y San Pablo de Bicuner north of Yuma near the current location of Bard, California. The mission system was also establishing trail routes between the Yuma missions and the California coastal missions. At first, relations were friendly between the Spanish and the Native Americans in this area. However, as the Spanish became more of a presence in the area relations became strained. In 1781, the Native Americans destroyed the main Spanish pueblo, San Pablo Bicuner, Mission San Pedro and the Mission La Purisima Concepcion (BLYTHE 2004a, pp. 5.16-7 and 5.16-8).

This was quite different from the interaction between the Spanish and the Cahuilla Indians. It wasn't until the early 1800s that the presence of the Spanish began influencing the Cahuilla in a more substantial manner. The Cahuilla seemed to accept and adjust to the presence of the Spanish (BLYTHE 2004a, Appendix D, pp. 34-35).

In 1821, Mexico revolted from Spain. The missions became secularized in1834. The Mexican government granted many parcels of land to individuals, mostly to the descendants of early soldiers and civil officials. In 1848, the Treaty of Guadalupe Hidalgo transferred control to the United States (BLYTHE 2004a, pp. 5.16-6 – 5.16-8; BLYTHE 2004e Attachment DR#32-1, pp. 34-35).

Euro-American Period

During this period development occurred fairly quickly and consequently will be considered under various themes.

Mining

The gold rush in California started in the northern part of the state. This did not influence the desert area until the availability of gold to individual miners diminished in the north and exploration for the minerals spread to the south. The first discovery of gold in the area was north and east of Blythe in the 1860s. The development of the Southern Pacific Railroad (SPRR) through this area by the late 1870s helped move materials for mining and brought more people into the area for more exploration. Gold mining operations were also developed in the Chocolate Mountains to the southeast of Blythe. Other valuable minerals were found in the desert area including silver, copper, gypsum, fluorite, manganese, and uranium.
During World War II, iron, zinc, fluorite, manganese and gypsum became important minerals to extract. Kaiser Steel Corporation mined iron ore from their facility near Eagle Mountain starting in 1942 (BLYTHE 2004a, p. 5.16-8; BLYTHE 2004e Attachment DR#32-1, pp. 37-38).

Transportation

The earliest transportation routes through the desert wire Native American Trails. These were utilized by many people entering the area as they connected to water sources. The Bradshaw Tail became the first published route from the west into Blythe. A stage line was operated along this route from 1862 until 1879. The trail remained as a transportation route until 1908 when a new route was developed that later became Interstate 10.

The SPRR was developed across the desert, starting from Los Angeles and reaching Yuma by 1877. The railway could transport goods and people faster and cheaper than other means. Supplies for the mines were transported at least in part using the SPRR.

The Eagle Mountain Railroad was built to transport goods to and from the Kaiser Steel Corporation mine. This spur from the SPRR to the mine opened in 1948. The rail line ceased transporting ore in 1983, but is still functional (BLYTHE 2004a, p. 5.16-9; BLYTHE 2004e Attachment DR#32-1, pp. 38-40).

Irrigation

The development of the desert region of California was hampered by the availability of water. In the 1930s, the Colorado River Aqueduct was built from the Colorado River to the City of Los Angeles. The project was one of the largest employers in southern California during the depression, drawing many laborers to this area (BLYTHE 2004a, pp. 5.16-9 -5.16-10).

World War II

During World War II, the deserts of California and Arizona became training grounds in preparation for the North Africa Campaign. The Desert Training Center (DTC) was the largest military training area in the United States. General George S. Patton was the first commanding officer. The facility was named the California-Arizona Maneuver Area (CAMA) in 1943.

The Army acquired the Blythe Airport and developed it into the Morton Air Academy. The Army expanded the facility to accommodate bombers and other military aircraft necessary for the war effort. The academy raised the population of Blythe to over 4,000 as a result of service men, families, and civilian employees.

The DTC/CAMA was closed in 1944 with the allied victory in North Africa. A few of the WWII buildings still stand at the Blythe Airport. The runways now serve as part of the Blythe Airport, a public municipal airport (BLYTHE 2004a, pp. 5.16-10 – 5.16-11; BLYTHE 2004e Attachment DR#32-1, pp. 40-42).

Electrification

Control of the Colorado River to prevent flooding of the lower portions of the river was considered an important project in the early 20th Century. Damming the river also had great potential for electrical energy that could supply southern California. Congress authorized the construction of Boulder Dam and its construction began in 1931 (http://www.mav-magazine.com/Aug2000/hoover_dam.htm). Power was originally

supplied to the construction site via the transmission line from Adelanto to Boulder. This line later became the first line to transmit power from Boulder Dam to Los Angeles.

The Parker Dam Project provided additional power to the southern California desert lands starting in the 1950s. Three transmission lines, Parker-Blythe No. 1, Blythe-Knob, and Parker-Gila, are associated with the Blythe substation. These lines were evaluated for their eligibility to the National Register of Historic Places (NRHP) for the construction of the Blythe Energy Project. None of the lines were found to meet the eligibility criteria for the NRHP.

RESOURCES INVENTORY

Literature and Records Search

The applicant conducted a record search of the project alternatives on September 17, 2003, and again on April 19 and 20, 2004. The search included an area one-quarter mile on each side of the transmission line and around the proposed Midpoint Substation. Table 5.16-2 lists forty-three resources recorded within 200 feet of the proposed Buck to Julian Hinds transmission line. However, the listing in the text of sites by type totals only forty resources recorded within 200 feet of the proposed Buck to Julian Hinds transmission line (BLYTHE 2004a, p 5.16-19).

The record search indicated that numerous cultural resource studies have been conducted within the study area. A recent survey for the Devers to Palo Verde No. 2 Transmission Line (DPV2) that post dates the record search recorded thirty-three cultural resource sites. A portion of the DPV2 parallels the proposed Buck to Julian Hinds route. Some of these are likely near or within the study area for the Buck to Julian Hinds study area (BLYTHE 2004a Appendix D-1, pp 27-33).

Additional background research included examining Government Land Office (GLO) maps to identify areas of high potential for cultural resources, sending letters to local jurisdictions requesting inventory or register information of significant resources near the project impact area/Area of Potential Effect, and sending letters to local historical and archeological societies and museums regarding knowledge of resources near the project area (BLYTHE 2004e, pp 29-32). A complete survey of this alternative is expected to be completed in February, 2005 (BLYHTE 2004e, p. 32).

Buck to Julian Hinds Transmission Line

The applicant conducted reconnaissance along this alignment including some “windshield surveys” and some small area judgmental surveys. Some intensive survey was conducted at areas where substations were proposed or in areas of known sites or where sites were thought to be likely. Twenty prehistoric sites and seven historic sites were identified within the impact area/Area of Potential Effect along this route (BLYTHE 2004a, p 5.16-19 and 5.16-24; BLYTHE 2004e, p. 36). A complete survey of this alternative is expected to be completed before February, 2005 (BLYTHE 2004e, p. 32). Results of the surveys will be provided in the Final SA/EA.

Buck to Devers Palo Verde Midpoint Substation Transmission Line

The applicant conducted reconnaissance along this alignment including some "windshield surveys" and some small area judgmental surveys. Some intensive survey was conducted at areas where substations were proposed or in areas of known sites or where sites were thought to be likely. One prehistoric site and two historic sites (not including the substation site) were identified within the impact area/Area of Potential Effect along this route (BLYTHE 2004a, p 5.16-19 and 5.16-24; BLYTHE 2004e, p. 36). A complete survey of this alternative is expected to be completed before February, 2005. Results of the surveys will be provided in the Final SA/EA.

Downstream Upgrades

Six interset structures (towers) are anticipated to upgrade the Julian Hinds Mirage 220 kV transmission line. The background record search was conducted for a one-half mile radius of each of the identified poles. The background research indicated that six resources had been previously identified in the research area. Pedestrian survey of the proposed construction areas were conducted between the 16th and 18th of September, 2004. One isolated ceramic fragment was identified as a result of the inventory.

Native American Contacts

Western requested a list of Native American contacts from the Native American Heritage Commission (NAHC) on September 28, 2004. On October 6, 2004, Western received a letter from the NAHC indicating that a search of the sacred lands file failed to indicate the presence of Native American resources in the area. The NAHC also provided a Native American contact list for Riverside County. On December 3, 2004, BLM sent letters to eleven Tribal Governments and sixteen other Tribal Representatives initiating government to government consultation regarding this project and to identify any issues or concerns they would like to have addressed pursuant to NHPA, NEPA or state requirements. A brief description of the project was provided as well as a map of the proposed route.

BLM, Western and the Energy Commission will continue to have meetings and telephone contacts with Native American groups. Results of the consultation will be provided in the Final SA/EA.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Various laws apply to the treatment of cultural resources. These laws require the Bureau of Land Management (BLM), Western Area Power Administration (Western) and the Energy Commission to categorize resources by determining whether they meet several sets of specified criteria. These categories then in turn influence the analysis of potential impacts to the resources and the mitigation that may be required to ameliorate potential significant impacts.

The National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR) criteria state that the types of resources eligible for nomination are: districts, sites, building, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that (1) are associated with events that have made a significant contribution to the broad patterns of our history; or (2) that are associated with the lives of persons significant in our past; or (3) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or (4) that have yielded, or may be likely to yield, information important to history or prehistory. Historical resources that are automatically listed in the CRHR include (1) California historical resources listed in or formally determined eligible for the NRHP and (2) California Registered Historical Landmarks from No. 770 onward.

For all resources that are not currently listed in the NRHP or the CRHR, the lead agency must make a determination as to whether the resources are historically significant and retain sufficient integrity to be recognizable and convey the reasons for their significance. If the criteria are met and the resource is determined by the agency to be eligible for the NRHP (Western or BLM) or the CRHR (Energy Commission), then the agency must evaluate whether the project will have an adverse effect on a historic property or cause a “substantial adverse change in the significance of the historical resource,” which regulations define as a significant effect on the environment.

Federal agencies may enter into a Programmatic Agreement (PA) under the implementing regulations (36 CFR 800) of the National Historic Preservation Act. A PA is used when circumstances warrant a separate process from the normal Section 106 process. BLM and Western are currently developing a PA to take into account the effects of the project on historic properties.

CEQA contains a section addressing “unique” archeological resources and provides a definition of such resources (Public Resources Code, Section 21083.2). This section establishes limitations on analysis and prohibits imposition of mitigation measures for impacts to archeological resources that are not unique. However, the CEQA Guidelines state that the limitations in this section do not apply when an archeological resource has already met the definition of a historical resource (Title 14, California Code of Regulations, Section 15064.5). Since staff has determined that the sites for which it is recommending mitigation meet the definition of historical resources, the prohibition does not apply to the mitigation discussed in this PSA.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Survey information for the six interset poles includes the results of the record search, methodology for the survey, a record for the one fragment of Native American ceramic (brown ware) and a recommendation that the ceramic fragment does not meet the criteria for eligibility to the NRHP or the CRHR. Staff agrees that the single fragment of brown ware does not meet the eligibility requirements for the NRHP or the CRHP and will not be discussed further in this PSA.
Surveys for the proposed transmission line and substations have not been completed. Many of the resources along the proposed route have not been evaluated for the NRHP or the CRHP. Evaluation of resources that cannot be avoided is scheduled for early in

2005 (BLYTHE 2004e, pp. 32-33). Until the surveys, avoidance measures, evaluations and Native American consultation is complete, impacts cannot be clearly stated and mitigation cannot be determined. Staff has reviewed the Desert Southwest Transmission Line (DSTL) EIR/EIS and its surveys, but due to lack of information regarding the location of the proposed BEPTL vs. the DSTL routes staff is not currently able to use the information in these surveys.

For archeological sites that meet the criteria for eligibility for the NRHP, the CRHR, or a local register for information values only, avoidance or data recovery, if the resource could not be avoided, would mitigate an impact to less than significant. If cultural resources are identified that meet the eligibility criteria for the NRHP, the CRHR, or a local register for values other then just information, then other types of recording may partially mitigate the impacts. It may not be possible to mitigate all impacts to less than significant for some cultural resource types.

TRANSMISSION LINES NEAR THE AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Assistant City Manager/ Airport Manager for the City of Blythe informed staff that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would follow the existing D-VP power line path through an existing Right of Way in an orange grove. The following is staff's evaluation of the City of Blythe's proposed alternative route.

The realignment area would have to be inventoried for cultural resources if a current survey does not exist. If resources are found and would be impacted by the construction and maintenance of the power line, the resource would have to be evaluated for eligibility to the NRHP and the CRHR. If the resource meets the eligibility requirements for either of the registers, then measures would need to be developed to mitigate the impact of the realignment to less than significant, if possible.

CUMULATIVE IMPACTS AND MITIGATION

At least two other transmission lines are proposed along this corridor. If cultural resources are identified that meet the eligibility requirements for the NRHP, the CRHR, or a local register for values other then just information, where setting, feeling, and association are important aspects of integrity or that qualify as a traditional cultural property, impacts could result in a cumulative impact. Information provided is insufficient to make a conclusion regarding cumulative impacts. Until the surveys, avoidance measures, evaluations and Native American consultation is complete, any cumulative impacts cannot be clearly stated and mitigation cannot be determined.

COMPLIANCE WITH LORS

Federal agencies are required to comply with the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act (36 CFR 800), the

Federal Land Policy and Management Act, the Federal Guidelines for Historic Preservation Projects, Executive Order 11593, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act. The Federal agencies involved in this project will require the applicant to complete sufficient work for the agency to fulfill their duties under each of the acts and their implementing regulations. Federal agencies have begun consultation with Native American Tribes to fulfill their obligations under several laws to ensure that cultural resources are identified and that Native American religious practices, ethnic heritage sites and land uses are not adversely impacted. Under Section 106, the Federal Agencies are preparing to implement a Programmatic Agreement with the California State Historic Preservation Officer, the applicant and several Native American Tribes prescribing the process for taking into account the effects of the proposed project.

The Energy Commission is required to comply with the Warren Alquist Act and the California Environmental Quality Act (CEQA). The CEQA definitions, standards and Guidelines are used in the environmental analysis. The Energy Commission determines which cultural resources meet the criteria for eligibility to the CRHR. Those resources are significant and if the qualities of the resource are diminished by the project, mitigation would be required. The Energy Commission conditions its certification of an application so that the impacts to significant resources are reduced to less than significant, if possible.

The County of Riverside general plan requires review of all proposed development in the county, confidentiality of sensitive resource information, a written Native American statement as part of the review process, review of impacts and mitigation measures, enforcement of the historic building code, allocation of resources and tax credits when possible, the use of approved consultants, and the execution of a Memorandum of Understanding (MOU) between the consultant and the county. The MOU requires the submittal of notification to the county that the consultant will be preparing an archeological report, the use of a standard format for the report, and that the consultant will submit the report to the county before or at the same time as the project sponsor (applicant). The County of Riverside also requires that the archeologist conducting the work is approved by the county. Mooney and Associates, the cultural resource consultant conducting the cultural resource studies is on the county's approved list of consultants. To ensure that the county LORS are met, the Energy Commission conditions of certification will require that the appropriate forms, reports and formats are provided to the county in a timely manner.

CONCLUSIONS

Various types of cultural resources exist within the impact area/Area of Potential Effects of the project. A current comprehensive survey and recording of the cultural resources in the impact area/Area of Potential Effect has not been completed. Resources that cannot be avoided may not have been evaluated for the NRHP or the CRHR. Depending on the criteria under which a resource/property might be eligible for one of the registers, the mitigation might be quite different. Until the resources/properties are evaluated under the NRHP and CRHR criteria, appropriate mitigation measures cannot

be determined. There is insufficient information to draw conclusions regarding the significance of the impacts of the project and mitigation measures.

The following needs to be provided for staff to complete the FSA.

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- Responses to data requests that are still not complete (Data Requests 28, 31, 32, and 42).
- Conclusion of Native American consultation between Western Area Power Administration, the Bureau of Land Management and the Energy Commission.

If archeological sites are identified that meet the criteria for eligibility for the NRHP, the CRHR, or a local register for information values only, then avoidance or data recovery, if the resource could not be avoided, would mitigate the impact to less than significant. If cultural resources are identified that meet the eligibility criteria for the NRHP, the CRHR, or a local register for values other then just information, then other types of recording may partially mitigate the impacts. It may not be possible to mitigate all impacts to less than significant for some cultural resource types.

An additional condition of certification, Cul 15, is required to ensure that the County of Riverside's standards are met. Additional conditions may be necessary to ensure that the impacts are mitigated to less than significant.

PROPOSED CONDITIONS OF CERTIFICATION

Conditions of certification Cul-1 through Cul-14 shall still apply to the project. Cul-15 is added.

Cul-15 Within 30 days of Commission approval of the proposed Blythe Energy Project Transmission Line Modifications, the project owner shall ensure that the CRS enters into a Memorandum of Understanding (MOU) entitled "Memorandum of Understanding between the County of Riverside and Consultant Regarding Preparation and Handling of Archaeological and Biological Reports." The project owner shall ensure that the CRS complies with the requirements of the MOU unless the requirements conflict with other conditions of certification. If there is a conflict between the MOU requirements and other LORS, the project owner shall provide the CPM within one week a summary of the conflicting direction provided by the County of

Riverside, Western, or BLM, so the CPM can take steps to resolve the conflict with the involved parties.

Verification: Within one week of its execution with the County of Riverside, the project owner shall provide a copy of Memorandum of Understanding to the CPM. The project owner shall provide copies of all documents required by the MOU to the CPM at the same time they are provided to the County of Riverside. In addition, within one week of receiving correspondence from the County of Riverside regarding the MOU, the project owner shall provide copies of the correspondence to the CPM. After the summary of conflict resulting from the MOU and other LORS has been received, the CPM will take steps to resolve the conflict with all the involved parties.

REFERENCES

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004a. Petition for post certification amendment. Submitted to the Docket on October 12, 2004.

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004b. Additional Information – Petition for Modification. Submitted to the Docket on October 15, 2004.

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004e. Data Responses Nos. 1 – 99. Submitted to the Docket on December 1, 2004.

Bureau of Land Management, North Palm Springs, California. (BLM) 2004a. Letter to the Torres-Martinez Desert Cahuilla Indians informing them of the proposed project, a brief description, and an invitation to initiate government to government consultation. Submitted to the Docket on December 2, 2004.

California Energy Commission, Sacramento, California. (CEC) 2004c. Staff's Data Requests Nos. 1 - 99. Submitted to the Docket on November 1, 2004.

California Energy Commission, Sacramento, California. (CEC) 2004d. Blythe Energy Transmission Line Issues Identification Report. Submitted to the Docket on November 3, 2004.

Galati & Blek, Attorney for applicant, Sacramento, California. (G&B) 2004b. Application for Confidentiality – Volume II, Preliminary Cultural Resources Survey and Appendix D-2, Archaeological Site Records – Petition for Transmission Amendment. Submitted to the Docket on October 12, 2004.

Western Area Power Administration, Lakewood, Colorado. (WAPA) 2004a. Data Requests for Blythe Energy Petition for Post-certification Amendment, October 2004 version. Submitted to the Docket on October 29, 2004.

Western Area Power Administration, Lakewood, Colorado. (WAPA) 2004b. Comments on Blythe Energy Transmission Line Amendment Data Responses, Filed 11/30/2004. Submitted to the Docket on December 9, 2004.

HAZARDOUS MATERIALS MANAGEMENT

Geoff Lesh, P.E. and Rick Tyler

SUMMARY OF CONCLUSIONS

By incorporating the appropriate Conditions of Certification, the transport to and use of hazardous materials at the BEPTL project site would not result in significant impacts to the public or the environment. No significant or reportable quantities would remain on site during either the construction or operation phase of the proposed project.

INTRODUCTION

The purpose of this staff analysis is to determine if the proposed Blythe Energy Project Transmission Line Modification (BEPTL) project complies with applicable laws, ordinances, and regulations (LORS), and has the potential to cause significant impact on the public as a result of the use, handling or storage of hazardous materials at the proposed facility. If significant adverse impacts on the public are identified, Energy Commission staff must also evaluate the potential for facility design alternatives and additional mitigation measures to reduce impacts to the extent feasible.

This analysis does not address potential exposure of workers to hazardous materials used at the proposed facility. Staff's **Worker Safety and Fire Protection** analysis portion of this document describes the requirements applicable to the protection of workers from such risks.

Other hazardous materials stored in smaller quantities, such as mineral and lubricating oils would be present at the proposed facility. However, these materials pose no significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, and/or their environmental mobility.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

A framework, based on environmental laws, ordinances, regulations and standards (LORS), exists to reduce risks of accidents and reduce routine hazards. The following federal, state, and local laws generally apply to the protection of public health and the environment. Their provisions have established the basis for staff's determination regarding the significance of potential impacts and acceptability of the BEPTL project.

Hazardous Materials Management Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
The Superfund Amendments and Reauthorization Act of 1986	Also known as SARA Title III, and Clean Air Act (CAA) of 1990 (42 U.S.C. §7401 *et seq*. as amended), established a nationwide emergency planning and response program, and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. Section 112(F) of the CAA, 42 U.S.C. §7412(F) requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility through preparation of Risk Management Plans. These requirements of the CAA are reflected in the California Health and Safety Code, section 25531 *et seq*.
The California Health and Safety Code, sections 25534 and 25535.1	Directs owners of a stationary source, as defined in 40 C.F.R. §68.3, who store or handle acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP) and to submit it to appropriate local authorities, the United States Environmental Protection Agency (USEPA), and the designated local administering agency for review and approval.
California Health and Safety Code, section 41700	Requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."
The Uniform Fire Code (UFC) Articles 79 and 80	Contains provisions regarding the storage and handling of hazardous materials
The California Building Code (CBC)	Also contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit

SETTING

The proposed BEPTL modifications would be located in eastern Riverside County, California, predominantly on undeveloped public desert lands administered by the Bureau of Land Management (BLM). Expansive, primarily undeveloped desert and mountainous areas characterize this portion of eastern Riverside County. Interstate-10, State Route 78, and State Route 177 are the primary highways providing vehicular access throughout this region.

A number of hazardous chemicals will be used during construction of the BEPTL in small quantities. Proposed safeguards and measures to greatly reduce the opportunity for, or the extent of, exposure to hazardous materials or other hazards would be put in place.

ANALYSIS OF IMPACTS

A variety of hazardous materials are proposed for storage and use during the construction of the project and for routine operation and maintenance. A list of the hazardous materials to be used during operation of the facility is included in Table 5.11-1 of the Petition for Post-Certification Amendment (PPCA) (BEPTL 2004).

METHODOLOGY

In order to assess the potential for released hazardous materials to travel off-site, and impact the public, staff analyzed several aspects of the proposed use of these materials at the facility. Staff recognizes that some chemicals must be used that are toxic. Therefore, staff conducted its analysis by examining the need for hazardous materials, the choice of chemical to be used and its amount, the manner in which the applicant will use the chemical, the manner it would be transported to the facility and transferred to facility storage tanks, and the way the applicant chooses to store the material on-site. Both engineering and administrative controls can act as methods of prevention or as methods of response and minimization. In both cases, the goal is to prevent a spill from moving off-site and causing harm to people.

Staff conducted a review and evaluation of the applicant's proposed use of hazardous materials as described by the applicant (BEPTL 2004, Section 5.11). Staff's assessment follows the five steps listed below:

- Step 1: Staff reviews the chemicals and the amounts proposed for use as listed in Table 5.11 of the PPCA and determines the need and appropriateness of their use;
- Step 2: Those chemicals, proposed for use in small amounts or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, are removed from further assessment;
- Step 3: Measures proposed by the applicant to prevent spills are reviewed and evaluated. These include engineering controls such as automatic shut-off valves and different size transfer-hose couplings and administrative controls such as worker training and safety management programs;
- Step 4: Measures proposed by the applicant to respond to accidents are reviewed and evaluated. These measures also include engineering controls such as catchment basins and methods to keep vapors from spreading and administrative controls such as training emergency response crews; and
- Step 5: Staff then analyzes the theoretical impacts on the public worst-case spill of hazardous materials even with the mitigation measures proposed by the applicant. If the mitigation methods proposed by the applicant were found to be sufficient, no further mitigation would be required. If the mitigation proposed by the applicant is found to be insufficient to reduce the potential for adverse impacts to an insignificant level, staff would then propose additional prevention and response controls until the potential for causing harm to the public was reduced to an insignificant level. It is only at this point that staff can recommend that the facility be allowed to use hazardous materials in significant quantities.

DISCUSSION OF IMPACTS

Small Quantity Hazardous Materials

In conducting this analysis, staff determined in Steps 1 and 2 that some materials, although present at the proposed facility, pose a minimal potential for off-site impacts as they will be stored in a solid form, in smaller quantities, have low mobility, or have low levels of toxicity.

In addressing the potential for impacts during the **construction phase** of the project, the only hazardous materials proposed for use include gasoline, fuel oil, hydraulic fluid, lubricants, solvents, cleaners, sealants, welding flux, paint, and paint thinner. Any impact of spills or other releases of these materials would be limited to the site due to the small quantities involved and thus no further analysis of construction phase activities appears warranted. These chemicals would be present in very small quantities – and some are solids, thus posing an insignificant risk of off-site impacts. Therefore, these hazardous materials were eliminated from further consideration.

Continuing with the assessment for the **operational phase**, after removing from consideration those chemicals that fit into Steps 1 and 2, staff concluded that there were no remaining materials requiring analysis.

CUMULATIVE IMPACTS AND MITIGATION

The primary potential cumulative effect would require consideration of the possibility any one chemical release form the site would create an additive risk to the public when combined with other releases from surrounding chemical-use facilities. However, Staff considers the extremely unlikely scenario of simultaneously occurring releases, under meteorological conditions which allow their respective plumes to merge, and travel downwind without significant dispersion, to be extremely unlikely, particularly when the low probability of the materials onsite to create any offsite impacts is taken into account. Therefore, Staff finds that there would be no cumulative impacts.

FACILITY CLOSURE

The requirements for the handling of hazardous materials remain in effect until such materials are removed from the site regardless of facility closure. Therefore, the Applicant is responsible for continuing to handle such materials in a safe manner, as required by applicable laws. In the event that BEPTL abandons the facility in a manner, which poses a risk to surrounding populations, staff would coordinate with the California Office of Emergency Services, Riverside County Fire Department, and the California Department of Toxic Substances Control (DTSC) to ensure that any unacceptable risk to the public is eliminated. Funding for such emergency action can be provided by federal, state, or local agencies until the cost can be recovered from the responsible parties.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No comments were received.

CONCLUSIONS

By incorporating the amendment to Condition of Certification **Haz-1** to include the list of hazardous materials listed in the PPCA , the transport to and use of hazardous materials at the BEPTL project site will not result in significant impacts to the public or the environment. Analysis shows that there will be no significant direct or cumulative impact to an environmental justice population.

Staff recommends the Energy Commission impose the proposed conditions of certification, presented herein, to ensure that the project is designed, constructed and operated to comply with applicable LORS and to protect the public from significant risk of exposure to an accidental ammonia release.

PROPOSED CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material in reportable quantities, as specified in Title 40, C. F.R. Part 355, Subpart J, section 355.50, not listed in Appendix B of the AFC, or in Table 5.11-1 of the PPCA application (BEPTL 2004), unless approved in advance by the CPM.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.

REFERENCES

AIChE (American Institute of Chemical Engineers). 1989. Guidelines for Technical Management of Chemical Process Safety, AIChE. New York, NY 10017.

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BEPTL (Blythe Energy Project Transmission Line Modifications) 2004: Petition for Post-Certification Ammendment [99-AFC-8]. Submitted to the California Energy Commission on October 1, 2004.

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FEMA (Federal Emergency Management Agency). 1989. Handbook of Chemical Hazard Analysis Procedures, Federal Emergency Management Agency, Washington, DC, 1989.

FMCSA (Federal Motor Carrier safety Administration). 2000. Large Truck Crash Profile : The 1998 National Picture, 2000.

Harwood W. et al. 1990. Truck Accident Rate for Hazardous Materials Routing, National Research Council, 2000.

Lees, F.P. 1998. Loss Prevention in the Process Industries, Vols. I, II and III. Second Edition, Butterworths.

Perry. 1973. Perry's Chemical Engineers' Handbook, Sixth Edition, McGraw-Hill, USA.

USOSHA (United States Occupational Safety and Health Administration). 1993. Process Safety Management / Process Safety Management Guidelines For Compliance. U.S. Department of Labor, Washington, DC.

LAND USE

Amanda Stennick

SUMMARY OF CONCLUSIONS

The Commission's land use staff has reviewed the proposed project in light of the California Environmental Quality Act (CEQA) Guidelines' and the National Environmental Policy Act's (NEPA) criteria for a significant land use impact. The criteria include an assessment of whether a proposed project will conflict with any applicable land use plan. The key land use plan affecting this project is the U.S. Bureau of Land Management's (BLM) California Desert Conservation Area (CDCA) Plan of 1980, which requires that potentially significant impacts in various environmental resource areas be addressed and mitigated.

As of this writing, the cultural and biological resources staff have stated that the project has the potential for significant unmitigated impacts. Thus, land use staff cannot state that the proposed project is in conformance with the CDCA, nor can staff conclude that the project is in conformance with Title 43, Code of Federal Regulations §1610.5-3.

Also transmission engineering staff have stated that the Julian Hinds to Buck Boulevard line may be inconsistent with the purpose of Utility Planning Corridor K, especially in view of cumulative proposed transmission line projects in this corridor.

Please refer to the **Biological Resources**, **Cultural Resources**, and the **Transmission System Engineering** sections of the Preliminary Staff Assessment (PSA) for a further discussion of impacts.

INTRODUCTION

The land use analysis of the Blythe Energy Project Transmission Line (BEPTL) Petition for Post-Certification Amendment (99 AFC-8C) Preliminary Staff Assessment (PSA) focuses on the project's consistency with the land use laws, ordinances, regulations standards, plans and policies, and the project's compatibility with existing and planned land uses. In general, a transmission line may be incompatible with existing and planned land uses if it creates unmitigated visual impacts or when it unduly restricts existing or planned future uses. A transmission line may also create a significant impact if it converts prime or unique farmland or farmland of statewide importance to non-agricultural uses.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

The following table contains all applicable land use laws, ordinances, regulation, and standards.

LAND USE Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal Bureau of Land Management	California Desert Conservation Area Plan requires a right-of-way grant for transmission line and Midpoint Substation Code of Federal Regulations Title 40; § 1508.27 Code of Federal Regulations Title 43; §1610.5-3
State	There are no state land use LORS for this project
Local Riverside County	Riverside County Conditional Use Permit for Julian Hinds Substation modification may be required
City of Blythe	City of Blythe requires a Height Variance for transmission line poles

SETTING

The proposed project would be located in eastern Riverside County primarily on undeveloped public lands administered by the BLM and situated within BLM-designated CDCA Utility Corridor K. These corridors are established to encourage joint use of common alignments for various linear utility projects and to avoid sensitive wilderness and cultural resources whenever possible.

BLM uses the land use classification Multiple Use Class (MUC) to administer about ten million acres of the California Desert, including lands within designated Utility Corridors such as Corridor K. MUCs are based on compatible, planned land uses and conservation of sensitive land resources. The proposed project, where situated on BLM lands, is within Class L (Limited Use) and Class M (Moderate Use). According to the CDCA, MUC L protects sensitive, natural, scenic, ecological, and cultural resource values. Public lands designated Class L are managed to provide lower-intensity, carefully controlled multiple use of resources while ensuring that sensitive values (cultural, scenic, biological resource) are not significantly diminished. MUC M is based upon a controlled balance between higher intensity use and protection of public lands. Class M lands are managed to provide for a wider variety of present and future uses such as mining, livestock grazing, recreation, energy and utilities development, while conserving desert resources and mitigating damages permitted uses may cause.

As stated in Chapter 2: Multiple Use Classes in the California CDCA, all land use actions and resource management activities on public lands within a MUC must meet the guidelines given for that Class. MUC Guidelines (Table 1) for transmission facilities sited on Class L and Class M public lands state that new electric transmission facilities (towers and cables 161 kV or above) are allowed within designated utility corridors only; existing electric facilities within designated utility corridors may be maintained, upgraded, and improved in accordance with existing rights-of-way or by amendments to right-of-way grants.

Interstate 10, State Route 78, and State Route 177 are the main highways providing vehicular access throughout this region. The applicant evaluated the land uses within 0.25 mile on either side of the proposed reference center line, which is the transmission planning staff's best estimate of the line's actual location. Existing land uses within that area include undeveloped open space, desert lands, rights-of-way for interstate and state highways and county and local roads, and railroads. Utility uses include telephone

lines, pipelines, aqueducts, electrical substations and transmission lines, such as Southern California Edison's existing D-PV1 500kV line. Joshua Tree National Park is less than 0.25 mile north of the Julian Hinds Substation. Other recreation uses, wilderness, and parks occur outside the 0.25-mile study area.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Federal/NEPA

Code of Federal Regulations title 40; § 1508.27.
This federal regulation requires that potential impacts be evaluated for significance, as defined and used in NEPA, with consideration given to both context and intensity.

Code of Federal Regulations Title 43; § 1610.5.
This federal regulation requires that the proposed project conform to an approved plan, which in this case is the CDCA.

State/CEQA

Significance criteria are based on the CEQA Guidelines and on performance standards or thresholds adopted by responsible agencies. An impact may be considered significant if the project results in:

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- disruption or division of the physical arrangement of the established community;
- conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses.

A project may also have a significant impact on land use if it would create unmitigated noise, dust, public health hazard or nuisance, traffic, or visual impacts, or when it precludes or unduly restricts existing or planned future uses.

DIRECT/INDIRECT IMPACTS AND MITIGATION

City of Blythe

To determine consistency with the City of Blythe LORS, staff spoke with Jennifer Wellman, Planning Director of the City of Blythe (Wellman 2004). If the City were the permitting agency, to comply with City of Blythe Municipal Code, Chapter 17 (Zoning), Section 10.040 (Building Height), the project would require a height variance for transmission line poles numbered 9 through 17. Staff is sending a letter to Ms. Wellman regarding the findings that the City would make, and the conditions, if any, that the City would place on the project if it were the permitting agency. Should the City require

conditions for LORS compliance, staff will incorporate these conditions into the Final Staff Assessment (FSA) Conditions of Certification.

Riverside County

Staff is communicating with Riverside County regarding the project's conformity with the County's Zoning Ordinance. At this time, staff is not aware of any conflict with the ordinance for the portion of the transmission line located within the County's unincorporated area. However, the project may require a conditional use permit from Riverside County for the modification of the Julian Hinds Substation. On December 2, 2004, Energy Commission staff sent a letter to the Riverside County Planning Director asking whether the County, were it the permitting agency, would grant the use permit and what conditions it would normally attach to this entitlement. At this time, Riverside County has not verified whether the project will require a use permit[1]. In addition to the letter, staff spoke with John Guerin, Riverside County Senior Planner who stated that although the transmission line would not fall under county review, the modification to the substation may require a use permit (Guerin 2004). Should the County require conditions for LORS compliance, staff will incorporate these conditions into the FSA Conditions of Certification.

U.S. Bureau of Land Management

In accordance with Title 43, Code of Federal Regulations §1610.5-3, all actions on public lands must be in conformance with applicable BLM land use plans. Any proposals or actions determined not to be in conformance with these plans would require the approval of a land use plan amendment. As of this writing, the cultural and biological resources staff have stated that the project has the potential for significant unmitigated impacts. Thus, land use staff cannot state that the proposed project is in conformance with the California Desert Conservation Area (CDCA) Plan of 1980, nor can staff conclude that the project is in conformance with Title 43, Code of Federal Regulations §1610.5-3.

In addition, to protect the public interest, BLM must optimize the use of the utility corridor to best accommodate multiple existing and future projects, minimize adverse environmental impacts, and minimize duplication or proliferation of similar facilities. BLM's requirement for minimizing transmission line duplication or proliferation is consistent with the Energy Commission's transmission planning/siting principles. These principles are stated in Transmission System and Right of Way Planning for the 1990s and Beyond (California Energy Commission, March 1992 Pursuant to Senate Bill 2431).

1) The use of existing right of way should be encouraged by upgrading existing transmission facilities where technically and economically feasible.

2) Expansion of existing right of way should be encouraged whenever construction of new transmission lines is required.

[1] In the BEPTL Petition for Post-Certification Amendment (99 AFC-8C), the applicant stated that land use policies related to the siting of transmission line projects in Riverside County are contained within the Public Facilities and Services Element of the Riverside County General Plan. This citation was taken from the 1989 General Plan. In 2003, the county adopted a new General Plan which no longer contains the Public Facilities and Services Element. The 2003 Riverside County General Plan does not contain any regulatory policies on siting transmission lines.

3) New right of way should be created when justified by environmental, technical, or economic reasons, as determined by the appropriate licensing agency.

4) Agreement among all interested utilities should be sought on efficient use of new transmission capacity whenever there is need to construct such capacity.

Chapter 3 of the CDCA (Energy Production and Utility Corridors Element) discusses criteria used in planning land use corridors. The Energy Commission's electricity demand forecasts were fundamental in BLM's criteria formulation. Applicable criteria are as follows:

1) Minimize the number of separate rights-of-way by utilizing existing rights-of-way as a basis for planning corridors; and

2) Encourage joint use of corridors for transmission lines, canals, pipelines, and cables.

Please refer to the **Transmission System Engineering** section of the PSA for a further discussion of Utility Corridor K.

Construction Impacts and Mitigation

Although the proposed project would not disrupt or divide an existing community, the alignment of transmission line power poles numbered 8 through 27 near the Blythe Municipal Airport could present a land use issue. At the November 10, 2004 Informational Hearing and Site Visit the Assistant City Manager/ Airport Manager of the City of Blythe, Mr. Butch Hull, informed staff that the height of the power poles (110 feet) may create a flight path problem if the proposed alignment is allowed. The potential issue of tall structures such as transmission line poles and towers affecting navigable air space is generally addressed by project proponents corresponding with the Federal Aviation Administration (FAA), under the auspices of Title 14 of the Code of Federal Regulations, Part 77. The project owner initiated this process on November 8, 2004 by filing FAA Form 7460-1 Notice of Proposed Construction or Alteration for the proposed Blythe Transmission Line Project. Staff will need to review FAA's resulting Determination of No Hazard to Air Navigation, or an alternative Determination, before it can conclude whether the project will have a significant impact on air traffic safety and, hence land use.

If the FAA states that the proposed power poles need to be realigned to avoid the airport flight path, the poles may be rerouted to parallel an existing transmission line within an irrigated orange grove east of the airport, thus conforming to the guiding principle of expanding the existing right-of-way rather than creating a new right-of-way. If the poles are rerouted, some of the orange trees would need to be removed to accommodate the transmission line and the owner of the grove would need to be compensated for the loss of trees. The irrigated orange grove is considered Prime Farmland by the California Department of Conservation. However, the amount of land in the orange grove that would be converted should the FAA require pole realignment would be less than two acres. Although CEQA does not provide a minimum acreage level for determining a significant impact, staff believes that the potential conversion of two acres or less would not be significant.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

No comments received.

CUMULATIVE IMPACTS AND MITIGATION

The proposed line modification from the Buck to Julian Hinds Substations would be constructed and operated within Utility Corridor K, as designated by BLM CDCA Plan (BLM 1980), and would be adjacent to the existing SCE D-PV1 500-kV line. In addition to the proposed line and the existing SCE Devers line there are two other lines proposed within the BLM corridor: the SCE-proposed Devers-Palo Verde 2; and the proposed Desert Southwest line. For further discussion on proposed and future transmission lines, see the **Alternatives** section of the PSA.

As stated above, to protect the public interest, BLM must optimize the use of the utility corridor to best accommodate multiple existing and future projects, minimize adverse environmental impacts, and minimize duplication or proliferation of similar facilities. BLM recognized the potential for construction of power plants in the area and therefore designated Corridor K based on the potential need for significant “bulk” power transmission lines to import generation from Nevada and Arizona (CDCA). The proposed project will carry only BEP power, does not have the capability to transfer power from Arizona, and is not considered to be a “bulk” power transmission line. Staff believes, given existing and reasonably foreseeable future projects that the Buck to Julian Hinds line may not be an efficient use of BLM’s Utility Corridor K. It may be inconsistent with the purpose of Utility Planning Corridor K in that it would contribute to the proliferation of similar facilities.

Also, BLM must consider the principle of “multiple use” in the management, use, development, and protection of public lands within the CDCA. The "Federal Land Policy and Management Act of 1976," Public Law 94–579, codified at 43 USC Section 1702 (c), defines the principle of "multiple use" in terms of striking a balance between various land uses that takes into account long-term management of resource values, including but not limited to recreation, range, watershed, wildlife, and natural scenic, and historical values.

Thus, the concept of “multiple use” and the overall maintenance of environmental quality are the context for the CDCA management of public lands. In view of the cumulative transmission development proposals in the corridor, the project is incompatible with the policies of the CDCA Plan.

COMPLIANCE WITH LORS

If the requirement for a height variance can be satisfied, the project would comply with applicable City of Blythe LORS. As stated above, staff does not know whether the project will need a conditional use permit from Riverside County. Should Riverside County require some form of LORS compliance, staff, in the Final SA, will propose mitigation for LORS compliance.

In accordance with Title 43, Code of Federal Regulations §1610.5-3, all actions on public lands must be in conformance with applicable BLM land use plans. Any proposals or actions determined not to be in conformance with these plans would require the approval of a land use plan amendment. As of this writing, the cultural and biological resources staff have stated that the project has the potential for significant unmitigated impacts. Thus, land use staff cannot state that the proposed project is in conformance with the California Desert Conservation Area (CDCA) Plan of 1980, nor can staff conclude that the project is in conformance with Title 43, Code of Federal Regulations §1610.5-3.

Transmission engineering staff have stated that the Julian Hinds to Buck Boulevard line may be inconsistent with the purpose of BLM's Utility Planning Corridor K.

CONCLUSIONS

Staff cannot conclude that the proposed project is in conformance with the California Desert Conservation Area (CDCA) Plan of 1980, nor can staff conclude that the project is in conformance with Title 43, Code of Federal Regulations §1610.5-3.

In addition, staff will need to review FAA's resulting Determination of No Hazard to Air Navigation, or an alternative Determination, before it can conclude whether the project will have a significant impact on air traffic safety and, hence land use. Staff also requires verification from the City of Blythe on the findings they would make for the variance and any conditions they would place on the project, and verification from Riverside County regarding the conditional use permit for modifications to Julian Hinds Substation and any conditions they would place on the project were these agencies the permitting agencies for the project. Staff will incorporate in the FSA information from the City of Blythe and Riverside County as Conditions of Certification.

PROPOSED CONDITIONS OF CERTIFICATION

LAND-6 The project owner shall obtain a right-of-way grant from the Bureau of Land Management (BLM).

Verification: At least 30 days prior to the start of construction, the Project Owner shall provide the CPM with proof of completion of the BLM right-of-way grant.

References

Bureau of Land Management. California Desert Conservation Area (CDCA) Plan of 1980, as amended.

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004a. Petition for post certification amendment. Submitted to the Docket on October 12, 2004.

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Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004c. Notice Relating to Data Responses. Submitted to the Docket on November 10, 2004

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004d. Blythe Transmission Line Project – Height Variance. Submitted to the Docket on November 16, 2004.

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California Energy Commission, Sacramento, California. (CEC) 2004b. Issue Resolution & Data Request Workshop Notice. Submitted to the Docket on October 29, 2004.

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NOISE AND VIBRATION

Kevin Robinson and Steve Baker

SUMMARY OF CONCLUSIONS

The Blythe Energy Project Transmission Line Modification, if built and operated in conformance with the proposed Conditions of Certification below, would comply with all applicable noise and vibration LORS, and would produce no significant adverse noise impacts, either direct or cumulative. The applicant has proposed appropriate mitigation, in the form of good design practice and inclusion of necessary project equipment that would avoid any significant adverse impacts.

INTRODUCTION

The construction and operation of any transmission modifications creates noise, or unwanted sound. The character and loudness of this noise, the times of day or night that it is produced, and the proximity of the facilities to sensitive receptors combine to determine whether the facility would meet applicable noise control laws and ordinances, and whether it would cause significant adverse environmental impacts. In some cases, vibration may be produced as a result of transmission line construction practices, such as blasting or pile driving. The ground-borne energy of vibration has the potential to cause structural damage and annoyance.

The purpose of this analysis is to identify and examine the likely noise and vibration impacts from the construction and operation of the Blythe Energy Project Transmission Line Modification (BEPTL), and to recommend procedures to ensure that the resulting noise and vibration impacts would be adequately mitigated to comply with applicable laws, ordinances, regulations and standards (LORS). For an explanation of technical terms employed in this section, please refer to **NOISE Appendix A** immediately following.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

NOISE Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal	
Occupational Safety and Health Administration (OSHA), 29 CFR § 1910.95	Designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time during which the worker is exposed (see NOISE Appendix A, Table A4 immediately following this section). The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.
Federal Transit Administration (FTA)	FTA has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.
State	
California Government Code § 65302(f)	Encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. The Model Community Noise Control Ordinance further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by 5 DBA.
California Occupational Safety and Health Administration (Cal-OSHA), Cal. Code Regs., title 8, §§ 5095-5099	Sets employee noise exposure limits. These standards are equivalent to the federal OSHA standards (see **NOISE Appendix A**, Table A4).
Local	
Riverside County General Plan Noise Element	The noise level standards for new projects, including non-transportation noise sources, employ the Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn). The County Noise Element standards for residential land uses are: Normally Acceptable: CNEL or Ldn up to 60 dB; Conditionally Acceptable: up to 70 dB CNEL or Ldn.
Riverside County Code Chapter 15.04	Construction within one-quarter mile of an occupied residence is prohibited between the hours of 6 p.m. and 6 a.m., except as allowed with the written consent of the building official.

SETTING

The proposed modifications are located almost entirely in areas that have no permanent residents and few activities that generate substantial sustained noise events. The route of the proposed transmission lines would be closest to one isolated residence at 16531 Hobsonway Road near Blythe (approximately 1,280 feet from the proposed transmission line) and the following residential communities: Nicholls Warm Springs (5,000 feet distance), Desert Center (2,500 feet distance), and Hayfield (500 feet distance). The nearest residence at 16531 Hobsonway Road is approximately one mile from the proposed Buck Substation site. At the Midpoint Substation site there are no residences or sensitive receptors within two miles, and at the Julian Hinds Substation site the nearest residences in Hayfield are approximately 2,500 feet from the site and somewhat screened by intervening terrain (BLYTHE 2004a, AFC § 5.8.2.2). Therefore, the area surrounding the project site is a sparsely developed corridor with few sensitive receptors.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in:

1. exposure of persons to, or generation of, noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;
2. exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
3. substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
4. substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Energy Commission staff, in applying item 3) above to the analysis of this and other projects, has concluded that a potential for a significant noise impact exists where the noise of the project plus the background exceeds the background by 5 dBA L_{90} or more at the nearest sensitive receptor.

Staff considers it reasonable to assume that an increase in background noise levels up to 5 dBA in a residential setting is insignificant; an increase of more than 10 dBA is clearly significant. An increase between 5 and 10 dBA should be considered adverse,

but may be either significant or insignificant, depending on the particular circumstances of a case.

Factors to be considered in determining the significance of an adverse impact as defined above include:

1. the resulting noise level [1];
2. the duration and frequency of the noise;
3. the number of people affected;
4. the land use designation of the affected receptor sites; and
5. public concern or controversy as demonstrated at workshops or hearings, or by correspondence.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

- the construction activity is temporary;
- use of heavy equipment and noisy activities is limited to daytime hours; and
- all industry-standard noise abatement measures are implemented for noise-producing equipment.

DIRECT IMPACTS AND MITIGATION

Noise impacts associated with the project can be created by short-term construction activities, and by normal long-term operation of the Transmission Line Project.

Construction Impacts and Mitigation

Construction noise is usually considered a temporary phenomenon. Construction of the BEPTL is expected to last approximately 12 months (BLYTHE 2004a, AFC § 3.2.8, Table 3.2-6).

Compliance with LORS

Construction of an industrial facility such as a power plant is typically noisier than permissible under usual noise ordinances. Sensitive receptors near the linear facilities could be affected by noise from these activities. However, construction of linear facilities typically moves along at a rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. In order to allow the construction of new facilities, construction noise during certain hours is commonly exempt from enforcement by local ordinances. Riverside County regulates the permissible hours of construction, but does not have any specific noise limits during those hours.

[1] For example, a noise level of 40 dBA would be considered quiet in many locations. A noise limit of 40 dBA would be consistent with the recommendations of the California Model Community Noise Control Ordinance for rural environments, and with industrial noise regulations adopted by European jurisdictions. If the project would create an increase in ambient noise no greater than 10 dBA at nearby sensitive receptors, and the resulting noise level would be 40 dBA or less, the project noise level would likely be insignificant.

Further, Chapter 15.04.020 subsection (F)(1) of the County of Riverside General Regulations limits the hours of noisy construction activities to between 6 a.m. and 6 p.m. whenever a construction site is within one-quarter mile of an occupied residence or residences. Exceptions to these standards shall be allowed only with the written consent of the building official.

To ensure compliance with these restrictions, staff proposes Condition of Certification **NOISE-4**.

The applicant has predicted construction noise levels; they are summarized here in **NOISE Table 2**.

NOISE Table 2:
Predicted Construction Noise Levels

Receptor/Distance (feet)	Highest Noise Level (dBA L_{eq})
50	91
100	85
500	71
1,000	65
2,500	57
5,000	51

Source: BLYTHE 2004a, AFC Table 5.8-3

The applicant commits to performing noisy construction work during daytime hours between 7 a.m. and 7 p.m., except for those areas where local conditions or traffic considerations dictate otherwise; in which case, working hours would be revised to be consistent with local requirements or adopted mitigation measures for the project (BLYTHE 2004a, AFC § 3.2.8). Once noisy construction comes within one-quarter mile of an occupied residence or other sensitive receptor, the daytime work hours must change to 6 a.m. to 6 p.m. to meet local LORS, unless written consent of the Chief Building Official for this alternative schedule is obtained. Staff believes that this work schedule will not cause a potential significant noise impact due to the lack of sensitive receptors in proximity to the project.

This would satisfy the requirement of Chapter 15.04.020 subsection (F)(1). To ensure that these hours are, in fact, adhered to, staff proposes Condition of Certification **NOISE-4**.

The applicant has stated that blasting is not anticipated, but it may be required in isolated instances for construction of pole foundations. Blasting that may be necessary during transmission line construction could create a nuisance at sensitive receptors within proximity to such activities. Rocky areas are the most likely location where blasting would occur, most likely on the Buck to Julian Hinds transmission line route. No residential or other sensitive receptors are located in these areas. If it does occur, blasting would be of short duration, probably less than one or two days at any specific location, therefore noise impacts are not expected to be significant. Blasting impacts would be further mitigated by establishing limits on the time of day of blasting and by preparing a blasting plan for review and approval by the Bureau of Land Management

(BLYTHE 2004a, AFC § 5.8.2.2). Staff believes that should blasting become necessary, it would be performed in compliance with applicable LORS.

In the event that actual construction noise should annoy nearby workers or residents, Staff proposes Conditions of Certification **NOISE-1** and **NOISE-2**, which would establish a Noise Complaint Process that requires the applicant to resolve any problems caused by construction noise. However, Staff believes that construction of linear facilities typically moves along at a rapid pace, thus not subjecting any one receptor to significant noise impacts for more than two or three days.

Worker Effects

The applicant has acknowledged the need to protect construction workers from overexposure to occupational noise hazards, and has recognized a Hearing Conservation Program and Personal Protective Equipment Program to protect construction workers (BLYTHE 2004a, AFC § 5.13.2, Table 5.13-1). To ensure that construction workers are, in fact, adequately protected, staff has proposed Condition of Certification **NOISE-3**.

Operation Impacts and Mitigation

Operational noise would include noise emitted by project facilities, such as humming and hissing, and noise from activities associated with maintenance. Humming noise from the transmission lines is estimated at approximately 44 dBA directly under a transmission line during inclement weather and about 20 dB during fair weather. These noise levels are very low and would not likely be audible away from the right-of-way (BLYTHE 2004a, AFC § 5.8.2.3). The nearest residences are in Hayfield approximately 500 feet from the transmission line and operational noise would be inaudible at that distance (BLYTHE 2004a, AFC §5.8.2.2). Therefore, Staff considers this impact less than significant.

Operational noise at the Buck Substation and Julian Hinds Substation would not be perceptibly different than current operations. At the Midpoint Substation site there are no residences or sensitive receptors within two miles, therefore no operational noise impacts are expected.

CUMULATIVE IMPACTS AND MITIGATION

The only other noise source of which Staff is aware that is near enough to the BEPTL to hold the potential for significant cumulative noise impacts is the Blythe Energy Project (see the **Land Use** portion of this document). Since the Transmission Line Project noise levels are very low and would not likely be audible away from the right-of-way, it would be highly unusual for the noise from these two projects to combine to produce significant cumulative noise impacts.

Given the sparsely developed nature of the corridor, and no significant direct impacts from the project, staff deems it unlikely that the Transmission Line project would produce significant cumulative noise impacts.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit, the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would follow the existing D-VP power line path through an existing right-of-way in an orange grove.

ALTERNATIVE ROUTE EVALUATION

Since the proposed realignment of transmission line power poles near the Blythe Municipal Airport is no closer to previously discussed sensitive noise receptors and there are no other new sensitive receptors in this area, Staff believes that this alternate will not create any significant cumulative noise impacts.

RESPONSE TO PUBLIC COMMENTS

No comments received.

NOTEWORTHY PUBLIC BENEFITS

The noise from a Transmission Line project such as Blythe, in itself, could not be deemed a benefit. However, the provision of electric power transmission within the County of Riverside while avoiding the creation of significant adverse noise impacts must be considered a benefit.

CONCLUSIONS

The Blythe Energy Project Transmission Line Modification, if built and operated in conformance with the proposed Conditions of Certification below, would comply with all applicable noise and vibration LORS, and would produce no significant adverse noise impacts, either direct or cumulative. Given the sparsely developed nature of the corridor, and no significant direct impacts from the project, staff deems it unlikely that the Transmission Line project would produce significant cumulative noise impacts.

PROPOSED CONDITIONS OF CERTIFICATION

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;

- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within ~~30~~five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form~~, or similar instrument approved by the CPM with the City of Blythe (or applicable Agency), and with the CPM~~with the local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a ~~30~~3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

CONSTRUCTION TIME RESTRICTIONS

NOISE-8 Noisy construction ~~work (that which causes off-site annoyance, as exidenced by the filing of a legitimate noise complaint)~~within one-quarter mile of an occupied residence shall be restricted to the times of day delineated below, except as allowed with the written consent of the building official:

~~High-pressure steam blows~~Any day: ~~8~~6 a.m. to ~~5~~6 p.m.
~~Other noisy work: According to City of Blythe Regulations and Riverside County Ordinance 457.90~~

Verification: Prior to ground disturbance, ~~T~~the project owner shall transmit to the CPM ~~in the first Monthly Construction Report~~ a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Blythe Transmission Line Project
(99-AFC-8c)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____
Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____
Date installation completed: _____
Date first letter sent to complainant: _____ (copy attached)
Date final letter sent to complainant: _____ (copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

(Attach additional pages and supporting documentation, as required).

REFERENCES

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004a. Petition for post certification amendment. Submitted to the Docket on October 12, 2004.

County of Riverside. Noise Element of the Riverside County General Plan.

County of Riverside. Chapter 15.04 of the Riverside County Code.

NOISE APPENDIX A
FUNDAMENTAL CONCEPTS OF COMMUNITY NOISE

To describe noise environments and to assess impacts on noise sensitive area, a frequency weighting measure, which simulates human perception, is customarily used. It has been found that A-weighting of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. **Noise Table A1** provides a description of technical terms related to noise.

Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (L_{eq}), or by average day and night A-weighted sound levels with a nighttime weighting of 10 dBA (L_{dn}). Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Outdoor day-night sound levels vary over 50 dBA depending on the specific type of land use. Typical L_{dn} values might be 35 dBA for a wilderness area, 50 dBA for a small town or wooded residential area, 65 to 75 dBA for a major metropolis downtown (e.g., San Francisco), and 80 to 85 dBA near a freeway or airport. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be levels of noise adverse to public health.

Various environments can be characterized by noise levels that are generally considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are subject to nighttime noise, which does not decrease relative to daytime levels, are often considered objectionable. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (Effects of Noise on People, U.S. Environmental Protection Agency, December 31,1971).

In order to help the reader understand the concept of noise in decibels (dBA), **Noise Table A2** has been provided to illustrate common noises and their associated sound levels, in dBA.

Noise Table A1 Definition of Some Technical Terms Related to Noise	
Terms	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a Sound Level Meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L_{10}, L_{50}, & L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the Noise Level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: Guidelines for the Preparation and Content of Noise Elements of the General Plan, Model Community Noise Control Ordinance, California Department of Health Services 1976, 1977.

Noise Table A2 Typical Environmental and Industry Sound Levels			
Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Handbook of Noise Measurement, Arnold P.G. Peterson, 1980

Subjective Response to Noise

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new

noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.
With regard to increases in A-weighted noise levels, knowledge of the following relationships can be helpful in understanding the significance of human exposure to noise.

1 Except under special conditions, a change in sound level of one dB cannot be perceived.

2 Outside of the laboratory, a three dB change is considered a barely noticeable difference.

3 A change in level of at least five dB is required before any noticeable change in community response would be expected.

4 A ten dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response. (Kryter, Karl D., The Effects of Noise on Man, 1970)

Combination of Sound Levels

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a three dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus three dB). The rules for decibel addition used in community noise prediction are:

Noise Table A3
Addition of Decibel Values

When two decibel values differ by:	Add the following amount to the larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0
Figures in this table are accurate to ± 1 dB.	

Source: Architectural Acoustics, M. David Egan, 1988

Sound and Distance

Doubling the distance from a noise source reduces the sound pressure level by six dB.

Increasing the distance from a noise source 10 times reduces the sound pressure level by 20 dB.

Worker Protection

OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed:

Noise Table A4
OSHA Worker Noise Exposure Standards

Duration of Noise (Hrs/day)	A-Weighted Noise Level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 C.F.R. § 1910.95

SOCIOECONOMICS

Joseph Diamond

SUMMARY OF CONCLUSIONS

The Blythe Energy Project Transmission Line Modification (BEPTL) will require a short construction period of twelve to eighteen months. It uses largely local labor and will not create any significant negative socioeconomic impacts on the areas schools, housing, law enforcement, emergency services, hospitals, or utilities. Public benefits from the construction of the project include, construction payroll, value of purchase materials and supplies, sales and property taxes.

INTRODUCTION

The California Energy Commission staff socioeconomics impact analysis evaluates the project induced changes on community services and/or infrastructure and related community issues such as Environmental Justice (EJ). Staff discusses the estimated impacts of the construction and operation of the BEPTL on local communities, community resources, and public services.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

California Government Code, Sections 65996-65997

These sections include provisions for school district levies against development projects. As amended by SB 50 (Stats. 1998, ch. 407, sec. 23), these sections state that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.

SETTING

The BEPTL would be located in eastern Riverside County in Southern California. Affected communities include Hayfield, Desert Center, Mesa Verde and Blythe.

DIRECT IMPACTS AND MITIGATION

Population And Employment

The proposed BEPTL will require twelve to eighteen months for construction, average 60 workers on-site, and require a maximum of 162 workers during the peak month of construction (BLYTHE 2004a. and BLYTHE 2004e.). Furthermore, the proposed BEPTL construction workforce is small compared to Riverside County workforce of 52,500 in 2001 and expected to grow to 79,100 in 2008, this is a change of 50.7 percent (California Employment Development Division 2004). To construct the project will require the following types of workers: carpenters, electricians, steel and cement workers, laborers, equipment operators, pipe fitters and others Table 1-Available Labor By Skill in Riverside County provides an indication of the Riverside County labor pool.

Hence, very few workers are expected to relocate to the project area since construction workers can generally commute two hours one-way to work from within Riverside County. Those workers that do relocate during construction will probability not bring their families. Hence, the applicant and staff agree that most construction workers will come from Riverside County. No population is expected to be displaced by the project. Finally, the proposed BEPTL will not affect the operations workforce for the Blythe Energy Project (BEP) power plant (BLYTHE 2004a.).

Table 1
Available Labor by Skill in Riverside County

Occupational Title	2004
Carpenters	11,130
Masons and Related Workers	2,130
Painters and Related Workers	1,540
Sheet Metal Workers	2,180
Electricians	3,110
Welders	1,270
Industrial Truck Operator	3,010
Construction Operating Engineers	1,860
Construction Labors	5,560
Pipe fitters, Plumbers	1,860
Mechanical Engineers	430
Electrical Engineers	260
Civil Engineers	800

Source: California Employment Development Department (2004).

Housing

According to federal standards, permanent housing is considered to be in short supply if the vacancy rate is less than five percent (URS 2000). Staff does not expect any housing to be displaced from this project. Sufficient vacant housing exists. As of January 1, 2004, there were approximately 659,795 total housing units in Riverside County, with a vacancy rate of 13.3 percent. For the city of Blythe, there were 5,171 total housing units with a vacancy rate of 16.1 percent (California Department of Finance 2004). The Blythe area has approximately 23 motels with 1,100 rooms, 300 mobile home spaces, over 600 RV spaces, and additional apartments and condominiums (BLYTHE 2004a.). Again, most of the construction workforce will come from Riverside County. There is adequate supply of motel space to accommodate those workers who may relocate (most likely on a week-to-week basis).

Fiscal and Non-Fiscal

Information in this section was requested in a Data Request. The Data Response indicated that the information will be provided upon SCE completion of facilities studies for each of the transmission line components.

Some fiscal impacts of the BEPTL are:

- Annual property taxes: Not available at this time.
- Construction sales tax: Not available at this time.
  Non-fiscal impacts include:
- The total value of the projects is estimated to be $50 million.
- The construction payroll is: Not Available at this time.
- Value of construction and operation equipment and materials is: Not available at this time.

Public Services

Education

There will be a small number of in-migration construction workers taking temporary housing and they are not likely to bring their families. Most construction workers will commute. Operation of the substations will not require any addition to the current workforce so the Palo Verde Unified School District will not be affected by construction and operation of the project. The Palo Verde Unified School District levies an impact fee of $0.31 per square foot per new construction of commercial/industrial buildings. There is no school impact fee associated with the project since there are no new commercial or industrial buildings associated with the proposed BEPTL (BLYTHE 2004a.).

Education Code section 17620 states that public agencies may not impose fees, charges or other financial requirements to offset the cost for “school facilities”. School facilities are defined as “any school-related consideration relating to a school district’s ability to accommodate enrollment.” Local and state agencies are precluded from imposing (additional) fees or other required payments on development projects for the purpose of mitigating possible enrollment impacts to schools.

Law Enforcement

Five miles from the power plant and Buck Substation is the Blythe Police Department Station which has 25 law enforcement officers. The Blythe Police Department estimates that emergency response to the Buck Substation would be three minutes and seven minutes for non-emergency response (BLYTHE 2004a.).

Cooperative agreements by the City of Blythe with other law enforcement agencies exist. There is an agreement with the Riverside County Sheriff’s Department in Blythe about five miles from the site that has 18 sworn officers with emergency capability in the general Palo Verde Valley. The response time to the Buck Substation site would be ten minutes. Finally, the California Highway Patrol station in Blythe is about five miles from the Buck Substation (BLYTHE 2004a.).

Construction and operation of the BEPTL would not result in significant demands on law enforcement.

Public Utilities

This project is to provide transmission access for BEP which is owned by Florida Power and Light as a merchant plant. The power will be sold on the wholesale market. BEPTL may be owned by Southern California Edison or Western Area Power Administration (WAPA). The BEPTL will not require any public services such as water or waste disposal; therefore these services will not be affected by the BEPTL.

Medical Services

The Blythe Ambulance Service would provide emergency medical service. Ambulance response time to the Buck Substation site would be from seven to ten minutes. Longer response times would occur to reach other parts of the proposed transmission line. The nearest hospital is Palo Verde Hospital in Blythe which is about five miles from the Buck Substation.

Helicopter Emergency Service (EMS) can be activated using the appropriate protocol by the Blythe Ambulance Service or AMR Ambulance Service (fifty miles west). Patients are sent to Palm Springs Desert Hospital (Watkins ROC 2004).

DEMOGRAPHIC SCREENING

The purpose of an environmental justice screening analysis is to determine whether a low-income and/or minority population exists within the potentially affected area of the proposed site. Staff conducts screening analyses in accordance with the “Final Guidance for Incorporating Environmental Justice Concerns in [the Environmental Protection Agencies’] EPA’s [National Environmental Policy Act] NEPA Compliance Analysis,” Guidance Document (EPA 1998). Minority populations, as defined by this Guidance Document, are identified where either:

- the minority population of the affected area is greater than fifty percent of the affected area’s general population; or
- the minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- one or more census blocks in the affected area have a minority population greater than fifty percent.

In 1997, the President’s Council on Environmental Quality issued Environmental Justice Guidance that defines minority as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic. Low-income populations are identified with the annual statistical poverty thresholds from the Bureau of the Census’s Current Population Reports, Series P-60 on Income and Poverty (OMB 1978).

Because of the linear nature of the proposed 74-mile transmission line addition to the BEP, and the sparsity of residential housing along the proposed route, staff chose to do its demographic screening in a different manner than is done for power plants. Staff conducted a windshield survey along the route to identify any housing within 0.25-mile of the proposed transmission line. Based on that information, Census Block information

is provided for the only area along the route that contains a cluster of houses within the 0.25-mile range. For transmission lines, staff has established a 0.25–mile distance on each side as the area to review for demographic screening. In general, staff believes that this distance puts residents outside the range of potential adverse impacts from transmission lines.

On October 19, 2004, Energy Commission staff members Eric Knight and David Flores conducted a windshield survey of residences within 0.25-mile of the proposed 74-mile transmission line project. This survey determined the following:

- The community of Hayfield, located adjacent to the Julian Hinds Substation has approximately eight homes and various recreational structures. An existing transmission line is approximately 1,000 feet north of the existing community, and the proposed transmission line will be placed within a proposed 100-foot dedicated right-of-way adjacent to the existing transmission corridor, closer to the residences. The community of Hayfield was established for the employees and their families who are employed to maintain the State of California water pumping station that provides water to the Los Angeles basin.

- There is also one residence located approximately 0.25-mile west of the proposed transmission line in the vicinity of the community of Blythe. This residence is approximately 0.5-mile west of the existing Blythe power plant site.

Based on 2000 Census data, the community of Hayfield is within three Census Blocks (5305, 5306 and 5307) which have the following population breakdown:

White, Not Hispanic:	17
Total Population:	22
Percent Minority:	22.7 percent

Staff also reviewed Census Block Group data (the smallest unit to collect poverty data) and found the poverty status individuals are 51 of 546 or 9 percent of the population. By Census Tract, below poverty status is 503 of 2,345 or 21 percent of the population.

The nine residences are the only population within 0.25-mile of the proposed transmission line. Staff has determined that the population potentially affected by the proposed transmission line project has a minority and low-income population of less than fifty percent. The proposed BEPTL does not result in any significant adverse socioeconomic impacts, and it does not break-up any communities.

CUMULATIVE IMPACT

Cumulative impacts might occur when more than one project has an overlapping construction schedule that creates a demand for workers that can not be met by local labor, resulting in an influx of non-local workers and their dependents.

Again, the BEPTL will average 60 workers per month and 162 during the peak month with a yet to be determined starting and ending dates for twelve-to-eighteen months.

Other projects planned in Riverside County in addition to BEPTL are:

- an ongoing Capital Improvement Project at the City (Riverside)-owned Waste Water Treatment Plant

- the Riverside Energy Resource Center (RERC) which would tentatively begin construction in late 2004 and with completion in July 2005. This is a nine-month project with an average workforce of 41 and 53 workers during the sixth (peak) month of construction. The project was approved at the Commission Business Meeting on December 15, 2004

- Inland Empire Project (670 MWs Riverside County) Approved project but there is an unknown starting date.

- Inland Empire Modification (130 MWs Riverside County) There is an estimated filing date of second quarter 2005.

- AES Riverside Peaker (300 MWs Riverside County) There is an estimated filing date of second quarter 2005.

Overall, the Riverside County construction labor market is sufficiently large (52,500 in 2001 and 79,100 in 2008) to absorb a large part of the needed manpower for the BEPTL construction. Therefore, there are no significant adverse socioeconomic cumulative impacts.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would follow the existing D-VP power line path through an existing ROW in an orange grove. The following is staff's evaluation of the City of Blythe's proposed alternative route.

ALTERNATIVE ROUTE EVALUATION

The proposed realignment of transmission line power poles near the Blythe Municipal Airport which involves two acres and would be compensated does not create any socioeconomic issues or significant impacts.

NOTEWORTHY PUBLIC BENEFITS

Important public benefits discussed under the fiscal and non-fiscal section are: annual property taxes, construction sales tax, construction payroll, and the value of construction and operation equipment and materials .

CONCLUSIONS

Estimated gross public benefits from the BEPTL include increases in sales taxes, employment, and income for Riverside County. For example, there are estimated to be 60 average direct project-related construction jobs for the twelve-to-eighteen months of construction. The estimated total sales tax during construction and operation, construction payroll, and the value of construction and operation equipment and materials are not available at this time, but will be provided following completion of the SCE interconnection study.

Staff concludes that the BEPTL will not cause a significant adverse socioeconomic impact on the study area's housing, schools, law enforcement, emergency services, hospitals, and utilities.

SOCIOECONOMIC DATA AND INFORMATION - TABLE 2[1]	
Project Capital Costs	$50 million
Estimate of Locally Purchased Equipment and Materials	
Construction	Not available at this time.
Operation	Not available at this time.
Estimated Annual Property Taxes	Not available at this time.
Estimated School Impact Fees	N/A
Direct Employment	
Construction (average)	60 jobs
Operation	N/A
Secondary Employment	
Construction	N/A
Operation	N/A
Direct Income	
Construction	N/A
Operation	N/A
Secondary Income	
Construction	N/A
Operation	N/A
Payroll	
Construction	Not available at this time.
Operation	N/A
Estimated Sales Taxes	
Construction	Not available at this time.
Operation	Not available at this time.
Existing /Projected Unemployment Rates	Existing – 6.1 percent in September 2004 (preliminary), not seasonally adjusted for Riverside County. Projected - Not available.
Percent Minority Population (6 mile radius)	N/A But based on the 2000 Census the community of Hayfield is within three Census Blocks (5305, 5306 and 5307) and has 22.7 percent.
Percent Poverty Population (6 mile radius)	N/A But Census Block Group (06 065 0458.00 5) has 9 percent of the population and Census Tract (06 065 0458.00) has 21 percent of the population.

[1] Table 2 year for dollars for construction and operations is information that will not be available until completion of SCE's transmission line interconnection study. Construction is for twelve-to-eighteen months, and project life planned for 50 years. Economic (non-fiscal and fiscal) impacts, unemployment, and population information are for Riverside County.

REFERENCES

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004a. Petition for post certification amendment. Submitted to the Docket on October 12, 2004.

Blythe Energy, LLC, Blythe, California. (BLYTHE) 2004e. Data Responses Nos. 1-99. Submitted to the Docket on December 1, 2004.

California Department of Finance (CDOF), Demographic Research Unit. 2004. (http://www.dof.ca.gov/html/Demograp/druhpar.htm

California Employment Development Department (EDD). 2004. (http://www.calmis.cahwnet.gov/file/1fmonth/rive$pr.txt)

URS (Huntington Beach Project). Application for Certification, Huntington Beach Generating Project (00-AFC-13). Submitted to the California Energy Commission, December 1, 2000.

Watkins, Leslie. 2004. Staff at Blythe Ambulance Service. Telephone Conversation with Dr. Joseph Diamond (California Energy Commission), October 21.

SOIL AND WATER RESOURCES

John Kessler and Richard Sapudar

SUMMARY OF CONCLUSIONS

At this time staff continues to work with the applicant on the identified outstanding issues, and concludes that upon their resolution there will be no significant adverse impacts to soil and water resources as a result of the proposed Blythe Energy Project Transmission Line. Staff believes that the BEPTL project will comply with all applicable LORS. Staff's final determination will be dependent on the applicant's response to issues identified herein with the draft Drainage, Erosion and Sedimentation Control /Stormwater Pollution Prevention Plan (DESC/SWPPP) and evaluation of comments received during the review of this PSA from the City of Blythe, Riverside County, Western Area Power Administration, U.S. Bureau of Land Management, the Colorado River Regional Water Quality Control Board, and other responsible agencies and/or parties.

Where actual or potential impacts are identified, staff has recommended either elimination of the impact or mitigation measures to reduce the significance of the impact and, as appropriate, has recommended conditions of certification.

INTRODUCTION

In this section staff analyzes the potential effects of the Blythe Energy Project Transmission Line (BEPTL) on soil and water resources. The analysis specifically focuses on the potential for the project to:

- Accelerate wind or water erosion and sedimentation;
- Exacerbate flood conditions in the vicinity of the project;
- Adversely affect surface or groundwater supplies;
- Degrade surface or groundwater quality; and
- Comply with all applicable laws, ordinances, regulations and standards.

The primary issue identified by staff in this analysis is the sufficiency of Best Management Practices (BMPs) for preventing erosion and sediment transport/deposition of soils characterized as having a high potential for erosion. Although the project area does not receive much precipitation, many of the transmission towers will be located in ephemeral drainages, which are normally dry washes, but can flow water during periods of intense precipitation. Both water and wind establish a mechanism for erosion and sediment transport. During construction, the affected soils are more vulnerable to erosion due to removal of vegetation and topsoil, and grading and excavation activities. The proper application of various temporary BMPs, coordinated progressively with each step of construction for both the transmission line and substation components, is essential to avoid significant adverse impacts to soil and water resources. Upon completion of construction, the proper application of various

permanent BMPs to all project components is essential to avoid significant adverse impacts to soil and water resources during project operation.

Staff believes the applicant is working diligently to identify site-specific drainage, erosion and sediment transport/deposition issues within the project area, and to plan the application of proper temporary BMPs during construction and permanent BMPs during project operation. The applicant has established its initial plans by preparing a draft Drainage, Erosion and Sedimentation Control / Storm Water Pollution Prevention Plan (DESC/SWPPP) for the transmission line and substation components. Staff has reviewed the draft DESC/SWPPP, and although we have identified a number of issues where the DESC/SWPPP needs to provide more detailed planning, staff believes its specific comments as summarized in this preliminary staff assessment (PSA) will lead the applicant to adequately address these more significant issues before preparation of the final SA/EA.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

SOIL and WATER Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Federal LORS	
Clean Water Act (33 U.S.C. Section 1257 et seq.)	The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality, which includes regulation of storm water discharges during construction and operation of a facility. These are normally addressed through a general National Pollutant Discharge Elimination System (NPDES) permit. For the BEPTL, regulation of water quality is administered by the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB).
Section 404 Permit to Place or Discharge Dredged or Fill Material	Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States, including rivers, streams and wetlands. The Army Corps of Engineers (ACOE) issues site-specific or general (nationwide) permits for such discharges.
Section 401 Water Quality Certification	Section 401 of the Clean Water Act provides for state certification that federal permits allowing discharge of dredged or fill material into waters of the United States will not violate federal and state water quality standards. These certifications are issued by the RWQCBs. Proposed linear facilities can also cross ephemeral drainages that are considered waters of the United States.
Resource Conservation and Recovery Act	The Resource Conservation Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
Reclamation Reform Act of 1982	Allows for the management, development, and protection of water and related resources by the Bureau of Reclamation.
Access Road Use Plan	The Bureau of Land Management (BLM) requires the applicant to prepare an Access Road Use Plan to address use of existing roads on BLM managed lands and mitigate any potential impacts.
State LORS	
California Constitution, Article X, Section 2	This section requires that the water resources of the State be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use, or unreasonable method of use of water is prohibited.
The Porter-Cologne Water Quality Control Act of 1967, Water Code Section	Requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. In addition, discharges to land for the protection of surface and groundwater are regulated

13000 et seq.	under Title 23, California Code of Regulations, Chapter 15, Division 3. These regulations require that the RWQCB issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
California Water Code Section 100	Requires the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.
California Water Code Section 100.5	Declares to be the established policy of the State that conformity of a use, method of use, or method of diversion of water with local custom shall not be solely determinative of its reasonableness, but shall be considered as one factor to be weighed in the determination of the reasonableness of the use, method of use, or method of diversion of water, within the meaning of Article X, Section 2 of the California Constitution.
California Water Code Section 13146	Requires that state offices, departments and boards in carrying out activities which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the State Water Resources Control Board in writing their authority for not complying with such policy.
California Water Code Section 13247	Requires that state offices, departments, and boards, in carrying out activities which may affect water quality, shall comply with water quality control plans (i.e., Basin Plans) approved or adopted by the State Water Resources Control Board unless otherwise directed or authorized by statute, in which case they shall indicate to the appropriate Regional Water Quality Control Boards in writing their authority for not complying with such plans.
State Policies, Acts, and Orders	
SWRCB Resolution 88-63	The Regional Water Quality Control Boards (Regional Boards) shall assure that the beneficial uses of municipal and domestic supply (MUN) are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation. All surface and groundwaters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards with the exception of certain defined surface and groundwaters suitable for exception as a source of drinking water.
SWRCB Resolution 77-1	State Water Resources Control Board Resolution 77-1 encourages and promotes reclaimed water use for non-potable purposes.
SWRCB Resolution 68-16	This resolution (the “Anti-Degradation Policy”) declares that it is the State’s policy for maintaining existing high quality waters to the maximum extent possible. The existing high water quality must be maintained until demonstrated to the State that any proposed change will be consistent with the maximum benefit to the people of the state and will not unreasonably affect present or future beneficial uses.
SWRCB Water Quality Order 92-08	Requires the SWRCB to regulate industrial stormwater discharge from construction projects affecting areas greater than 1 acre to protect state waters. Under Order 92-08 the Colorado River Basin RWQCB will issue NPDES permits for construction activities based upon an acceptable Storm Water Pollution Prevention Plan (SWPPP) submitted by the applicant.
Recycling Act of 1991	States that retail water suppliers, reclaimed water producers, and wholesalers should promote the substitution of reclaimed water for potable and imported water in order to maximize the appropriate cost-effective use of reclaimed water in California.
Local LORS	

Riverside County	General Plan Water Quality Objective Number 1 maintains jurisdiction over nonpoint sources of water pollution including runoff from developed or urban areas, grading, construction, and agricultural activities.
Riverside County	Has adopted ordinances, goals, and objectives through the Riverside County General Plan related to development in productive agricultural areas. Agricultural objectives are intended to encourage agriculturally productive lands to remain in agriculture and to discourage incompatible urban development adjacent to agricultural lands.
Riverside County	Grading Ordinance 457 regulates grading and trenching to minimize soil erosion and ensure soil conservation.
Riverside County	Environmental Hazards and Resources goals encourage the preservation and growth of agriculture while allowing agricultural land to phase into other land uses.
City of Blythe	The City has adopted a number of policies and goals related to water resources in the City's General Plan. Water resources goals and policies are intended to promote wise utilization of the Palo Verde Valley's domestic, agricultural, and potable water sources and to encourage water conserving designs and technology to protect the Valley's vital water resources.
City of Blythe	The City has also adopted water resources policies intended to protect the quality of the Valley's water resources from potential sources of contamination, as well as requiring mitigation for significant impacts to water quality and quantity.
City of Blythe	The City requires developments on the Mesa to submit an erosion control plan for review and approval by City.

SETTING

The Setting and Environment are discussed in context with the construction and operation activities associated with the proposed BEPTL. Therefore, a brief description of the proposed construction and operation activities is first summarized below. See the Project Description for more detail.

Project Design, Construction, and Operation

Construction Activities

The BEPTL Modification and expansion activities will involve the following general components:

- Preparation of staging and laydown areas.
- Access road and spur road construction and improvement.
- Clearing and grading of pole sites.
- Foundation preparation and installation of poles.
- Conductor installation.
- Cleanup and site reclamation.

ENVIRONMENT

Climate, Topography, and Precipitation

The site is located entirely within the Mojave desert where mountainous areas typically have steep slopes, shallow soils, with the washes (drainages), streambeds and floodplains subject to high flows, flash floods, and significant erosion during intense rainfall events. Furthermore, there are several sensitive environmental areas traversed by the transmission line projects(s).

The region is characterized by hot summers, mild winters, infrequent rainfall, variable winds, and very low humidity. The average maximum temperatures vary from 109°F in the summer to 67°F in the winter, with temperatures below freezing infrequent.

The Mojave Desert is a transitional zone between the hot Sonoran Desert to the south and the cooler and higher Great Basin Desert to the North, and has an area greater than 25,000 square miles. Precipitation in this area is low and ranges from about 2.5 to 5.5 inches per year. There are two rainy periods consisting of October through March, and the monsoon season of late July through September, with over half the precipitation falling between November and February. By April a strong high-pressure ridge begins to build over the Pacific Ocean and storm activity ceases almost entirely until late fall. Between April and September, dry, hot weather predominates with occasional heavy thunderstorms between July and September. Monsoon associated rainfall can be intense and may result in flash flood events.

Mountainous areas receive the greatest precipitation, with the steep slopes and shallow soils resulting in rapid runoff into the drainages and valleys. The valleys contain thick alluvial deposits washed down from the mountains, where surface flows infiltrate and provide minor recharge to groundwater basins (BEPTL 2004).

Soils

Soils crossed by the proposed project include sandy loams, silty clay loams, silty clays, gravelly loamy sands, gravelly sands, sand, and dune soils. In the Palo Verde Valley the soils are primarily formed in sediments deposited by the Colorado River. These soils are highly productive and are ideal for agricultural use due to their mineral content. The NRCS classifies the following soil types in the area as prime farmland:

- Aco gravelly loamy sand
- Aco sandy loam
- Orita gravelly fine sandy loam
- Rositas fine sand on zero to 2 percent slopes

Soil related issues in the project area include a high potential for wind and water erosion, compaction, and shallow depth to bedrock. While soils with high compaction potentials will not be crossed in the project area, there is a high potential for wind and water erosion.

Land Disturbance

The construction and permanent disturbance area for all project features is provided in **SOIL and WATER Table 2**.

SOIL and WATER Table 2
Land Disturbance for All Project Features

Feature	Quantity	Disturbance Area	Construction Disturbance (acres)	Permanent Disturbance (acres)	Total
Crossing Structures	14	95'x100'	3.05	0.0	3.05
Crane Pad, Spur Road & Turning Radius (Poles 1-57)	57	25' x 25'	0.82	0.0	0.82
Pole Pad Construction Area	438	50'x50'	25.14	0.24	25.37
Crane Pad for Tower Erection	381	23' x 165'	33.19	0.0	33.19
Truck Turning Radius (390 Poles)	390	0.1 acre	39.0	0.0	39.0
Pull Stringing Setups	36	50' x 140'	5.79	0.0	5.79
Splicing Setups	23	95' x 200'	10.03	0.0	10.03
New Access Roads	0	14' wide	N/A	1.14	1.14
Access Road Improvement (MP 3.5 – 7.0)		2' widening	N/A	0.85	0.85
Access Road Improvement (MP 7.0 – 67.4)		4' widening	N/A	30.98	30.98
Spur Roads	381	173' x 12'	N/A	18.16	18.16
Radius from access road to spur road	0	4315 sq ft	N/A	39.0	39.0
Midpoint Substation	1	41.3 acres	0.00	41.3	41.3
Julian Hinds Substation Laydown	1	150' x 150'	0.50	0.0	0.50
Julian Hinds Substation Expansion	1	75' x 240'	N/A	0.41	0.41
Total Estimated			117.52	132.08	249.60

Source: Table 2-2, BEPTL 2004a

The Desert Center Laydown Area is not included as a disturbed area in **SOIL and WATER Table 2** because it is presently used for heavy equipment storage and parking, and the proposed BEPTL will not require any site preparation or change the existing use (BEPTL 2004c). The Bureau of Land Management (BLM) requires the applicant to prepare an Access Road Use Plan to address use of existing roads and adjacent construction areas on BLM managed lands and mitigate any potential impacts. The plan is intended to include reviewing the need for installation of culverts and other road improvements if necessary on a site-specific basis to address construction impacts.

Water Resources

The primary water sources for domestic and agricultural beneficial uses in the Palo Verde area are derived from the Colorado River through surface diversions and groundwater pumping. Surface diversions are used primarily to supply water for agricultural use in the valley. Groundwater pumping is used for local water supply by the City of Blythe, the Mesa Verde Community, and by individual property owners, particularly on the Mesa where the surface-water delivery infrastructure is limited (BEPTL 2004).

Surface Water

With the exception of drainages that discharge into the Colorado River, the other drainages in the area are internal and terminate in closed basins. The low precipitation, high evaporation rate, and typically highly permeable soils in the local washes preclude the existence of perennial streams in the area. Flow in the dry washes (ephemeral drainages) can be substantial during rainfall events, and may result in flashflooding in the streambeds and floodplains, and has the potential to cause significant erosion (BEPTL 2004).

The proposed project will cross the Colorado, Chuckwalla, and Hayfield hydrologic basins and span dry desert washes. These washes are generally identified in AFC Figure 5.4-2 (BEPTL 2004).

Groundwater

A groundwater basin is defined as an area underlain by permeable materials capable of furnishing a significant supply of groundwater to wells or storing a significant amount of water. These basins are filled above bedrock with Quaternary alluvial deposits mostly consisting of sand and gravel, with lesser amounts of silt and clay prevalent near the center of a basin. Alluvial basins in this area are normally hundreds to thousands of feet thick in these central areas, and gradually decrease to zero thickness where they meet the surrounding bedrock at the surface. Such sedimentary deposits have high porosities and store substantial volumes of groundwater. Deposits near the mountain flanks are generally more coarse, angular, steeper, and less well sorted relative to those in the basin center (BEPTL 2004).

The principal groundwater basins underlying the project and the depth below ground surface (bgs) to groundwater are as follows (BEPTL 2004):

- Palo Verde Mesa Basin 70 to 30 feet bgs
- Buck Substation 89 feet bgs
- Chuckwalla Basin 50 to 200 feet bgs
- Hayfield Valley Basin not provided, but said to be “deep”

The applicant states that because the depth to groundwater is deep relative to the construction activities it is unlikely that groundwater will be encountered or affected by the construction or operation of the project. However, the depth below ground surface is not provided for all project components.

Construction and Operation Water Use

Nearly all water use for the BEPTL project would occur during construction and be primarily for control of fugitive dust emissions and mixing concrete.

Approximate anticipated water use is as follows:

- Transmission Line Construction: 128,000 gallons per day.
- Buck Substation Construction: 16,000 gallons per day
- Midpoint Substation Construction 64,000 gallons per day
- Julian Hinds Substation Construction: 16,000 gallons per day

The eastern portion of the project would be served by Palo Verde Irrigation District (PVID), which would support construction at Buck and Midpoint Substations and the transmission line from approximately Milepost 0 to 28. PVID's water would be drawn from two locations: 1) Hobson Way and CO-3 Canal (about 1.5 miles east of BEP); and 2) 22nd Ave. at CO-3-11-4 Canal (about 1 mile east of Midpoint Substation). The western portion of the project would be served by Metropolitan Water District (MWD), which would support construction at Julian Hinds Substation and of the transmission line from approximately Milepost 28 to 67.4. Water from MWD would be drawn from the Colorado River Aqueduct near the Julian Hines Substation (BEPTL 2004b).

During project operation, the Midpoint Substation will rely on bottled water for potable needs. There will not be any change in existing water use for operations at the Buck and Julian Hinds Substations.

Wastewater

Wastewater could be generated during construction in the event dewatering is necessary during excavation or augering of the transmission tower foundations. Overall, dewatering efforts are not expected during construction, except possibly for a few transmission foundations located adjacent to irrigated lands in agricultural production. Operation of the BEPTL will not generate any sanitary wastewater, since no new sewer facilities are proposed for the transmission line or substation features.

Stormwater

Buck Substation

The minimum grade for the Buck substation is 1 percent slope and all drainage is directed away from structures within the site. Part of the on-site drainage is captured in an ephemeral stream channel and discharged offsite. The storage capacity of the existing stormwater retention basins/evaporation ponds already includes the runoff from the area of the proposed substation modifications.

Julian Hinds Substation

The Julian Hinds substation modifications include a permanent expansion of approximately 0.4 acres and a temporary use of an additional 0.5 acres for construction staging/laydown. Minimum grade for the modified substation area will be 1 percent, and

all drainage will be directed away from structures within the footprint and discharged to a dry wash to the south. While the topography is generally level, grading and earthwork will be necessary. Graded areas will be smooth, compacted, and sloped to drain towards the natural drainage system. The cut and fill for areas will alter existing soil profiles, and clearing of vegetation will likely result in increases in water and wind erosion rates.

Midpoint Substation

For the Midpoint Substation, an area of about 41 acres will be needed in total for construction laydown and permanent equipment. The natural topography varies from about elevation 380 feet to 385 feet above mean sea level (AMSL). The area would be cut and filled using all existing material to create a plant grade of average elevation of approximately 383 feet AMSL. The area would be covered with concrete for the equipment pads and foundations, with gravel covering the ground in adjacent areas to the switchgear. A perimeter road would encircle the switchgear and gravel area, and natural vegetation would grow on soil between the perimeter and fenced boundary. The flow of stormwater would ultimately follow the existing drainage pattern towards the northeast corner of the site. The site would be graded to gently slope from the center of the site towards the outside. Perimeter swales would collect and convey storm water to the northeast corner, where it would be discharged outside the Midpoint Substation boundary and would follow natural drainage paths outside the boundary.

Transmission Lines

The transmission line crosses many dry washes and could be constructed in areas prone to flash flooding that could easily erode disturbed areas during or following construction, or potentially erode around the tower footing structures. Erosion from storm water runoff is also prone to areas with steeper slopes, even outside the dry washes. The steeper slopes along the transmission line route include: a) Between Mileposts 43 to 45, where slopes are generally 2-5% except for two poles on a slope of 8%; b) Between Mileposts 49 to 55 where slopes are generally less than 6%, except for 3 poles on slopes ranging from 11 to 17%; and c) In the area near Julian Hinds Substation between Mileposts 66 to 67.4, where slopes are generally 6%, except for two poles to be located on slopes of 23% and 28% respectively (BEPTL 2004c). Potential impacts without proper application of BMPs could be significant. The reduction in vegetative cover resulting from construction of the towers, and related access road improvements, will likely cause some increase in water and wind erosion.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

The methods used to analyze impacts and determine thresholds of significance for any impact are in many cases particular to the situation, and reflect a site-specific approach for each project component and each impact. While all projects will likely have impacts, the goal is to limit any impacts to those of an insignificant or acceptable level, or to avoid them if possible. Such a determination will by necessity rely on science,

technology, expert opinion, and best professional judgment to determine what the level of change to the baseline or pre-existing conditions should be allowed.

Responsible or co-lead (CEQA/NEPA) agencies (or those with an advisory or trustee capacity), particularly those with discretionary approval over various aspects of the project will be consulted as required. Such agencies such as Western Area Power Administration and the Bureau of Land Management in this case, have extensive expertise and LORS responsibility for issues under their jurisdiction. Where it is necessary for the project to conform to legally enforceable LORS or other regulatory requirements whose purpose is to define an allowable level of impact or activity, such requirements may be used if they are determined to be adequate as thresholds of significance.

The available scientific, technical, or other appropriate literature will be considered in the analysis and determination of significant impacts. Other individuals such as scientists and engineers with expert knowledge or expertise in a particular aspect of the project will also be consulted as necessary and their expert opinion or analysis considered as appropriate. It may also be necessary to obtain project-specific studies or assessments in order to establish thresholds, adequately estimate the project's impacts, and develop appropriate mitigation. An example are runoff calculations to estimate if the proposed stormwater system is adequately designed and sized to prevent significant drainage, erosion, and sedimentation impacts.

Stormwater related drainage, erosion, and sedimentation control issues with the BEPTL for construction and operational Best Management Practices (BMPs) and procedures are being evaluated. The need to develop, implement, monitor, maintain, and modify or change as appropriate construction and operational plans, procedures, and BMPs to prevent the occurrence of significant impacts will be considered in a manner similar to a threshold of significance, i.e., if not for effective BMPs significant impacts would likely occur. Requiring appropriate and effective BMPs is analogous to using performance criteria rather than prescriptive measures to ensure impacts remain less than significant. Staff will recommend and propose COCs specifically prescribing BMPs and procedures where necessary.

DIRECT/INDIRECT IMPACTS AND MITIGATION

The direct and indirect impacts of the project in the Soil and Water Resources technical area are primarily related to drainage, erosion, and sedimentation control during both the construction and operational phases of the project. Most of the potential impacts are expected to occur during construction, with a lower potential of occurring during the operation and maintenance phase of activities. These are discussed as follows.

Soils

Soil related issues in the project area include a high potential for wind and water erosion, especially while soils are disturbed during construction, lacking their normal, although limited, natural vegetative cover. Water erosion can also erode the soil around the tower footings for those towers that will be placed within an ephemeral drainage. While the water erosion around the tower footings is not expected to compromise the

structural integrity of the tower considering the tower is founded 20 feet below ground, the freshly disturbed area will be more likely to erode and transport/deposit sediment downstream within the ephemeral drainage. The applicant has established some general approaches for erosion and sediment control which include the following:

- Minimizing initial land disturbance and clearing within the working area;
- Segregating topsoil, stockpiling and replacing;
- Applying temporary and permanent erosion control measures; and
- Restoration.

In its draft DESC/SWPPP, the applicant has proposed a range of temporary BMPs applicable during construction, and permanent BMPs to remain in-place and be maintained during operation. In the process of clearing and grading, vegetation will be lost. At this time, the applicant is relying on natural seed stock in the topsoil to germinate and re-establish vegetation. The re-establishment of vegetation will occur slowly and in a very limited manner, and likely will not be adequate to protect newly-disturbed soils for the first several years after construction. Because staff is concerned about the ability to protect disturbed soils from wind and water erosion, we are requesting the applicant to further address the adequacy of the currently-proposed BMPs with respect to previous and proven practices in the project area. This issue is noted in the section titled **CEC Drainage, Erosion, and Sedimentation Control Plan Comments,** and is applicable to Midpoint Substation, the transmission tower construction sites, and possibly the access roads. Following construction, permanent BMPs for erosion protection are not a concern at either Julian Hinds Substation because it will be covered with gravel, or Buck Substation, as it is not being disturbed significantly from existing conditions.

Condition of Certification **SOIL and WATER 12** requires the project owner to comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. At this time, the applicant is preparing a combined DESC/SWPPP, which will serve both the CEC's and RWQCB's purposes. Condition of Certification **SOIL and WATER 13** requires the project owner to obtain CPM approval for a site-specific final Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements and ensures protection of water and soil resources for both the construction and operational phases of the project. Condition of Certification **SOIL and WATER 14** requires the project owner to comply with all requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner is to develop and implement a Storm Water Pollution Prevention Plan for the operation of Midpoint Substation.

The Bureau of Land Management (BLM) requires the applicant to prepare an Access Road Use Plan to address use of existing roads and adjacent construction areas on BLM managed lands and mitigate any potential impacts. The plan is intended to include reviewing the need for installation of culverts and other road improvements if necessary on a site-specific basis to address construction impacts. Condition of Certification **SOIL and WATER 16** requires the applicant to prepare and submit the Access Road Use Plan to BLM for review and approval, and to the CPM with evidence that BLM has approved the plan prior to construction.

Water Resources

Surface Water

There are no permanent water bodies or perennial streams along the proposed Buck to Julian Hinds transmission line route, or near the Buck or Julian Hinds substations. There are a large number of desert washes (ephemeral drainages) that could potentially be impacted by construction, particularly along the transmission line route. During construction, vegetation will be removed from soil surfaces resulting in disturbed areas (see **Soil and Water Resources Table 2**). Grading, road construction, tower footing excavation, and other construction activities will expose soils and create an increased potential for erosion and sediment discharge into watercourses and washes, particularly during periods of rainfall. Such impacts would be significant if left unmitigated (BEPTL 2004).

All surface features crossed by the BEPTL are dry washes. Wherever possible, the transmission poles would be placed outside of these areas. Most of the transmission line route has existing access roads. Some new access roads and spur roads will be necessary, as summarized in **Soil and Water Resources Table 2**.

None of the project substation components are located within a 100-year floodplain, and thus will not exacerbate flood conditions. About 130 ephemeral drainages exist and cross under the proposed transmission routes. Most of these would be spanned by the transmission lines, and no structures constructed within the bed and banks of the drainage. However, in some cases, it will be necessary to locate the tower within the drainage itself, which will subject the tower to high flows within a100-year floodplain. Although the drainages range in width from 4 - 100 feet, the necessity to construct a transmission tower within the bed and banks of a drainage would tend to occur in the wider drainages. For these wider drainages, the relatively narrow 5-foot diameter base of the vertical transmission towers will not have a significant effect in diminishing the capacity of the drainages, and thus will not exacerbate flood conditions.

Groundwater

It appears unlikely that groundwater will be encountered or affected by the construction or operation of the project. However, the depth below ground surface for groundwater is not provided for all project components, and it is possible that a few transmission foundations located adjacent to irrigated lands may encounter localized shallow groundwater. The applicant has stated that they will avoid the use or storage of hazardous materials or the fueling or lubrication of construction equipment within 200 feet of a well or spring. In the event dewatering should be required, it must be done in a manner consistent with applicable LORS. Any water obtained in this manner could be used for dust suppression if the quality is determined to be acceptable. The RWQCB and other responsible agencies should be consulted on the quality of any water recovered from construction dewatering before reuse to verify its quality and if it may be used for construction purposes without compromising worker and public safety and avoid degradation to soil and water resources.

Staff is recommending the applicant address dewatering methods in the DESC/SWPPP, so that a plan will be in-place if needed to avoid erosion and impacts to water quality, and to possibly utilize the water for a construction-related use.

Construction and Operation Water Use

The project's potential for significant impacts to the local or regional water supply is considered to be low since the project's water use is reasonable for the activities and is short-term (approximately 12 months); significant impacts to the water supply have not been identified and are not expected. Operation of the BEPTL should not have significant impacts to water supplies since no permanent water or sewer facilities are proposed. Condition of Certification **SOIL and WATER 15** requires the project owner to provide a Construction Water Use Summary Report upon completion of the construction of the BEPTL project. The summary is to identify the amount of water used by each source (ground, surface, etc.) and the provider (PVID, MWD, etc.) for all water used, and shall be included in the Monthly Compliance Report submitted to the CPM.

Wastewater

Wastewater could be generated during construction in the event dewatering is necessary during excavation of the transmission tower foundations. Overall, dewatering efforts are not likely to be needed during construction, except possibly for a few transmission foundations located adjacent to irrigated lands in agricultural production. Groundwater in the Palo Verde Mesa Basin normally ranges from 30 to 70 feet bgs, but can be shallower in localized areas where lands are irrigated. The transmission towers will be buried to a depth of 20 feet, and if groundwater were encountered at say 10 feet, installation could require dewatering before backfill. Staff is recommending the applicant address dewatering methods in the DESC/SWPPP, so that a plan will be in-place if needed to avoid erosion and effects to water quality. This issue is noted in the section titled **CEC Drainage, Erosion, and Sedimentation Control Plan Comments.**

Operation of the BEPTL will not generate any sanitary wastewater, since no new sewer facilities are proposed for the transmission line or substation features.

Stormwater

Buck Substation

For the Buck substation the storage capacity of the existing stormwater retention basins/evaporation ponds already includes the runoff from the area of the proposed substation modifications. The modification activities are not expected to significantly change the amount of runoff from the substation area, and the area to be modified has been graded and covered with gravel.

Julian Hinds Substation

For the Julian Hinds substation expansion, an area of about 0.50 acres will be needed for construction laydown, and about 0.41 acres will be needed for the permanent equipment. The site will be graded smooth, compacted, and sloped to drain towards the natural drainage system. The cut and fill activities will alter existing soil profiles, and clearing of vegetation will likely result in short-term increases in water and wind erosion

rates. The design will include measures to stabilize cut and fill areas to control drainage, erosion, and sedimentation. Final grading will include gravel surfacing on portions of the site, which should minimize soil loss. Staff is recommending the applicant address site-specific grading plans, temporary construction BMPs and permanent operating BMPs in the DESC/SWPPP, as these were not included in the initial draft. This issue is noted in the section titled **CEC Drainage, Erosion, and Sedimentation Control Plan Comments.**

Midpoint Substation

For the Midpoint Substation, an area of about 41 acres will be needed in total for construction laydown and permanent equipment. The natural topography varies from about elevation 380 feet to 385 feet above mean sea level (AMSL). The area would be cut and filled using all existing material to create a plant grade of average elevation of approximately 383 feet AMSL. The area would be covered with concrete for the equipment pads and foundations, with gravel covering the ground in adjacent areas to the switchgear. A perimeter road would encircle the switchgear and gravel area, and natural vegetation would grow on soil between the perimeter and fenced boundary. The flow of stormwater would generally follow the existing drainage pattern towards the northeast corner of the site. The site would be graded to gently slope from the center of the site towards the outside. Perimeter swales would collect and convey storm water to the northeast corner, where it would be discharged outside the Midpoint Substation boundary and would follow natural drainage paths outside the boundary.

The applicant has included in the draft DESC/SWPPP a Hydrology Report for design of the storm water system. The runoff calculations include an additional 4.0 acres, for a total of 45 acres to account for run-on drainage onto the Midpoint Substation site, that flows in from the southwest corner. Peak stormwater flowrates resulting from precipitation have been estimated for both pre- and post-development conditions. The pre-developed condition assumes natural permeability conditions in the ground with almost all native soil, while the post-developed conditions shows the effects of adding less-permeable surfacing in the substation as results from road paving and equipment pads and foundations. The post-development stormwater discharge is not to exceed the pre-development stormwater flowrates, which will require some on-site detention of stormwater in order to accomplish. The estimated flowrates are as follows:

SOIL and WATER Table 3
Peak Stormwater Flowrates

Return Period (24-hour Storm)	Pre-Development Stormwater Flowrates	Post-Development Stormwater Flowrates	Post-Development Stormwater Discharge
2-Year	7.4 cfs	N/A	N/A
10-Year	16.0 cfs	N/A	N/A
25-Year	22.3 cfs	N/A	N/A
100-Year	34.2 cfs	N/A	N/A

Source: (BEPTL 2004a) ; N/A means Not Available, but being requested of the applicant;

The applicant proposes to design the substation facilities according to the Riverside County Hydrology Manual. Surface drainage systems will be designed to handle the

flows resulting from the 1-hour, 3-hour, 6-hour, and 24-hour duration rainfall events for the 2-year, 5-year, and 10-year frequencies. The surface drainage system will be designed to prevent flooding of the plant facilities and will include an on-site detention pond with a restricted outlet (BEPTL 2004).

Although the applicant has not provided all of the stormwater flowrate estimates for **Soil & Water Resources Table 3**, staff understands the applicant's intentions are to complete its design so as to achieve and comply with this criterion. Staff will look forward to receiving the applicant's completed stormwater analysis for Midpoint Substation as part of its revised DESC/SWPPP before staff prepares the Final SA/EA. This issue is noted in the section titled **CEC Drainage, Erosion, and Sedimentation Control Plan Comments.**

Based on the applicant's analysis, the Midpoint Substation is being designed to manage stormwater as follows:

1. During construction activities, the stormwater system will be capable of collecting and conveying runoff resulting from the 10-Year, 24-hour storm.
2. During operations, the stormwater system will avoid flooding of the site and will be capable of collecting and conveying runoff resulting from the 25-Year, 24-hour storm.
3. During operations, the site will be protected from major flood damage resulting from the 100-Year, 24-hour storm.

Transmission Lines

The transmission line crosses many dry washes and several steep slopes. Some of the towers will be constructed in areas that are more vulnerable to erosion during and following construction due to soil disturbance and loss of vegetation. The dry washes are prone to flash flooding that could also erode the tower footing structures. The project is proposing mitigation that includes locating structures outside of the identified watercourses or washes whenever possible, and designing the pole foundations to resist damage from flash floods. Construction of new access roads and removal of vegetation cover will likely cause a short-term increase in water and wind erosion. Mitigation measures have been designed to reduce any impacts to less than significant levels.

Hazardous materials, pollutants, and contaminants used during construction include hydrocarbons (gasoline, diesel, oil, lubricants, etc.) paint, and solvents among others. The potential for discharge of these into a watercourse or drainage would be considered a significant impact if left unmitigated (BEPTL 2004). These issues have been addressed in the DESC/ SWPPP (BEPTL, 2004a).

In conjunction with the installation of the transmission line towers in ephemeral drainages, the applicant will be required to consult with the Army Corps of Engineers, Regional Water Quality Control Board and CA Department of Fish and Game to identify relevant permit requirements to obtain authorization for Nationwide Permit No. 12 – Utility Line Backfill and Bedding, Water Quality Certification and the Streambed

Alteration Permit respectively. **Condition of Certification Bio 10** requires the applicant to implement all measures in these permits, and include them in the Biological Resources Mitigation Implementation and Monitoring Plan.

The Soil and Water Conditions of Certification supporting stormwater BMPs and compliance with LORS are as follows:

- Condition of Certification **SOIL and WATER 12** requires the project owner to comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. At this time, the applicant is preparing a combined DESC/SWPPP, which will serve both the CEC's and RWQCB's purposes.
- Condition of Certification **SOIL and WATER 13** requires the project owner to obtain CPM approval for a site-specific final Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements and ensures protection of water and soil resources for both the construction and operational phases of the project.
- Condition of Certification **SOIL and WATER 14** requires the project owner to comply with all requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner is to develop and implement a Storm Water Pollution Prevention Plan for the operation of Midpoint Substation.
- Condition of Certification **SOIL and WATER 16** requires the applicant to prepare and submit the Access Road Use Plan to BLM for review and approval, and to the CPM with evidence that BLM has approved the plan prior to construction.

Significant impacts are not expected with proper implementation of the DESC/SWPPP.

SWRCB General Permit For Construction

Staff believes construction and operational impacts would be reduced to less than significant by adequate mitigation measures, inclusive of proper procedures and Best Management Practices (BMPs) during construction. These procedures and BMPs would be contained in the construction Storm Water Pollution Prevention Plan (SWPPP) under a General Permit administered by the State Water Resources Control Board/Regional Quality Control Board (SWRCB/RWQCB). Staff is proposing Condition of Certification **SOIL and WATER 12** requiring the applicant to meet the requirements of the SWRCB/RWQCB General Permit for a construction SWPPP prior to the start of site mobilization activities. The applicant has prepared a draft combined DESC/SWPPP, which ultimately should satisfy both the CEC and SWRCB/RWQCB.

The SWRCB's requirement for a SWPPP is summarized below (http://www.swrcb.ca.gov/stormwtr/construction.html):

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as

stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map(s) which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

If a single project traverses more than one Regional Water Quality Control Board (RWQCB) jurisdiction, a complete Notice of Intent package (Notice of Intent, site map, and fee) and Notice of Termination (upon completion of each section), must be filed for each RWQCB.

CEC Drainage, Erosion, and Sedimentation Control Plan Comments

Staff has also requested and obtained from BEPTL a draft DESCP, which the applicant has combined with the SWPPP for both efficiency and comprehensiveness, to allow for the evaluation of construction activities at the substation sites and all facilities associated with the transmission line project components. The purpose of the draft plan is to provide staff with a document of sufficient detail that clearly identifies all potential impacts and mitigation measures, ensures only the minimum area necessary is disturbed, protects disturbed and sensitive areas, retains and controls sediment on-site, and minimizes off-site effects of water and wind erosion. The project must comply with all applicable LORS and incorporate all related requirements of other responsible agencies, to include Western Area Power Administration (Western), the Bureau of Land Management (BLM), the State Water Resources Control Board/Regional Water Quality Control Board (SWRCB/RWQCB), Riverside County, and the City of Blythe, etc.

Additionally, the draft DESCP/SWPPP was required to specifically address all issues raised by the Western Area Power Administration (Western) in their data requests dated October 2004, and December 2004. The applicant was specifically asked in the first round of staff data requests (Data Request Number 65) to include the following in their draft DESCP. Each of the originally requested elements of the DESC/SWPPP are listed below and staff has summarized in italics the most significant information that remains outstanding or related issues that have since been raised by Western. A revised draft DESC/SWPPP is requested in time to prepare the Final SA/EA, in order to determine whether the project will avoid significant adverse impacts to soil and water resources.

Data Request No. 65 – Originally Requested DESCP Information & Outstanding Data

The draft Drainage Erosion and Sedimentation Control Plan (DESCP) must identify all measures that will be implemented at various locations of the project during construction and operation of the proposed transmission line(s). The plan must address the substations, construction laydown areas; pull areas, temporary and/or permanent access roads, rights of way, and any other construction staging areas and all other ancillary facilities.

a. The DESCP must identify all permanent and temporary BMPs in written form and depicted on a construction drawing(s) of appropriate scale to clearly identify those BMPs employed to control water drainage and wind related erosion and offsite sedimentation during construction and operation.

1) Figure 4-1 appears to show temporary construction BMPs at the transmission line tower sites. Staff requires a figure showing typical permanent BMPs at the tower sites. Also, the DESCP should address how the tower sites will be protected from wind erosion, no matter which downhill grade is assumed.

2) For perimeter drainage swales, such as those shown in Figure 3 for Midpoint Substation, the applicant should address the need for stabilization of the soil by application of erosion control fabric or other methods. Also, the DESCP should show a typical cross-section of the drainage swale dimensions, and details of any BMPs that will serve to skim oil and trap sediment.

3) The DESCP should address how native vegetation and ground cover will be successfully and adequately re-established as an effective erosion control measure at Midpoint Substation and the tower locations. The existing vegetation will be lost during cut and fill grading activities, and simply replacing topsoil may not provide adequate protection that depends solely on germination of natural seed stock in the topsoil. The DESCP should address this issue for adequacy of protection during the next rainy season, and for enduring wind erosion, in comparison to any previous and proven practices in the project area.

Any measures necessary to address federal or regional permits (i.e., Nationwide Permits, Streambed Alteration Agreements, or 401 Certification, BLM, Western, etc.) should be identified and included in the DESCP where appropriate.

1) The DESCP should summarize the results of the applicant's consultations with the Army Corps of Engineers, Regional Water Quality Control Board and CA Department of Fish and Game to identify relevant permit requirements to obtain authorization for Nationwide Permit No. 12 – Utility Line Backfill and Bedding, Water Quality Certification and the Streambed Alteration Permit respectively, for installation of transmission towers in the ephemeral drainages. The applicant should provide staff with any available documentation of the consultation.

a. The plan must also identify maintenance and monitoring efforts, including a schedule for all erosion control measures.

1) The DESCP should address ongoing road maintenance needs in the DESC/SWPPP as to expected maintenance activities and ability to maintain within the existing ROW (Item 8, Western's12/8/04 Comments).

b. The plan must include and be consistent with any biological resources-related Erosion Control and Revegetation Plan particularly where required by a Biological Resource Mitigation Implementation and Monitoring Plan and any proposed Grading Plan from responsible agencies, to include Western and BLM.

c. Please provide representative profiles and cross sections of areas that will be cut and filled, in relation to the proposed conceptual location of BMPs for erosion control during construction.

1) The DESCP should provide grading plans with profiles and cross sections showing proposed cut and fill areas for Midpoint and Julian Hinds Substations.

2) The DESCP should provide a Site Plan showing construction BMPs for Julian Hinds Substation improvements, similar to the Figure 3 Site Plan in the DESC/SWPPP already provided for Midpoint Substation.

3) The DESCP should discuss plans for disposing of the soil resulting from the transmission tower excavations. If hauling to another site that is not already identified in the project plans for grading and fill placement, it should include a site map with grading plans, profiles, cross sections and BMPs.

d. Please provide a discussion of all assumptions, calculations, measures, and any other data or information that demonstrates the proposed DESCP will conform to all federal, State, and local regulatory requirements.

e. The site specific DESCP for both construction and operation phases must include the following elements, as applicable:

(1) ***Vicinity Map*** – A map shall be provided indicating the location of all project elements with depiction of significant geographic features to include watercourses, creeks, other drainages, wetlands, and sensitive habitat.

(2) ***Site Delineation*** – The project site and all project elements shall be delineated showing boundary lines of all construction areas and the location of existing and proposed structures, linear facilities, roads, and drainage facilities.

(3) ***Watercourses and Critical Areas*** – The DESCP shall show the location of ***watercourses*** and critical areas such as creeks, rivers, wetlands and other environmentally sensitive areas. Indicate the proximity of those features to the project transmission line construction corridor and ancillary construction or operational support areas.

(4) ***Drainage*** – The DESCP shall provide a topographic site map showing existing, interim and proposed drainage systems; drainage area

boundaries and watershed sizes in acres; the hydraulic analysis to support the selection of Best Management Practices (BMPs) to divert off-site drainage around or through the transmission line corridor, lay down areas, and other construction areas. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.

a) The DESCP should clarify for Midpoint Substation as stated in the Hydrology Report (of the DESC/SWPPP), if there will be an "off-site drainage swale adjacent to the project". If so, the DESCP should show on Figure 3 – Construction BMPs.

b) The DESCP should specify the BMPs proposed as the "Offsite Drainage Control" noted on Figure 3 for preventing erosion resulting from the concentrated stormwater discharged from Midpoint Substation to outside the substation boundary.

c) The DESCP should provide Site Plans showing permanent BMPs and drainage information for operation of Midpoint and Julian Hinds Substations.

(5) ***Clearing and Grading*** – The plan shall provide a delineation of areas to be cleared of ***vegetation*** and areas to be preserved. The plan shall provide elevations, slope, location, and extent of all proposed grading as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography. The DESCP shall include a statement of the quantities of material excavated or filled for each element of the project (site and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported.

a) The DESCP should address whether the applicant wishes to accept the higher potential disturbance areas resulting from transmission line construction as developed in Western's experience. If so, the applicant should revise Table 2-2, Land Disturbance, accordingly (Item 13, Western's 12/8/04 Comments).

(6) ***Project Schedule*** – The DESCP shall identify on the topographic site map the location of the site specific BMPs to be employed during each phase of ***construction*** (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.

a) The DESCP should provide a schedule for installation of temporary construction BMPs in coordination, and in sequence with detailed construction activities for each project element group (substations, road construction or modifications, and pole installation).

(7) ***Best Management Practices*** – The DESCP shall show the location, timing, inspection, and maintenance schedule of all erosion and

sediment control ***BMPs*** to be used prior to initial grading, during project element excavation and construction, and final grading/stabilization. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances.

(8) ***Erosion Control Drawings*** -- The erosion control drawings and narrative must be designed and sealed by a professional engineer/erosion control specialist.

(9) ***Design Storm*** -- Please discuss the design storm that will be used to ***calculate*** additional capacity required in any contained areas surrounding outside chemical storage areas.

a) For Midpoint Substation, the DESCP should provide stormwater flowrate and discharge calculations for the post-development condition considering the effects of less permeable ground surface due to paving, etc. and the ability to detain runoff to avoid discharges exceeding the pre-developed condition (See Soil & Water Resources Table 3 and discussion under Stormwater).

(10) ***Groundwater*** -- During construction, it is unlikely, but possible that groundwater will be encountered. Discuss dewatering activities/techniques that may be needed, including disposal of associated water.

a) Staff is recommending the applicant address dewatering methods in the DESC/SWPPP, so that a plan will be in-place if needed to avoid erosion and effects to water quality.

(11) ***Contaminated Soil or Groundwater*** -- Address how any ***contaminated*** soil or groundwater that may be excavated or encountered during construction will be collected, treated, and discharged.

(12) ***Water Quality of Wastewater*** -- Discuss the anticipated water quality of wastewater discharged, anticipated disposal of waste stream(s), and any appropriate BMPs necessary to ensure no discharge of contaminants to surface or groundwater will result from hydrostatic testing or other activities.

Staff recognizes the formidable task performed by the applicant to prepare the initial draft of the DESC/SWPPP within only 2 weeks and distribute it for staff's review prior to preparing this PSA. Staff is very encouraged by the initial level of detail included in the DESC/SWPPP, and respectfully requests the applicant to continue developing its draft DESC/SWPPP to include addressing the outstanding issues noted above, and provide the 2nd draft in time for staff to review before preparing the Final SA/EA. Staff has been careful to only request information it considers to be significant in demonstrating the project will not have significant adverse effects on soil and water resources. Condition of Certification **SOIL and WATER 13** will provide the applicant further flexibility to update or refine its plans for the DESC/SWPPP prior to starting construction, when the final plan is to be submitted to the CPM for approval.

CUMULATIVE IMPACTS AND MITIGATION

There are two other projects proposed in the area in addition to the BEPTL project to be considered with regard to cumulative impacts. They are the SCE Devers-Palo Verde 2 transmission line (DPV2), and the Desert Southwest transmission line (DSW). The details of the orientation and proximity of these projects to the BEPTL project are discussed in greater detail in the BEPTL Amendment Petition in section 5.4.4 (BEPTL 2004).

All three projects will each have their own poles and other structures adjacent to the existing SCE transmission line (DPV1). Spur roads will be perpendicular to the existing access road, and if all of the projects were actually built they would share portions of the spur roads during construction, which would reduce cumulative impacts.

Any significant impacts would be related to the combined disturbance of the three projects together. Those impacts associated with the DPV2 line appear to be minimal since no new spur roads would be built. The spur roads for the BEPTL Buck to Julian Hinds line would be used for DPV2.

The BEPTL Buck to Julian Hinds line spur roads would also be used to some extent for the DSW line, and would simply be extended. Any cumulative impact would be related to these spur road extensions.

The impacts for the three proposed projects would be similar, and the projects would be evaluated for the potential to:

- Accelerate wind or water erosion and sedimentation;
- Exacerbate flood conditions in the vicinity of the project;
- Adversely affect surface or groundwater supplies;
- Degrade surface or groundwater quality; and
- Comply with all applicable laws, ordinances, regulations and standards.

The planning involved in co-locating the four projects within essentially the same corridor will result in fewer impacts cumulatively. Mitigation for those remaining potential impacts is proposed in the DESCP/SWPPP. The BEPTL project's contribution to potentially significant cumulative impacts is expected to be insignificant with proper implementation of the DESCP/SWPPP.

COMPLIANCE WITH LORS

The project as proposed is expected to comply with all applicable LORS in the Soil and Water Resources technical area. Staff has proposed Conditions of Certification that will require BEPTL to be in compliance with the requirement for a SWPPP from the SWRCB/RWQCB for both construction and operation. Staff has requested a revised draft DESCP/SWPPP from BEPTL that will address drainage, erosion, and sedimentation impacts, and that will be reviewed both during the amendment approval

process and also prior to the construction and operation phases of the project, by Riverside County, the City of Blythe, the Western Area Power Administration, and the Bureau of Land Management. Any additional LORS requirements identified by these or other agencies during the amendment process review of this PSA will be addressed in the Final SA/EA. A final determination of LORS compliance will be made at that time.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Any additional comments received as a result of agency, intervenor, or interested party review of the PSA will be addressed in the final SA/EA.

CONCLUSIONS

Staff believes the applicant is working diligently to identify site-specific drainage, erosion and sediment transport/deposition issues within the project area, and to plan the application of proper temporary BMPs during construction and permanent BMPs during project operation. The applicant has established its initial plans by preparing a draft Drainage, Erosion and Sedimentation Control / Storm Water Pollution Prevention Plan for the transmission line and substation components. Staff has reviewed the draft DESC/SWPPP, and although we have identified a number of issues where the DESC/SWPPP needs to provide more detailed planning, staff believes its specific comments as summarized in this PSA will lead the applicant to adequately address these issues before preparation of the final SA/EA. Staff requests the applicant provide a revised draft DESC/SWPPP for review prior to the final SA/EA that address the outstanding issues identified under the **CEC Drainage, Erosion, and Sedimentation Control Plan Comments** heading of this Soil and Water Resources PSA section.

At this time and assuming the ongoing efforts of the applicant, staff concludes that there will not be any significant adverse impacts to soil and water resources as a result of the proposed Blythe Energy Project Transmission Line project. Staff believes that the BEPTL project will comply with all applicable LORS. Staff's final determination will be dependent on the applicant's response to issues identified herein with the draft DESC/SWPPP and evaluation of comments received during the review of this PSA from the City of Blythe, Riverside County, Western Area Power Administration, U.S. Bureau of Land Management, and other responsible agencies and/or interested parties.

PROPOSED CONDITIONS OF CERTIFICATION

The new Conditions of Certification for the Blythe Energy Project Transmission Line Modifications Amendment (BEPTL), the subject of this Staff Assessment, apply only to the proposed BEPTL project and <u>not</u> to the original BEP. The result is that there are now separate conditions for the original BEP and the proposed BEPTL project.

Staff recommends that the BEPTL Amendment be approved subject to the following conditions.

Soil and Water 12: (Applies only to the BEPTL project component.) The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the construction of the entire project (construction SWPPP) that meets all SWRCB requirements. The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB regarding this permit, including proof of receipt of a WDID number from the State Water Resources Control Board.

Verification: The project owner shall submit copies to the CPM of all correspondence between the project owner and the SWRCB/RWQCB related to the General NPDES permit for the Discharge of Storm Water Associated with Construction Activities within 10 days of its receipt (when the project owner receives correspondence from the SWRCB/RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the SWRCB/RWQCB). This information shall include copies of the Notice of Intent, receipt of WDID number from the SWRCB/RWQCB, Notice of Termination for the project, and all notices of violations or other enforcement actions.

SOIL and WATER 13: (Applies only to the BEPTL project component.) Prior to beginning any site mobilization activities for any project element, the project owner shall obtain CPM approval for a site-specific final Drainage, Erosion and Sedimentation Control Plan (DESCP) that addresses all project elements and ensures protection of water and soil resources for both the construction and operational phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, include legible drawings, details and complete narrative and identify all monitoring and maintenance activities. No later than 60 days prior to start of any site mobilization, the project owner shall submit a copy of the DESCP to Riverside County, the City of Blythe, the Western Area Power Administration, and the Bureau of Land Management requesting review and comment within 30-days. Comments shall be directed to both the BEPTL and the CEC CPM. The plan shall be approved by the CPM prior to the start of any site mobilization activities. The plan shall be consistent with the grading and drainage plan as required by **Condition of Certification CIVIL-1** and may incorporate by reference any SWPPP developed in conjunction with any SWRCB/RWQCB NPDES stormwater permit.

Verification: No later than 60 days prior to the start of any site mobilization for any project element, the project owner shall submit the DESCP to the CPM and other agencies for review and approval. The DESCP must be approved by the CPM prior to any site mobilization. During construction, the project owner shall provide a summary in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control activities and the results of monitoring and maintenance activities. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance activities for the life of the project.

SOIL and WATER 14: (Applies only to the BEPTL project component.) The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the operation of Midpoint Substation (Operational SWPPP). The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB related to this permit including proof of receipt of the WDID Number from the SWRCB/RWQCB, and all notices of violations or other enforcement actions.

Verification: The project owner shall submit copies to the CPM of the operational SWPPP for Midpoint Substation prior to commercial operation. The project owner shall submit all correspondence between the project owner and the RWQCB related to the General NPDES permit for Discharge of Storm Water Associated with Industrial Activity within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include a copy of the Notice of Intent and Notice of Termination.

SOIL and WATER 15: (Applies only to the BEPTL project component.) The project owner shall provide a Construction Water Use Summary Report upon completion of the construction of the BEPTL project. The summary shall identify the amount of water used both in gallons and acre-feet by each source (ground, surface, etc.) and the provider (PVID, MWD, etc.) for all water used, and shall be included in the Monthly Compliance Report submitted to the CPM.

Verification: The project owner shall submit the Construction Water Use Summary Report to the CPM in the Monthly Compliance Report not later than 30-days after construction of the BEPTL project is complete.

SOIL and WATER 16: (Applies only to the BEPTL project component.) Prior to construction, the project owner shall submit an Access Road Use Plan to BLM for its approval. The Access Road Use Plan and evidence of BLM's approval shall be submitted to the CPM prior to initiating construction.

Verification: At least 90 days prior to initiating construction, the project owner shall submit the Access Road Use Plan to BLM for review and approval. The Access Road Use Plan and evidence of BLM's approval shall be submitted to the CPM prior to initiating site mobilization for construction.

REFERENCES

BEPTL 2004. Blythe Energy Project Transmission Line Modifications: Petition for Post-Certification Amendment (99-AFC-8), Blythe Energy, LLC, October 2004.
BEPTL 2004a. Blythe Energy Transmission Line Modifications. Draft Drainage, Erosion and Sedimentation Control Plan/Stormwater Pollution Prevention Plan (Draft DESC/SWPPP), Response to Staff Data Request Number 65. Blythe Energy, LLC, December 2004.

BEPTL 2004b. Blythe Energy Transmission Line Modifications. Response to Staff Data Request Number 67. Blythe Energy, LLC, December 2004.

BEPTL 2004c. Blythe Energy Transmission Line Modifications. Response to Data Requests & Comments from Western Area Power Administration. Blythe Energy, LLC, December 2004.

TRAFFIC AND TRANSPORTATION

David Flores

SUMMARY OF CONCLUSIONS

With implementation of the recommended conditions, the project would be consistent with the Circulation Element of the County of Riverside General Plan and all other LORS. The project would not have a significant impact on the local and regional road/highway network. During the construction phase, local roadway and highway demand resulting from the daily movement of workers and materials would not increase beyond significance thresholds established by Riverside County and the City of Blythe. Therefore, the Blythe Energy Project Transmission Line Modifications (BEPTL) will not cause a significant impact to traffic impacts in the area. During the operational phase, increased roadway demand resulting from the daily movement of workers and materials would be minimal.

INTRODUCTION

The Traffic and Transportation section addresses the extent to which the BEPTL may impact the transportation system in the local area. This analysis includes the identification of: the roads and routings which are proposed to be used for project construction and operation; potential traffic-related problems associated with the use of those routes; the anticipated encroachment upon public rights-of-way during the construction of the proposed project and associated facilities; and the possible effect of the proposed transmission line and poles on local airport flight traffic.

The influx of large numbers of construction workers can, over the course of the construction phase, increase roadway congestion and also affect traffic flow. In addition, the transportation of large pieces of equipment and facility components can affect roadway congestion and safety. The relevant laws, ordinances, regulations, and standards (LORS) are listed below, followed by discussion of the potential impacts related to traffic operations and safety hazards resulting from the construction and operation of the proposed transmission line.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

Traffic and Transportation Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal	
Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G	Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways. Section 353 defines hazardous materials.
Part 77, Federal Aviation Administration (FAA) Regulations	Establishes standards for determining obstructions in navigable airspace and sets forth requirements for notification to the FAA of proposed construction. Notification is also required if the structure or obstruction is more than a specified height and falls within any restricted airspace in the approach to airports.
State	
California Street and Highways Code (S&HC), Sections 660, 670, 1450, 1460 et seq., 1470, and 1480.	Regulates right-of-way encroachment and granting of permits for encroachments on state and county roads.
California State Planning Law, Government Code Section 65302 a&b	Requires cities and counties to adopt a general plan to guide development, including a mandatory circulation element.
S&HC, Sections 117 and 660-711, and CVC, Sections 35780 et seq.,	Require permits to transport oversized loads on county roads. California S&HC Sections 117 and 660 to 711 requires permits for any construction, maintenance, or repair involving encroachment on state highway rights-of-way. CVC Section 35780 requires approval of a permit to transport oversized or excessive loads over state highways.
California Department of Transportation (Caltrans)	Weight and load limitations for state highways apply to all state and local roadways. The weight and load limitations are specified in the CVC Sections 35550 to 35559. All construction in public rights-of-way needs to comply with the “Manual of Traffic Controls for Construction and Maintenance of Work Zones”.
County	
County of Riverside Regional Transportation Plan	The 2001 Riverside County Regional Transportation Plan is a comprehensive long-range transportation-planning document that serves as a blueprint to guide public policy decisions regarding transportation expenditures and financing (Riverside County 2001).
General Plan Circulation Element	The Circulation Element of the Riverside County General Plan establishes LOS C as a Countywide target on all County-maintained roads and conventional State Highways, except that LOS D could be allowed in urban areas only at intersections of any combination of Major Streets, Arterials, Expressways, or conventional State Highways within one mile of a freeway interchange and at freeway ramp intersections in instances where LOS C is deemed to be impractical (Riverside County, p. 216).
Desert Center Area Plan	Circulation facilities within this area are limited due to the remoteness and lack of community development land uses. Interstate 10 passes through the southern portion of the area plan. State Route 177 and Kaiser Road extend north from I-10 near Desert Center, and provide access to local roadway systems serving Eagle Mountain, Lake Tamarisk, and Desert Center Airport. I-10 form its junction with State Route 62 to the Colorado River, is identified as a candidate route that should be included in the California State Scenic Highway Program, but has yet to be designated as an eligible or official scenic highway.
City	
City of Blythe General Plan Circulation Element	Policy 11: Provide and maintain roadway intersection operations at Level of Service (LOS) D or better at peak traffic volumes for all segments of the City's circulation system.

SETTING

The transmission line modification project is primarily situated in the desert area of Riverside County with the Buck Substation site and a small portion of the transmission line components located in the City of Blythe. The remainder of the transmission line and other substations would be located in the unincorporated areas of Riverside County. **TRAFFIC and TRANSPORTATION Figure 1, Regional Transportation Setting**, shows the surrounding region with major roads, highways, and railways in the vicinity of the proposed modifications.

Project construction workers will be able to reach the proposed substation locations and transmission line route by using the existing paved and dirt roadways in the region. The regional and local roadways in the area that will be most affected by the project are shown in **TRAFFIC AND TRANSPORTATION Figure 2, Existing Access Roads-Buck to Julian Hinds.** The critical roads and highways in the area of the project site are:

Interstate 10 (I-10)

I-10 is a divided freeway providing two lanes of traffic in each direction. It is a major east-west transportation route between southern California, Arizona, and New Mexico. In addition, I-10 is a major commerce route used by tractor- trailer cargo trucks.

State Route 177 (SR-177)

State Route 177 begins at Desert Center from Interstate 10 and continues in a northeasterly direction for approximately 27 miles before connecting with SR-62. SR-177 provides one lane of traffic in each direction, and is considered a minor arterial highway.

Mesa Drive

Mesa Drive is a two-lane rural roadway which is approximately 2.5 miles west of the Buck Substation.

Wiley Well Road

Wiley Well Road is approximately 17 miles west of Blythe and is a two-lane roadway that provides access to the Chuckwalla Valley State Prison and the surrounding trails within a BLM recreational area, Bradshaw Trail National Back Country Byway.

Chuckwalla Valley Road

Chuckwalla Valley Road is a two-lane rural roadway that provides access to the Chuckwalla Mountain Wilderness.

Eagle Mountain Road

Eagle Mountain Road is approximately three miles west of Desert Center and provides access to the BLM recreational area.

Red Cloud Mine Road

Red Cloud Mine Road is a two lane southerly roadway and provides access to the Red Cloud Mine recreational area.

Hayfield Road

Hayfield Road is a two-lane rural roadway which provides access to the Joshua Tree National Park.

Traffic and Transportation Table 1 gives the Level of Service (LOS) definitions used by Caltrans to analyze traffic impacts by peak hour intersection capacity and operations. Intersection level of service is identified with letters of designation, from LOS A for least congested to LOS F for most congested.

Traffic and Transportation Table 1
Level of Service (LOS) Criteria for Signalized Intersections

Level of Service	Average Vehicle /Capacity Ratio	Traffic Flow Characteristics
A	0.0 - 0.59	Free flow; insignificant delays
B	0.6 - 0.69	Stable operation; minimal delays
C	0.7 - 0.79	Stable operation; acceptable delays
D	0.8 - 0.89	Approaching unstable; queues develop rapidly but no excessive delays
E	> 0.9 - 0.99	Unstable operation; significant delays
F	N/A	Forced flow; jammed conditions

Source: BEPTL pg. 5.10-10

Traffic and Transportation Table 2 provides LOS information for existing conditions for roadways in the project area.

Traffic and Transportation Table 2
Traffic Volumes and Capacities of Primary Roadways within the Proposed Modifications Area

Highway Segment	Classification	No. of Lanes	Average Daily Volume	Hourly Design Capacity	P.M. Peak Hour Volume	Peak Hour LOS
I-10						
At Hayfield Exit	Freeway	4	48,300	8,800	4,800	A
At Route 177	Freeway	4	46,000	8,800	4,600	A
At Mesa Drive Exit	Freeway	4	43,400	8,800	4,700	A
At Route 78	Freeway	4	44,700	8,800	4,700	A
SR-177						
N of Desert Center	2-lane Rural Hwy	2	6,050	3,000	680	A

Note:
a.Estimated number of Vehicles per day from Caltrans (2004a)
b. Maximum number of vehicles per hour in both directions.
c. Peak hour number of vehicles per hour from Caltrans (2004a)
Source: BEPTL, p. 5.10-4

Table 2 demonstrates that these roadways experience relatively low traffic volumes, and all have a rating of LOS A. Although LOS levels were not available for rural roadways identified under the Setting Section of the analysis, staff has assumed that LOS levels would be consistent with traffic volumes identified in **TRAFFIC AND TRANSPORTATION TABLE 2.**

Airport

The Blythe Airport is located approximately 1.2 miles west of the Buck Substation. Regional access to the airport is from I-10 at the Mesa Drive interchange. The airport is operated as a municipal general aviation facility and provides regional air services under the Essential Airports Service Subsidy Program. There are two operating runways at Blythe Airport. Runway 8-26 (oriented east-west) is the primary runway and is 6,562 feet long, and 150 feet wide. Runway 17-35 (oriented north-south) is 5,820 feet long, and 100 feet wide. Activity at the airport consists of an average of 67 aircraft operations (i.e., take-offs or landings) per day (Internet-site airnav.com, 2000).

The transmission line poles would be 110 feet in height, and would be 2,930 feet from the nearest runway at the Blythe Airport. The City of Blythe has expressed a concern

that the proposed new transmission line could conflict with airport operations. This potential issue is also discussed in the **Land Use** section of this analysis. The applicant has submitted a FAA Form 7460 "Notice of Proposed Construction or Alteration" for the project, and is awaiting a written determination from the FAA regarding the effect, if any, of the poles on navigable air space. An application has also been submitted to the Riverside Airport Land Use Commission for its review and consistency finding with the Comprehensive Land Use Plan for the Blythe Airport.

Public Transportation

Local bus service in the greater Blythe area is provided by the Palo Verde Valley Transit Agency. Greyhound Bus Lines provides bus service outside of the region. The project area is not directly served by either local or regional bus service.

Railways

There are two railways in the vicinity of the proposed modifications. The Arizona & California Railroad is located near the center of the City of Blythe, approximately 4.5 miles east of the Buck substation. It will not be crossed by either of the proposed modification components.

The Eagle Mountain Railroad is located near Desert Center, and the line runs southwest to north crossing I-10 and terminates at the proposed Eagle Mountain Landfill and townsite. The proposed Buck to Julian Hinds transmission line component would cross the Eagle Mountain Railroad approximately 4.5 miles southwest of the Julian Hinds Substation. This rail line is currently inactive, but is proposed to be used if the Eagle Mountain Landfill proposal is approved. Since this area is within a sensitive biological area, environmental groups have filed lawsuits which are pending. Therefore, staff has assumed that the railroad will remain inactive during the project's planned construction period.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a project may have a significant effect on traffic and transportation if the project will:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);
- exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

DIRECT/INDIRECT IMPACTS AND MITIGATION

Construction Impacts and Mitigation (Buck to Julian Hinds Component followed by Buck to Devers- Palo Verde Component)

As reflected in this analysis, I-10 and SR-177 are the primary project traffic carriers. LOS levels provided by Caltrans were used in the following tables to determine roadway impacts. The traffic analysis focuses on the project's two segments:

- Buck to Julian Hinds
- Buck to Devers-Palo Verde (DPV)

The following discussion identifies potential traffic impacts associated with the construction of the BEPTL, and provides an explanation of the impact conclusion.

The amendment application provides an analysis of expected year 2005 traffic conditions and expected 2005 traffic conditions with the addition of project construction traffic trips. Project construction would be completed in 12 to 18 months, with the project's two segments likely to be built sequentially. The average number of construction workers would be approximately 60, while the peak workforce would consist of approximately 162 workers (during construction of both substations). The transmission line construction workers and delivery vehicles will handle a section at a time along the approximately 65-mile transmission line route.

Construction Traffic and Level of Service

Construction Workforce Traffic

Staff concurs with the applicant's assumption that the construction workforce would have an average automobile occupancy (AAO) of 1.5 persons per vehicle for commuting. Tables 3 and 4 present summaries of the round trip generation for the sequential construction phases of the project. The proposed project will generate an average of 59 vehicle round trips per day on an average construction period and approximately 149 vehicle round trips during peak construction.

Construction Truck Traffic

Construction of the transmission line poles would require the use and installation of heavy equipment and associated systems and structures. Heavy equipment that would be used throughout the construction period includes cranes, cement mixers and drilling equipment. Transmission line construction workers and delivery vehicles will be dispersed along the approximately 65-mile transmission line route.

The applicant stated that it expects that construction workers and delivery trucks would commute from the west to the proposed sites equally from the greater Riverside area, and from the east from the greater Blythe area using I-10 as the primary traveled route. It is unlikely that construction workers would commute from SR 177. This route is a junction to I-10 at Desert Center and is used as a reference roadway in this analysis, to indicate traffic levels on a highway in the vicinity of I-10.

Traffic and Transportation Table 3 provides data on project construction worker and truck trip generation, for the Buck to Julian Hinds segment, and Table 4 provides similar data for the Buck to Devers-Palo Verde segment. As shown in Table 3, a slight increase in workers will occur due to installation of a double circuit on the transmission line section from Buck to the Midpoint substation.

Traffic and Transportation Table 3
Construction Trip Generation Phase (Buck to Julian Hinds)

Traffic Source	Daily Round Trips at Non-Peak Hours		Peak Hour Round Trips[3]	
	Average Months	Peak Period Months[1]	Average Months	Peak Period Months[1]
Transmission Line				
Construction Worker	13	36	10	29
Vehicles[2]	8	16	1	2
Delivery Truck				
Buck Substation				
Construction Worker	13	36	10	29
Vehicles[2]	6	16	1	2
Delivery Trucks				
Julian Hinds Substation				
Construction Worker	13	36	10	29
Vehicles[2]	6	9	1	1
Delivery Trucks				
Total	**59**	**149**	**33**	**92**

Source: BEPTL, p. 5.10-11

[1] Peak refers to scheduled peak months of construction activity

[2] Assumes 1/3 of workers carpool (1.5 persons per vehicles).

[3] Assumes 80% of workers and 10% of deliveries arrive or depart during peak traffic hour.

Traffic Source	Daily Round Trips at Non-Peak Hours		Peak Hour Round Trips[3]	
	Average Months	Peak Period Months[1]	Average Months	Peak Period Months[1]
Transmission Line				
Construction Worker	13	36	10	28
Vehicles[2]	4	10	1	1
Delivery Truck				
Buck Substation				
Construction Worker	13	35	10	28
Vehicles[2]				
Delivery Trucks	6	16	1	2
Midpoint Substation				
Construction Worker	13	33	10	26
Vehicles[2]	5	10	1	1
Delivery Trucks				
Total	**54**	**129**	**33**	**81**

Source: BEPTL, p. 5.10-11

[1] Peak refers to scheduled peak months of construction activity

[2] Assumes 1/3 of workers carpool (1.5 persons per vehicles).

[3] Assumes 80% of workers and 10% of deliveries arrive or depart during peak traffic hour.

Traffic and Transportation Table 5 provides data on the combination of existing traffic, plus expected levels of traffic associated with the proposed project for the Buck to Julian Hinds segment, and Table 6 provides similar data for the Buck to Devers-Palo Verde segment. For a worst case estimate, all construction traffic was added to each of the intersections. Actual traffic would be less because there are nine I-10 exits that could be used for access to the transmission line route and substation sites.

Traffic and Transportation Table 5
Construction Phase- Existing Project-Generated Traffic During Peak Construction Month (Buck to Julian Hinds)

Road or Highway	Existing Plus Project Traffic[1]		Capacities		V/C (LOS)	
	AADT	Peak Hour Traffic	AADT	Peak Hour Traffic	AADT	Peak Hour Traffic
I-10						
	48,359	4,892	80,000	8,800	0.60 (A)	0.56 (A)
At Hayfield	46,059	4,692	80,000	8,800	0.57 (A)	0.56 (A)
At Route 177						
At Mesa Drive	43,459	4,792	80,000	8,800	0.54 (A)	0.53 (A)
	44,759	4,792	80,000	8,000	0.56 (A)	0.53 (A)
At Route 78						
SR-177 N. of Desert Center	6,109	772	12,000	3,000	0.50 (A)	0.04 (A)

(1) Existing traffic from Table 2

Traffic and Transportation Table 6
Construction Phase- Existing Project-Generated Traffic During Peak Construction Month (Buck to Devers-Palo Verde)

Road or Highway	Existing Plus Project Traffic[1]		Capacities		V/C (LOS)	
	AADT	Peak Hour Traffic	AADT	Peak Hour Traffic	AADT	Peak Hour Traffic
I-10						
	43,455	4,789	80,000	8,800	0.56 (A)	0.56 (A)
At Hayfield	44,755	4,789	80,000	8,800	0.55 (A)	0.53 (A)
At Highway 78						
[1] Existing traffic from Table 2						

Traffic and Transportation Tables 5 and 6 demonstrate that project construction worker traffic would not change LOS levels during peak periods at the above listed intersections.

Construction Phase Transport of Hazardous Materials and Waste

Deliveries would include small quantities of hazardous materials such as petroleum products and hydraulic fluids to be used during project construction, and during the preconstruction period contamination solids from cleanup operations would be removed. The applicant has stated that the deliveries of hazardous materials to and from the various sites would be conducted in accordance with federal and State laws.

Oversize and Overweight Loads

Transportation of equipment that would exceed the load size and limits of certain roadways would require special permits from the Caltrans. California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code 35780 et seq., require permits for the transportation of oversized loads on State and county roads. By law, Energy Commission certification takes the place of all necessary State, local and regional permits. However, staff typically requires applicants to get permits from Caltrans for oversized loads, encroachment and activities within road right-of-ways. Condition of Certification **TRANS-2** in the original application for the Blythe Energy Project (BEP) requires that the applicant secure necessary encroachment permits from local and state agencies for encroachment rights within their right-of-way. The BEPTL project will continue to comply with this condition.

There are no height/weight restrictions or maximum street capacities for Riverside County roadways and highways in the project construction truck route. Condition of Certification **TRANS-1** in the original application for the BEP requires the applicant to comply with County and Caltrans vehicle size and weight requirements. The BEPTL project will continue to comply with this condition. Condition of Certification **TRANS-6** in this analysis requires a road mitigation plan for any roads damaged by oversize or overweight vehicles. This condition is required as the original BEP specified various roads for inspection of damage.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would parallel the existing D-PV power line path adjacent to an existing ROW in an orange grove. The following is staff's evaluation of the City of Blythe's proposed alternative route.

ALTERNATIVE ROUTE EVALUATION

The City of Blythe's proposed realignment of transmission line power poles near the Blythe Municipal Airport would affect approximately two acres of orange trees which would need to be removed, with the land owner compensated. The realignment option does not create any traffic and transportation issues or significant impacts, as the current dirt access roads in the area will continue to be used.

Operation Impacts and Mitigation

Employee and Truck Traffic

Operation of the substations and occasional maintenance of the transmission lines will not require any additional labor force. Other project-related trips (i.e., delivery trucks to the substation sites), are expected to be minor additions to surrounding local streets and highways and would not significantly affect the LOS levels of these roads.

Transport of Hazardous Materials and Waste

The transportation and handling of hazardous substances associated with the project can increase roadway hazard potential. Impacts associated with hazardous material transport to the substations can be mitigated to a level of insignificance by compliance with existing federal and State standards established to regulate the transportation of Hazardous Substances. Condition of Certification **TRANS-3** in the original BEP requires compliance with federal and State regulations for hazardous materials transport. The BEPTL project will continue to comply with this condition.

The project would generate hazardous wastes which are typically used during the construction of transmission line projects, including propane, fuel additives such as antifreeze, lubricating grease, insulating oils, and various cleaners. The applicant has stated that these trips would generally occur on a daily basis during the construction period, and proper implementation of procedures designed to ensure safe transportation of hazardous materials would be in accordance with federal and state LORS discussed earlier in this analysis.

The handling and disposal of hazardous substances are also addressed in the **WASTE MANAGEMENT, WORKER SAFETY AND FIRE PROTECTION** and **HAZARDOUS MATERIALS** sections of this report.

Emergency Response

A County of Riverside fire station (Station 45) is located on Hobsonway Way in Blythe, California, about 6 miles west of the Blythe Power Plant site. The nearest hospital is the Palo Verde Hospital, a 55 bed acute Care Facility also located on North First Street, and is approximately 7 miles west of where the project will begin, which is near the Blythe Power Plant site.

Airport Operations

In early November 2004, the applicant filed the FAA Form 7460. This is to comply with federal law which applies to virtually every construction project from grading terrain to erecting buildings or towers which extend 200-feet or greater above natural terrain or are located within 5 miles of an airport. The law requires that each project developer file a notice with the Federal Aviation Administration regarding the proposed height of any structures. Since the Blythe Airport is located within the 5 mile radius of the proposed transmission poles, the filing of the FAA Form 7460 is required. No structures proposed for the BEPTL project will be above the 200-foot criteria. Staff reviewed the information contained in the FAA application and found the application to be consistent with federal rules regarding physical obstruction of navigable air space.

To date, Energy Commission staff has not received the FAA's written determination on the applicant's filing of an FAA Form 7460. In discussions with the applicant, they have agreed that any forthcoming conditions required by the FAA will be followed.

CUMULATIVE IMPACTS AND MITIGATION

The analysis of the available capacity of the regional highways and local roads described in this section shows that the regional transportation system serving the BEPTL area (along the potentially affected highways) is operating at very efficient levels of service with significant reserve capacity. The two primary highways and the primary local roadways operate at LOS A.

The only other significant potential development proposed for the BEP area is the Blythe Airport Industrial Park site located 3.5 miles west of the Buck Substation. No definite time frame for the development of the Blythe Airport Industrial Park has been established by either Riverside County or the City of Blythe. This project is expected to be defined within the Blythe Airport Master Plan Update which is currently underway.

RESPONSE TO PUBLIC COMMENTS

No comments received.

COMPLIANCE WITH LORS

The Applicant has stated its intention to comply with all applicable LORS. With adoption of the recommended conditions, staff has concluded that the project will comply with relevant LORS.

CONCLUSIONS

Provided that the Applicant continues to comply with the Blythe Energy Project construction traffic control and implementation program and follows all LORS acceptable to Caltrans, the County of Riverside, and the City of Blythe for the handling of hazardous materials, and the securing of necessary transportation permits from Caltrans and all relevant jurisdictions, the project will result in less than significant impacts as to traffic and transportation issues.

Until such time that staff has reviewed the FAA written determination (FAA Form 7460), and the recommendations from the Riverside Airport Land Use Commission, the project's environmental analysis for air traffic safety cannot be completed.

RECOMMENDATION

If the Energy Commission certifies the BEPTL, staff recommends that the Commission adopt staff's proposed conditions of certification. These conditions will ensure that traffic and transportation related problems will be resolved in a manner consistent with Federal, State, County, and local LORS.

PROPOSED CONDITIONS OF CERTIFICATION

TRANS-6 Following completion of substation and transmission line construction, the project owner shall repair any damage to area roadways incurred during construction of the project to pre-project construction conditions. Prior to start of construction, the project owner shall photograph, videotape or digitally record images of roadways that would be impacted by the transmission line and substation construction traffic. The project owner shall provide the CPM, the County of Riverside, the City of Blythe, and Caltrans (as necessary) with a copy of the images for their respective roadway system.

Verification: Within 30 days after completion of the BEPTL construction, the project - owner shall meet with the CPM, the City of Blythe, the County of Riverside, and Caltrans (as needed) to determine the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near original condition as possible. Following completion of any regional road repair, the project owner shall provide to the CPM a letter from the City of Blythe, County of Riverside, and Caltrans if work occurred within their jurisdiction stating their satisfaction with the repairs.

REFERENCES

BEPTL (Blythe Energy Project Transmission Line Modification) 2004a: Petition for Post-Certification Amendment. October, 2004.

BEPTL (Blythe Energy Project Transmission Line Modification) 2004b: Applicant's Data Responses. November 29, 2004.

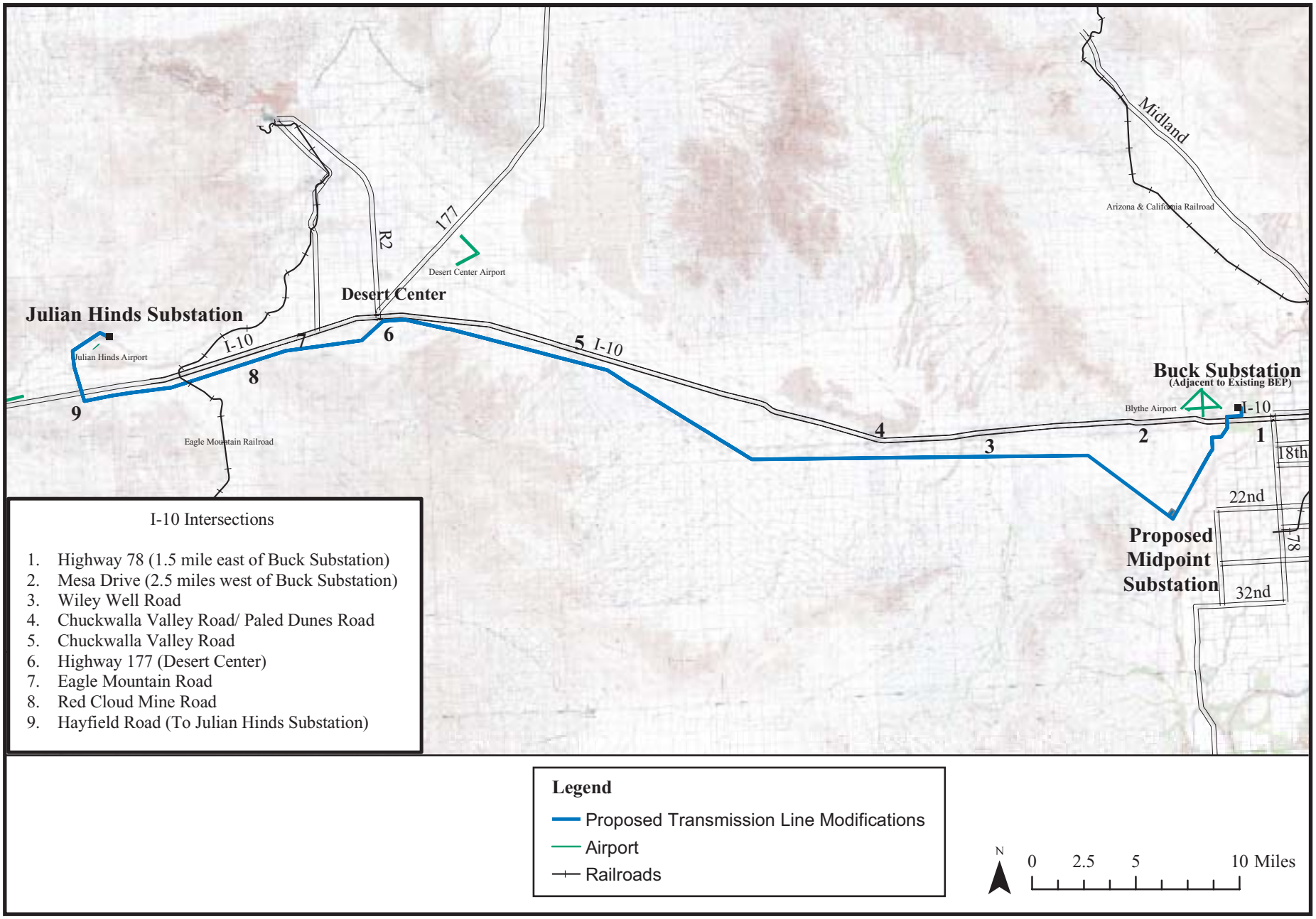
Riverside County Regional Transportation Plan 2001.

Riverside County Transportation and Land Management Agency. 2003

Blythe Municipal Airport, Comprehensive Land Use Plan. 1998.

TRAFFIC AND TRANSPORTATION - FIGURE 1

Blythe Energy Transmission Line Project - Regional Transportation Setting

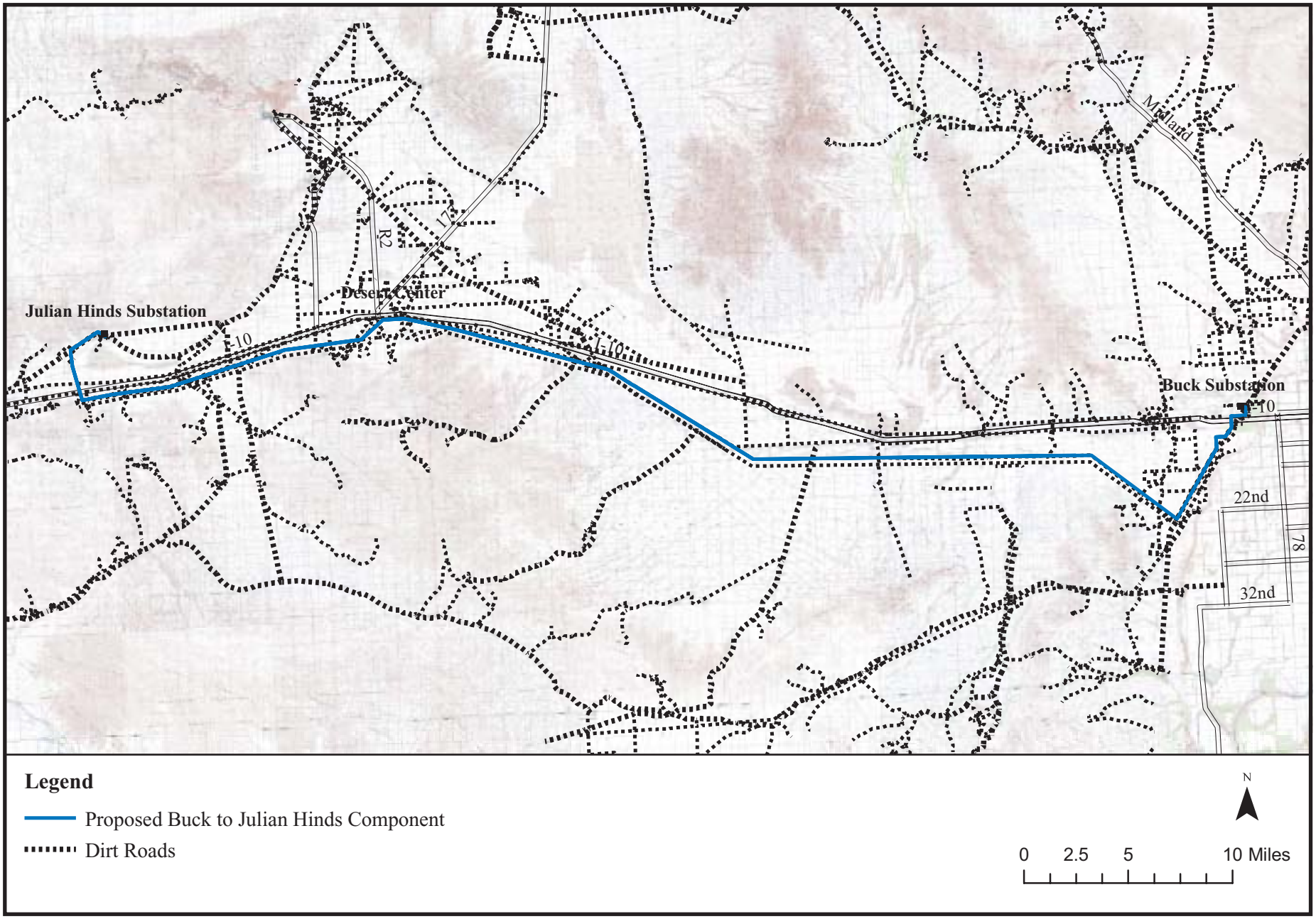


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: AFC October, 2004, Figure 5.10-1

TRAFFIC AND TRANSPORTATION - FIGURE 2

Blythe Energy Transmission Line Project - Existing Access Roads-Buck to Julian Hinds

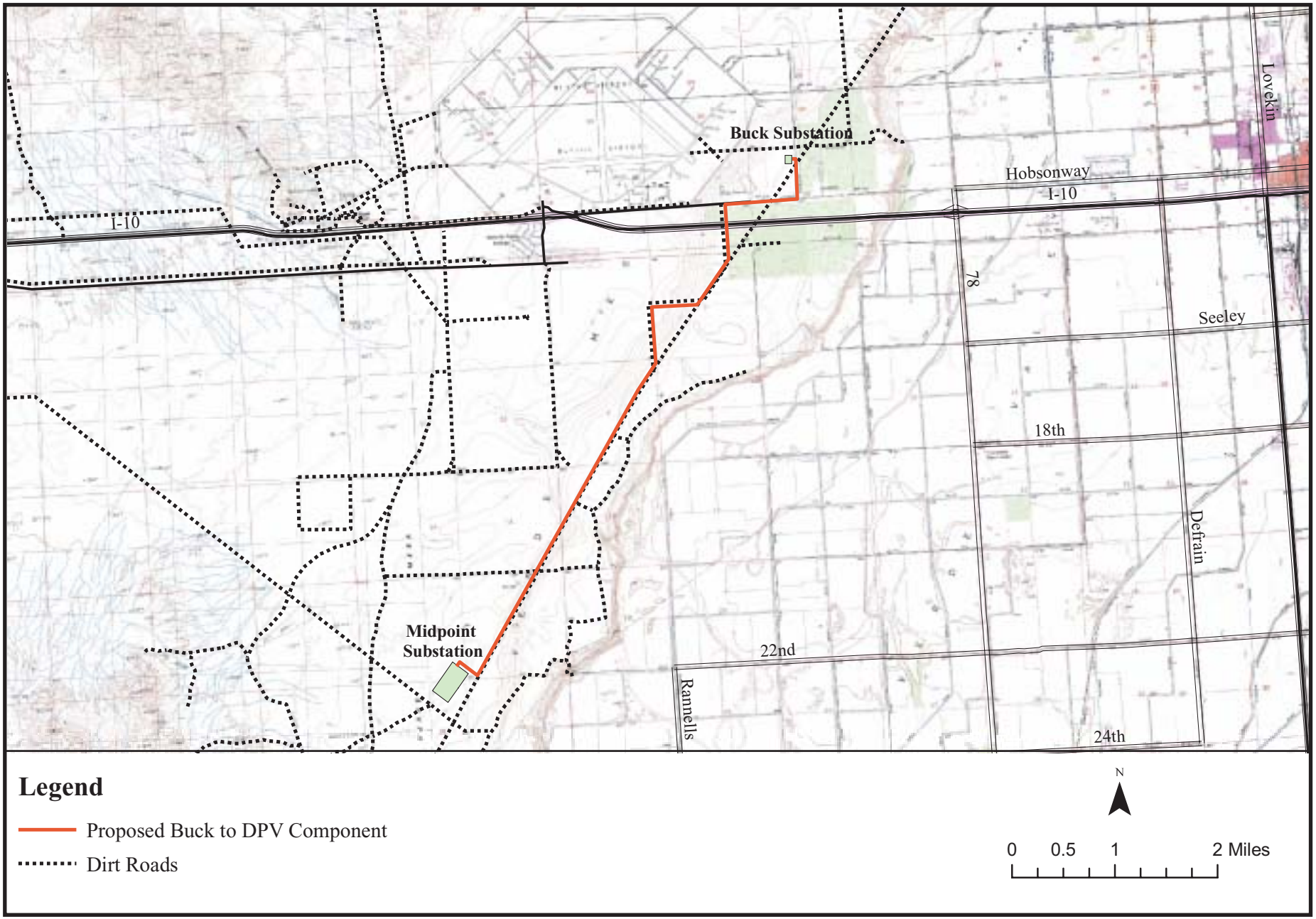


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: AFC October, 2004, Figure 5.10-2

TRAFFIC AND TRANSPORTATION - FIGURE 3

Blythe Energy Transmission Line Project - Existing Access Roads-Buck to Devers-Palo Verde



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: AFC October, 2004, Figure 5.10-3

TRANSMISSION LINE SAFETY AND NUISANCE

Obed Odoemelam, Ph.D.

SUMMARY OF CONCLUSIONS

The design and operational plan for the proposed Blythe Energy Project Transmission Line would be adequate to ensure that the generated electric and magnetic fields are managed to an extent the California Public Utilities Commission (CPUC) considers appropriate in light of the available health effects information. The related long-term magnetic exposure of particular health concern would be insignificant given the general absence of residences along the proposed route. On-site worker or public exposure would be short-term and at levels expected for Western and SCE lines of similar designs and current-carrying capacity. Since the proposed design would be adequate to minimize the safety and nuisance impacts of specific concern to staff, and the line would be located along a route with no nearby residences, staff does not recommend further mitigation and recommends approval of the proposed design and operational plan. Staff recommends specific conditions of certification to ensure implementation of the applicant's proposed mitigation measures along with the field strength measurements needed to verify the effectiveness of these measures.

INTRODUCTION

The purpose of this Preliminary Staff Assessment (PSA) is to assess the proposed Blythe Energy Transmission Line Modification Project for incorporation of the measures necessary to minimize the related field and non-field impacts whose reduction remains the focus of current laws, ordinances, regulations and standards (LORS). If the incorporation plan is found adequate, staff would recommend approval with respect to the issues of concern in this analysis; if not, staff would recommend revisions as appropriate. Staff's analysis focuses on the following issues as related primarily to the physical presence of the lines and related facilities, or secondarily, to the physical interactions of their electric and magnetic fields:

- aviation safety,
- interference with radio-frequency communication,
- audible noise,
- fire hazards,
- hazardous shocks,
- nuisance shocks, and
- electric and magnetic field (EMF) exposure.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

TRANSMISSION LINE SAFETY AND NUISANCE TABLE 1
Laws, Ordinances, Regulations and Standards (LORS)

Applicable LORS	**Description**
Aviation Safety	
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards
FAA Advisory Circular No. 70/7460-2H, " Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, Section 15.2524, Federal Communications Communication (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication
State	
California Public utilities Commission (CPUC) General Order 52 (GO 52)	Governs the construction, and operation of power and communications lines to prevent or mitigate interference
Audible Noise	Not to exceed applicable local noise ordinances – (no design-specific federal or state regulations for noise from transmission lines)
Hazardous and Nuisance Shocks	
State	
CPUC GO-95, "Rules for Overhead Electric Line Construction"	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements
Title 8, California Code of regulations (CCR) Section 2700 et seq, "High Voltage Safety Orders"	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment

Applicable LORS	Description
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks
Industry Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations"	Specifies the Guidelines for grounding-related practices within the right-of-way and substations
Electric and magnetic Fields	
State	
GO-131-D, CPUC "Rules for Planning, and Construction of Electric Generation Line and Substation Facilities in California"	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields
Industry Standards	
American national Standards Institute (ANSI/IEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line
Fire Hazards	
State	
14 CCR Sections 1250-1258, "Fire Prevention Standards for Electric Utilities"	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specify when and where standards apply
GO-95, CPUC, "Rules for Overhead Electric Line Construction," Section 35	Covers all aspects of design, construction, operation, and maintenance of electrical transmission line and fire hazards

SETTING

According to information from the applicant, Blythe Energy LLC (Blythe Energy 2004a, pages 3-1 through 3-19, 5.6-1 through 5.6-7, and 5.14-1), the Buck Substation to Julian Hinds Substation (Buck to Julian Hinds) segment of the project lines would be routed through sparsely populated desert and mountainous areas with no residences in the immediate vicinity. The Buck Substation to Southern California Edison's (SCE's) 500 kV Devers to Palo Verde line would similarly be routed through sparsely populated desert and mountainous areas with no nearby residences. The point of connection to the SCE line would be a new facility, the Midway Substation. The nearest residence to the entire project lines and related substations is in Hayfield where that residence would be

approximately 500 feet away from the right-of-way. The lack of residences along the 67.4-mile length of the Buck to Julian Hinds and 6.7-mile length of the Buck to Midpoint Substation would minimize the potential for the residential EMF exposure at the root of the present health concern. The only project-related exposures of potential significance would be the short-term exposures to plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in transit under the project's lines. These types of exposures are short-term and well understood as not significantly related to the present health concern.

As more fully noted in the **Project Description** section, the proposed line modification project will consist of the segments listed below:

- The Buck to Julian Hinds segment, which is an overhead 230-kV line extending the 67.4 miles from Western Area Power Administration's (Western's) Buck Substation located adjacent to the Blythe Power Project, to SCE's Julian Hinds Substation to the west
- Project-related upgrades to Buck Substation and Julian Hinds Substation
- The 230 kV overhead line, initially operated at 161 kV, and extending southwestwards over the 6.7 miles from the Buck Substation to the interconnection point (the new Midpoint Substation) for the SCE's 500 kV Devers to Palo Verde transmission line.

The basic configuration of the proposed lines would derive from Western and SCE safety and field-reducing design guidelines as applied to their respective 230-kV lines of a similar current-carrying capacity. For the Buck to Julian Hinds segment, a minimum ground clearance of approximately 27 feet would be maintained. The width of the right-of-way would vary between 95 feet and 100 feet according to conditions. The support structure would be a single-pole concrete or concrete/steel hybrid support whose height would mostly vary between 75 feet and 125 feet depending on the terrain. Approximately 444 of these supports would be used, with each placed approximately 820 feet apart.

The support structures for the Buck to the Midpoint Substation line would be concrete poles that would also carry the Buck to Julian Hinds line. The applicant has provided representations of the physical dimensions of all proposed support structures as related to safety, reliability, and field strength reduction (Blythe Energy 2004a, pages 3-9 and 3-10). This Buck to Midpoint Substation segment would be routed adjacent to an existing Imperial Irrigation District (IID) 161 kV line further pointing to the intended use of existing line corridors as is present state policy. The Buck to Julian Hinds line would similarly be located along most of its length adjacent to an existing line, the SCE 500 kV line (Blythe Energy 2004a, page 3-2).

Since the proposed project lines would be designed and operated according to standard Western and SCE practices, their design-driven field strengths (and, therefore, potential contribution to existing area field levels) should, according to present CPUC policy, be at the same level as for Western and SCE lines of the same voltage and current-carrying capacity.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHODS AND THRESHOLDS FOR DETERMINING SIGNIFICANCE

The potential magnitude of the line impacts of concern in this PSA depends on compliance with the listed LORS whose related mitigation measures have been established as adequate to maintain such impacts below levels of potential significance. Thus, if staff determines that the project would comply with applicable LORS, we would conclude that any transmission line-related safety and nuisance impacts would be less than significant. The nature of these individual impacts is discussed below together with the potential for compliance with the LORS that apply.

DIRECT IMPACTS AND MITIGATION

Aviation Safety

Any potential hazard to area aircraft would relate to the potential for collision in the navigable air space and the need to file a "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA as noted in the LORS section above. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. FAA notification is required for support structures of over 200 feet and under the other identified (slope- and length-related) conditions in cases of heights below the 200 foot threshold. The dimensions of the restricted airspace are specified according to the lengths of the specific runways involved. For airports with runways of longer than 3,200 feet, the restricted airspace would extend to 20,000 feet from the runway. For airports with runways of 3,200 feet or less, the restricted air space would be reduced to 10, 000 feet. For heliports, the restricted air space would be 5,000 feet.

As noted by the applicant (Blythe Energy 2004a, pages 5.6-9 and 5.6-10 and 5-9 and 5.10-8), the height of the structural support for the proposed project lines would (at a general maximum of 125 feet) be significantly below the 200 feet regarded by the FAA as triggering the height-related concern (and notification) about aviation safety for all area airport. Upon such notification, the FAA would conduct its safety assessment and issue a related permit as appropriate. The proposed project lines would generally be routed to the extent feasible alongside existing lines of higher or similar voltage.

The nearest airport to the proposed project lines and related facilities is an airstrip, the Julian Hinds Pump Plant Airstrip, located 0.5 miles to the southwest of the Julian Hinds Substation and without a notification-triggering runway length. The Blythe Airport is located at least 1.2 miles away from the Buck Substation and the proposed line routes. However, it has two notification-triggering runways (Runway 8/26 at 6, 562 feet and Runway 17/35 at 5,820 feet), the closer of which is 2,930 feet from the nearest of the transmission line poles. The Airport's Master plan considers extending Runway 8/26 to 7,000 feet to accommodate larger aircraft. Given the potential safety concerns (as reflected by the existing or future lengths of the two identified runways), the City of Blythe has suggested routing the project's Transmission Lines Poles 9 through 17 through an alternative route that would follow the existing Devers-Palo Verve line path

through an existing right-of-way in an orange grove. Since this would further remove the line section from the Blythe Airport runways of concern, staff supports this suggested re-routing even without a significant collision potential on the basis of height alone.

The two runways of the Desert Center Airport's are located three miles to the north at the nearest pole lines. Given (a) the orientation of their respective runways in relation to the relevant project lines or related substations and (b) that the maximum height of the proposed project-related structures and substations, would be below the heights of concern over aircraft safety, staff considers the proposed project lines and related facilities as unlikely to pose a significant obstruction-related aviation hazard to utilizing aircraft as defined using current FAA criteria. Therefore, no FAA "Notice of Construction or Alteration" would be required with respect to this airport.

Interference with Radio-Frequency Communication

Transmission line-related radio-frequency interference is one of the indirect effects of line operation and is produced by the physical interactions of line electric fields. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge, but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The level of any such interference usually depends on the magnitude of the electric fields involved and the distance from the line. The potential for such impacts is therefore, minimized by reducing the line electric fields and locating the line away from inhabited areas.

The proposed lines would be built and maintained according to standard Western or SCE practices that minimize surface irregularities and discontinuities. Moreover, the potential for such corona-related interference is usually of concern for lines of 345-kV and above, and not the proposed 230 kV lines. Low-corona designs would be used as with Western and SCE lines of similar voltage rating. Since these existing lines do not currently produce the corona-related complaints in these sparsely populated areas, staff does not expect any corona-related radio-frequency interference or related complaints in the general project area.

Audible Noise

The noise-reducing designs against electric field intensity are not specifically mandated by federal or state regulations in terms of specific noise limits. As with radio noise, such noise is limited instead through design, construction or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency, maintainability, and reliability. Audible noise usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying, or hissing sound or hum, especially in

wet weather. Since the noise level depends on the strength of the line electric field, the potential for perception can be assessed from estimates of the field strengths expected during operation. Such noise is usually generated during rainfall, but mainly from overhead lines of 345-V or higher. It is, therefore, not generally expected at significant levels from those of less than 345-kV as proposed for this modification project. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing the fair-weather audible noise from modern transmission lines to be generally indistinguishable from background noise at the edge of a 100-ft right-of-way.

The low-corona design to be used for the proposed lines are the same that are used for similar Western and SCE transmission lines to minimize the potential for corona-related audible noise. This means, as reflected by electric field strengths (Blythe Energy 2004a, pages 5.14-8 through 5.14-10), that the proposed line operation would be unlikely to add significantly to current background noise levels in the project area. For an assessment of the noise from the proposed lines and related facilities, please refer to staff's analysis in the **Noise and Vibration** section.

Fire Hazards

The fire hazards addressed through the above-referenced LORS are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects.

Standard fire prevention and suppression measures for all Western and SCE lines would be implemented respectively for the proposed project lines (Blythe Energy 2004a, pages 5.14-6, 5.14-7 and 5.14-14 and 5.14-15). The applicant's intention to ensure compliance with the clearance-related aspects of GO-95 would be an important part of this compliance approach. Moreover, the line would be located in a mostly desert area without the trees that could pose a fire hazard from line contact.

Hazardous Shocks

Hazardous shocks are those that could result from direct or indirect contact between an individual and the energized line, whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines.

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the industry from compliance with the requirements specifying the minimum national safe operating clearances applicable in areas where the line might be accessible to the public.

The applicant's stated intention to implement the GO-95- related measures against direct contact with the energized line (Blythe Energy 2004a, pages 5.14-14 and 5.14-15) would serve to minimize the risk of hazardous shocks. Staff's recommended condition of certification **TLSN-1** would be adequate to ensure implementation of the necessary mitigation measures.

Nuisance Shocks

Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line electric and magnetic fields.

There are no design-specific federal or state regulations to limit nuisance shocks in the transmission line environment. For modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). As with the proposed project lines, the applicant will be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way.

The potential for nuisance shocks around the proposed line would be minimized through standard industry grounding practices (Blythe Energy 2004a, page 5.14-14).

Electric and Magnetic Field Exposure

The possibility of deleterious health effects from EMF exposure has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of describing exposure to them together as EMF exposure. The available evidence as evaluated by CPUC, other regulatory agencies, and staff, has not established that such fields pose a significant health hazard to exposed humans. There are no health-based federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. Most regulatory agencies believe, as does staff, that health-based limits are inappropriate at this time. They also believe that the present knowledge of the issue does not justify any retrofit of existing lines.

Staff considers it important, as does the CPUC, to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Staff, therefore, considers it appropriate in light of present uncertainty, to recommend reduction of such fields as feasible without affecting safety, efficiency, reliability and maintainability.

While there is considerable uncertainty about EMF health effects, the following facts have been established from the available information and have been used to establish existing policies:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.
- The measures employed for such field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures.

State

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. It requires each utility within its jurisdiction to establish EMF-reducing measures and incorporate such measures into the designs for all new or upgraded power lines and related facilities within their respective service areas. The CPUC further established specific limits on the resources to be used in each case for field reduction. Such limitations were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Publicly owned utilities, which are not within the jurisdiction of the CPUC, voluntarily comply with these CPUC requirements. This CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013.

In keeping with this CPUC policy, staff requires a showing that each proposed overhead line would be designed according to the EMF-reducing design guidelines applicable to the utility service area involved. These field-reducing measures can impact line operation if applied without appropriate regard for environmental and other local factors bearing on safety, reliability, efficiency, and maintainability. Therefore, it is up to each applicant to ensure that such measures are applied in ways that prevent significant impacts on line operation and safety. The extent of such applications would be reflected by ground-level field strengths as measured during operation. When estimated or measured for lines of similar voltage and current-carrying capacity, such field strength values can be used by staff and other regulatory agencies to assess the effectiveness of the applied reduction measures. These field strengths can be estimated for any given design using established procedures. Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m), for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the support structures, degree of cancellation from nearby conductors, distance between conductors and, in the case of magnetic fields, amount of current in the line.

Since each new line in California is currently required by the CPUC to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved, its fields are required under this CPUC policy to be similar to fields from similar lines in that service area. Designing the proposed modification project lines according to existing Western and SCE field strength-reducing guidelines would constitute compliance with the CPUC requirements for line field management.

The CPUC is currently revisiting the EMF management issue to assess the need for policy changes to reflect the available information on possible health impacts. Any new policy revisions would be reflected in an appropriate supplement to this staff PSA.

Industrial Standards

The present focus is on the magnetic field because only it can penetrate soil, building and other materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic fields from the more visible

overhead transmission and other high-voltage power lines, staff considers it important, for perspective, to note that an individual in a home could be exposed to much stronger fields while using some common household appliances (National Institute of Environmental Health Services and the U.S Department of Energy, 1995). The difference between these types of field exposures is that the higher-level, appliance-related exposures are short-term, while the exposure from power lines are lower level, but long-term. Scientists have not established which of these types of exposures would be more biologically meaningful in the individual. Staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than around high-voltage power lines.

As with similar Western and SCE lines, specific field strength-reducing measures would be incorporated into the proposed line designs to ensure the field strength minimization currently required by CPUC in light of the concern over EMF exposure and health.

The field reduction measures to be applied include the following:

1. Increasing the distance between the conductors and the ground;
2. Reducing the spacing between the conductors;
3. Minimizing the current in the line; and
4. Arranging current flow to maximize the cancellation effects from interacting of conductor fields.

The applicant (Blythe Energy 2004a, pages 5.14-7 through 5.14-13) estimated the maximum electric and magnetic field intensities at three specific locations with and without existing area lines (Locations 1, 2, and 3) when the proposed project lines are in place (Blythe Energy 2004a, pages 5.14-3, 5.14-7, and 5.14-4). These existing lines are the Imperial Irrigation District's 161 kV Blythe to Eagle Mountain Line and SCE's 500 kV Devers to Palo Verde line. As more fully discussed by the applicant (Blythe Energy 2004a, pages 5.14-7 through 5.14-14), the maximum electric field intensity from the proposed project line would be 3.9 kV/m at the centerline, diminishing to 0.25 kV/m 150 feet from there and thereby reflecting the field reduction efficiency expected for SCE and Western lines of the same voltage. The maximum electric field contribution by these project lines at the existing point of maximum intensities was estimated as 0.004 kV/m, which staff considers insignificant.

The magnetic field strength at the point of maximum impact (Location 1 with the existing 161 kV IID line) was estimated as approximately 240 mG and would increase to a maximum of 287 mg from the introduction of the project lines. This would decrease to approximately 120 mG at one edge of a combined 300-ft right-of-way, and less than 50 mG at the other to reflect the interactions between the project and IID lines involved. These field intensities are within ranges that staff would expect for Western or SCE lines of the same voltage and current-carrying capacity. These estimates would be compared with the operational phase measurements required by proposed Condition of Certification **TLSN-3**. These edge of right-of-way field strengths are much lower than the 150- to 250-mG established (depending on voltage level) for the edges of the rights-of-way by the few states with regulatory limits on these line magnetic fields.

Since optimum field-reducing measures would be incorporated into the proposed line design, staff considers further mitigation to be unnecessary, but would seek to validate the applicant's assumed reduction efficiency from the recommended field strength measurements.

CUMULATIVE IMPACTS AND MITIGATION

Since the proposed modification project lines would be designed according to applicable field-reducing Western and SCE guidelines (as currently required by the CPUC for effective field management), staff expects the resulting fields to be similar in intensity to fields from Western and SCE lines of the similar voltage and current-carrying capacity. Any contribution to cumulative area exposures would be at similar levels. It is this similarity in intensity that constitutes compliance with current CPUC requirements on EMF management. The actual field strengths and contribution levels for the proposed line design would be assessed from the results of the field strength measurements specified in Condition of Certification **TLSN-3**.

COMPLIANCE WITH LORS

As previously noted, current CPUC policy on safe EMF management requires that any high-voltage line within a given area be designed to incorporate the field strength-reducing guidelines of the main area utility lines to be interconnected. The respective utilities in this case are Western and SCE. Since the proposed project lines and related substations would be designed according to the respective requirements of GO 95, GO 52, GO-131-D, and Title 8, Section 2700 et seq. of the California Code of Regulations and operated and maintained according to current Western and SCE guidelines on line safety and field strength management, staff considers the presented design and operational plan to be in compliance with the health and safety LORS of concern in this analysis. The actual contribution to the area's field exposure levels would be assessed from results of the field strength measurements required in Condition of Certification **TLSN-3**.

CONCLUSIONS

Since electric or magnetic field health effects have neither been established nor ruled out for proposed overhead modification project and similar lines, the public health significance of any related field exposures cannot be characterized with certainty. The only conclusion to be reached with certainty is that the proposed line design and operational plan would be adequate to ensure that the generated electric and magnetic fields are managed to an extent CPUC considers appropriate in light of the available health effects information. The long-term, mostly residential magnetic exposure at the root of the present health concern would be insignificant for the proposed lines given the general absence of residences along the proposed routes. On-site worker or public exposure would be short term and at levels expected for Western and SCE lines of similar designs and current-carrying capacity. Such exposure is well understood and has not been established as posing a significant human health hazard.

The potential for nuisance shocks would be minimized through grounding and other field-reducing measures to be implemented in keeping with current Western and SCE

guidelines (reflecting standard industry practices). These field-reducing measures would maintain the generated fields within levels not associated with radio-frequency interference or audible noise. The potential for hazardous shocks would be minimized through compliance with the height and clearance requirements of General Order 95. Compliance with Title 14, California Code of Regulations, Section 1250, will minimize fire hazards. Since the proposed lines and related facilities are not near enough to the nearest airport to pose an aviation hazard according to current FAA criteria, staff does not consider it necessary to recommend location changes on the basis of a potential hazard to area aviation. However, as discussed earlier, the City of Blythe has suggested routing the project's Transmission Lines Poles 9 through 17 through an alternative route that would follow the existing Devers-Palo Verve line path through an existing right-of-way in an orange grove. Since this would further remove the line section from the Blythe Airport runways of concern, staff supports this suggested re-routing even without a significant collision potential on the basis of height alone.
The use of low-corona line design, together with appropriate corona-minimizing construction practices, minimizes the potential for corona noise and its related interference with radio-frequency communication in the area around the proposed route.

Since the proposed project line would be designed to minimize the safety and nuisance impacts of specific concern to staff, and located mostly along the routes of existing lines in areas with no nearby residences, staff does not recommend further mitigation and recommends approval of the proposed design and operational plan. If such approval were granted, staff would recommend that the Energy Commission adopt the conditions of certification specified below to ensure implementation of the measures necessary to achieve the field reduction and line safety specified by the applicant.

PROPOSED CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission lines according to the requirements of CPUC's GO-95, GO-52, GO-131-D, Title 8, Group 2., High Voltage Electrical Safety Orders, Sections 2700 through 2974 of the California Code of Regulations, and Western's and SCE's EMF-reduction guidelines.

Verification: Thirty days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.**TLSN-2** The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields from the line before and after they are energized. Measurements should be made at representative points (a) along the proposed routes at locations 1, 2, and 3 for which specific field strengths were provided and (b) at similar locations, respectively for Western and SCE lines of the same voltage and similar current-carrying capacities. These measurements should be completed not later than 6 months after the start of operations.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields from the line before and after they are energized. Measurements should be made at representative points (a) along

the proposed routes at locations 1, 2, and 3 for which specific field strengths were provided and (b) at similar locations, respectively for Western and SCE lines of the same voltage and similar current-carrying capacities. ~~(1) along the edge of the right-of-way, (2) inside the right-of-way of the proposed lines and (3) along and inside the right-of-way of a Western line of the same voltage and current-carrying capacity.~~ These measurements should be completed not later than 6 months after the start of operations.

Verification: The project owner shall file copies of the pre-and postenergization measurements and measurement of a representative Western line, with the CPM within 60 days after completion of the measurements.

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VISUAL RESOURCES

David Flores

SUMMARY OF CONCLUSIONS

Energy Commission staff analyzed both the potential visual impacts of the proposed Blythe Energy Project Transmission Line Modifications (BEPTL) in accordance with the California Environmental Quality Act (CEQA), and the National Environmental Policy Act (NEPA), and the project's compliance with applicable laws, ordinances, regulations, and standards (LORS) pertaining to visual resources. Staff concludes that the proposed project would not cause significant visual impacts. Effective implementation of the applicant's proposed mitigation measures and staff's recommended conditions of certification would reduce visual impacts from the project to a less than significant level, and ensure that the project complies with applicable LORS regarding visual resources.

This section presents an assessment of potential visual resource impacts of the proposed project and alternatives. The impact assessment methodology is discussed, and potential impacts of the proposed project and alternatives are identified in this analysis.

INTRODUCTION

Visual resources are the natural and man-made features of the environment that can be viewed. This analysis focuses on whether construction and operation of the BEPTL would cause visual impact(s) under CEQA and NEPA, and whether the project would be in compliance with applicable LORS.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Staff has identified in **VISUAL RESOURCES Table 1** a preliminary listing of applicable LORS that staff has evaluated to determine the proposed project's compliance.

VISUAL RESOURCES Table 1
Laws, Ordinances, Regulations, and Standards

Jurisdiction & Applicable LORS	LORS Description
U.S Department of Transportation, State Scenic Highways 2002	Interstate 10, from its junction with State Route 62 to the Colorado River, is identified as a candidate route that should be included in the California State Scenic Highway Program, but has yet to be designated as an eligible or official scenic highway. Regardless of its designation, it is consistent with Riverside County's vision to protect the scenic value of this route.
Local *County of Riverside General Plan*	This plan serves as a guide for future development patterns in the Eastern Coachella Valley. The following sections of the Plan are applicable to the proposed project:
Light Element	As development continues to encroach from established urban cores into both rural and open space areas, the effect of nighttime lighting on stargazing and open space areas will become more pronounced. Wildlife habitat areas can also be negatively impacted by artificial lighting.
Scenic Highway	To conserve significant scenic resources along scenic highways for future generations, and to manage development along scenic highways and corridors so that it will not detract from the area's natural characteristics.
Light Pollution	As development continues to encroach into rural and open space areas, the effect of nighttime lighting on star-gazing and open space areas will become more pronounced. The intent is to limit light leakage and spillage that may obstruct or hinder the night sky view.
Slope	The Chuckwalla, Eagle, and Coxcomb Mountains play an integral part in establishing the character and atmosphere of Desert Center. While densities are limited in the Open Space-Rural land use designation, development that does occur must prevent or minimize the potential for erosion and landslides, **preserve significant views**, and minimize grading and scarring.
Palo Verde Valley Area Plan Desert Center Area Plan	These plans have identical policies. Both plans support the designation of Interstate 10 and US Highway 95 as eligible and subsequently Official Scenic Highways. The plans recommend protection of the scenic highways in the Desert Center-Palo Verde Valley planning areas from changes that would diminish the aesthetic value of adjacent properties.

SETTING

The following sections discuss the general visual characteristics along the proposed project and alternative transmission line alignments.

PROJECT DESCRIPTION

The BEPTL is to be situated in eastern Riverside County. The proposed project involves two distinct components; the Buck to Julian Hinds Transmission Component, and the Buck to Devers-Palo Verde Transmission Line Component. The applicant has proposed the use of concrete, single-pole transmission line structures.

The Buck to Julian Hinds Transmission Component alignment would follow an existing transmission line corridor, generally following Southern California Edison's (SCE) existing 500 kV Devers-Palo Verde transmission line paralleling the south side of U.S. Interstate10 (I-10), from the Buck Boulevard Substation (west of the City of Blythe, California) 67.4 miles to the Julian Hinds Substation.

The Buck to Devers-Palo Verde Transmission Line Component alignment would span approximately 6.7 miles south southwest from the Buck Boulevard Substation to SCE's existing Devers-Palo Verde 1 (D-PV1) 500 kV transmission line and the site of the proposed Midpoint Substation.

Vicinity

This area of the county consists of a variety of natural geographic features, including flat desert valleys, rolling sand dunes, stark hillsides and barren mountain ranges. Most foreground views along the transmission line route include the broad expanse of the Sonoran Desert back dropped by mountains. Some of the more prominent visual resource features include: several clustered mountain ranges, including the Orocopia, Chuckwalla, Little Chuckwalla, Eagle, Mule, Arica, Little Maria, Palen, McCoy, Pinto; and the Big Maria Mountains. These mountains can be generally described as rugged, rocky, and rising sharply from sea level. Vegetation is generally very sparse consisting of a desert mix shrub. Colors range from gray to brown to tan with a blotchy appearance. Man-made visual features within the vicinity of the transmission line route include: the City of Blythe, the Ironwood and Chuckwalla prisons, the Colorado River Aqueduct, I-10 and State Route 177 (SR 177), agricultural producing lands, and scattered rural residences. Electric power infrastructure (power plants, substations, transmission lines) is established in the area.

The proposed project transmission line alignment would be surrounded by sparse, desert vegetation and follow existing transmission line rights-of-way and maintenance roads for much of its length. Much of the land within the existing corridor has been disturbed by activities, maintenance roads, and facilities associated with the existing transmission lines within the area.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

REGULATORY SETTING

Federal

The Federal Land Policy and Management Act of 1976 (FLPMA) establishes guidelines for the administration, management, protection, development, and enhancement of public lands. Section 102 (a)(8) of the Act emphasizes that public lands be managed in a manner that will protect the quality of scientific, **scenic**, historical, ecological, environmental, air and atmospheric, water resource, and archeological values. Section 101 (b) of NEPA requires that measures be taken to ensure that aesthetically pleasing surroundings be retained for all Americans.

To meet its responsibility to maintain the scenic value of public lands, the BLM has developed the Visual Resource Management (VRM) system. The VRM system is implemented through the Resource Management Plan (RMP) and the Management Framework Plan (MFP) process. Visual resources are to be considered in all BLM planning and environmental assessment documents. The BLM contrast rating system is used for this analysis to determine potential visual impacts of the proposed project and alternatives under consideration in this document, and is discussed in more detail below in the Visual Resource Management System-Visual Contrast Rating.

State

The California Environmental Quality Act of 1972 (CEQA) provides an environmental review process for state and local agencies, boards and commission within California. The CEQA Guidelines define a “significant effect” on the environment to mean a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including...objects of historic or aesthetic significance” (California Code of Regulations, Title 14, Section 15382).

CEQA, Appendix G, provides a checklist of questions that a designated lead agency should normally address if relevant to a project’s environmental impacts. Specifically, the checklist contains the following questions pertaining to aesthetics that are posed as guideline for visual resources assessment.

Appendix G of the CEQA Guidelines, under Aesthetics, lists the following four questions to be addressed regarding whether the potential impacts of a project are significant:

a) Would the project have a substantial adverse effect on a scenic vista?

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

d) Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Local

County of Riverside

The project is within the boundaries of the County of Riverside General Plan, 1989. This plan serves as a guide for future development patterns in the Palo Verde Valley and the Desert Center Area. The applicable LORS associated with the proposed modification project are discussed in **Table 1** of this analysis.

METHODOLOGY AND SIGNIFICANCE CRITERIA

Affected Environment

The following is a description of visual resources present in the project area that could be affected by implementation of the proposed project and its alternatives. This discussion includes the development of existing and **interim** Visual Resource Management Classifications for various parts of the project area and their associated management objectives.

Visual Resource Inventory

The visual resource inventory process provides a means for determining the visual values of the landscape. Visual resource inventory classes are assigned through the inventory process based on scenic quality evaluations, sensitivity level analysis, and delineation of distance zones. BLM administered lands are placed into one of four visual resource inventory classes. These inventory classes represent the relative value of the visual resources, Classes I and II having the highest values, Class III representing moderate value and Class IV being of least value. Each of these classes is defined in more detail under the Visual Resource Management System section of this analysis.

The inventory classes only provide a basis for establishing visual values and do not establish management direction. The information provides a basis for considering visual values in the process.

Visual Quality

Visual quality is an expression of the overall visual impression or appeal of a given landscape and associated public value attributed to the visual resource. This analysis used an approach that considers visual quality to range from low to high. High visual quality would be considered “picture perfect” landscape. Low visual quality describes landscapes that are often dominated by visually discordant human alterations, and do not provide views that people would find inviting or interesting. The relevant physical properties of the environment include landforms, vegetation, water, color, scarcity, and cultural modifications.

Visual Sensitivity

Viewer sensitivity is a measurement of the level of interest or concern of viewers regarding the visual resources of an area. It is expressed as low to high. Viewer sensitivity can be determined in two ways, directly through evaluation of viewer attitudes or indirectly using viewer activities.

Distance Zones

Landscapes are subdivided into three distance zones based on relative visibility from travel routes or observation points. The three zones are foreground-middleground, background, and seldom seen.

Visual Resource Management System

Portions of the proposed project and alternative transmission line corridors would be located within areas administered by the BLM, and, as such, are subject to the BLM VRM System. BLM has developed an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality. Visual resources, as defined by the BLM, are the visible physical features of a landscape (e.g., land, water, vegetation, animals, structures, and other features). All land has inherent visual values which warrant different levels of management; it is neither desirable nor practical to provide the same level of management for all visual resources. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, while management of an area with little scenic value might allow for major modifications. Identifying an area's visual resources requires assessing the area's inherent scenic values (i.e., its visual appeal), assessing public concern for scenic quality, and developing appropriate management levels to protect it.

As a starting point, BLM conducts an inventory that evaluates the visual resources on all land under its jurisdiction (Inventory/Evaluation). Once inventoried and analyzed, lands are given relative Visual Resources Management ratings (VRM Classifications). VRM Class designations are derived from an analysis of:

- Scenic Quality (rated by landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modification);
- Viewer Sensitivity Levels (sensitivity of people to changes in the landscape) and;
- Distance Zones (visual quality of a landscape, as well as user reaction, may be magnified or diminished by the visibility of the landscape).

The BLM has established different objectives for each VRM Classification, with differing degrees of modifications allowed to the basic elements of the landscape (form, line, color, texture). The VRM Management Classification Objectives are defined as follows:

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements caused by management activity should not be evident in the characteristic landscape. Contrasts are visible, but must not attract attention.

Class III: Changes to the basic elements caused by management activity may be evident, but should remain subordinate to existing landscape.

Class IV: Any contrast may attract attention and be a dominant feature of the landscape in terms of scale, but should repeat the form, line, color, and texture of the characteristic landscape.

Class V: Natural characteristics of the landscape have been disturbed to a point where rehabilitation is needed to bring it up to one of the four other classifications. The classification also applies to areas where there is potential to increase the landscapes visual quality. It would, for example, be applied to areas where unacceptable cultural modification has lowered scenic quality; it is often used as an interim classification until objectives of another class can be reached.

When a site-specific project is proposed, the degree of contrast between the proposed activity and the existing landscape is measured (Contrast Rating). The contrast rating process compares the proposed activity with existing conditions element by element (form, line, color, texture) and feature by feature (land/water surface, vegetation, structures). The contrast rating is compared to the appropriate VRM Classification to determine if contrasts are acceptable. If the proposed project exceeds the allowable contrast, a BLM decision is made to (1) redesign, (2) abandon or reject, or (3) proceed, but with mitigation measures stipulated to reduce project contrast.

Interim Visual Resource Management Classifications and Objectives

Based on conversations with BLM and CEC staff, and after studying areas along I-10 in the Coachella Valley (west of the proposed modifications) where the BLM has established VRM classes, the applicant conducted an inventory and prepared their analysis using the BLM interim VRM classification process for both federal and non-federal lands.

Interim VRM classifications are established when a project is proposed and there are no RMP or Management Framework Plan-approved VRM classifications. These interim VRM classifications are developed using the guidelines in BLM VRM Manual Sections 8410 and 8411, Visual Resource Inventory, and must conform to the land use allocations set forth in the RMP which covers the project area. Although it is a goal of the BLM to inventory and assign VRM classifications to land within its jurisdiction, the project area has not been fully inventoried and VRM classifications have been assigned only to public lands within the Coachella Valley (Foote 2002).

The first step in assigning interim VRM classifications is to perform a scenic quality inventory and evaluation of the project area. The landforms, vegetation, water features (if any), color, adjacent scenery, scarcity, and cultural modifications of the area under inventory are all assessed and scored. When all of the scores are added up, a scenic quality rating is then assigned to that particular location, or scenic quality rating unit.

The BLM matrix assigns interim VRM classes by combing: 1). sensitivity levels; 2). scenic quality classes; and 3) viewing distance zones. **Table 2** displays the Interim VRM class matrix prepared by the applicant.

VISUAL RESOURCES Table 2
Interim Visual Resource Management Class Matrix

	Visual Sensitivity						
	High			Moderate			Low
Special Areas	1	1	1	1	1	1	1
Scenic Quality Class A	2	2	2	2	2	2	2
Scenic Quality Class B	2	3	3	3	4	4	4
Scenic Quality Class C	3	4	4	4	4	4	4
	FG/MG	**BG[2]**	**SS**	**FG/MG**	**BG**	**SS**	**SS**

[1] Foreground/Middleground Zone
[2] Background Zone
[3]Seldom Seen Zone

Key Observation Points

Six Key Observation Points (KOP's) were selected at various locations within the project area to represent views of potential concern as determined by degree of visual quality, sensitivity level analysis, and delineation of distance zones (See **Figure 1-Location of Key Observation Points**). Visual impacts at each KOP were evaluated using the BLM visual contrast rating system and assigned a contrast of strong, moderate, weak or none. Views from KOPs are shown both before project construction and with the project simulated in the view, at the end of this visual resources section. KOP selections were located:

- Along major or significant travel corridors (e.g., I-10 and SR 177);
- At or near cultural, historic and prehistoric sites; and
- Near residential areas (e.g., City of Blythe).

Locations were selected to be typical views of the proposed transmission line as seen by a causal viewer and to portray potential impacts that could occur along the route. At each KOP, the existing visual setting and the effects of introducing project facilities to the view were evaluated. To characterize the potential impacts on scenic quality and viewer's experience, photo simulations were prepared by adding images of project transmission lines and towers to representative photographs. The purpose of the photosimulation is to approximate the anticipated long-term appearance of the project in the existing landscape to evaluate potential visual impacts. Photo simulations are presented for each KOP.

The view from each KOP has been evaluated based on the visual quality of the landscapes, using BLM's scenic quality classes (BLM,1981). The BLM places scenic quality into three classes:

- Class A. Areas that combine the most outstanding characteristics of land form, vegetation, water, color, influence of adjacent scenery, scarcity, and man-made features.

- Class B. Areas in which there is a combination of some outstanding features and some that are fairly common to the physiographic region.

- Class C. Areas in which the features are fairly common to the physiographic region.

The BLM also assigns one of three " visual sensitivity levels" to each viewpoint as follows:

- High Visual Impact: The visual contrast of the project would exceed the VRM class guidelines for an area, or conflict with applicable plans and adopted policies of government agencies and would result in a high visual impact, and would be considered significant for the purposes of this analysis.

- Medium Visual Impact: The visual contrast of the project would be fully at, but not exceed, the VRM class guidelines for that area and would be considered to be a less-than-significant visual impact.

- Low/No Visual Impact: The visual contrast of the project is clearly within the VRM class guidelines for the area and would be considered a less than significant visual impact.

The scenic quality class ratings and visual sensitivity levels for each KOP are presented below. The ratings were based on the applicant and CEC staff's in-field observations carried out in June and October of 2004, review of the BLM-scenic quality class mapping for areas similar viewshed qualities, and review of the USGS topographic maps. Scenic quality of the views from each of the KOPs was based on the direction in the BLM Manual (BLM, 1981).

VISUAL RESOURCES – KOP 1 represents a view from I-10 east of Nicholls Warms Springs/Mesa Verde Interchange, and just south of the Blythe Airport (See **Figure 2a**). This view was selected to represent the high volume of traffic along I-10 as this view also represents a high sensitivity level. The view from KOP 1 encompasses a foreground/ middleground scene of single wooden poles which provide local electrical distribution, two H-frame transmission lines which cross I-10. As provided in the AFC, the major elements in this view are the expanse of flat, open desert lands with the beginning of a citrus orchard in the foreground that provides a relatively thick foliage and provides a distinct variation from the typical high desert coloration. The Riverside/ Arizona Mountains in the background and open space features in the foreground and middleground with developed features results in a scenic quality class C.

Figure 2b provides a visual simulation of the Buck Substation and transmission line as it crosses the interstate. As provided in the AFC, the simulation is as it would appear from I-10 eastbound, just past the Nicholls Warm Springs/Mesa Verde interchange. Given the presence of existing transmission lines and associated towers that dominate the landscape at this KOP, the addition of new lines and poles to the viewshed would blend in with other transmission line crossings in the foreground/middleground view. The existing transmission lines also create strong geometric and linear forms that are gray in color and coarse in texture. The addition of the new transmission line would create a weak contrast in this viewshed. The proposed modifications would be evident, but would remain subordinate to the existing landscape because they would blend in with other structures in the area. Therefore, KOP 1would be in conformance with the Class 3 VRM objective.

VISUAL RESOURCES – KOP 2 represents a view from Nicholls Warm Springs/Mesa Verde, looking south toward the proposed Midpoint Substation (See **Figure 3a**). From this viewpoint, the proposed substation is approximately 4 miles away. The applicant and CEC staff chose this viewpoint as it represents views toward the substation from a few dozen residences that are located on the south edge of the community. The surrounding area is predominantly flat desert with widely scattered creosote brush and four-wheel vehicle trails. The existing H-frame transmission poles are in the background and almost completely blend in with the blue-gray Palo Verde Mountains.
The elements in this view are the expanse of flat open desert land in the foreground/middleground, the Mule Mountains on the right, and Palo Verde Mountains and existing transmission lines in the background. This view would be classified as scenic quality class C due to the developed features (transmission lines) that detract from the overall level of scenic quality.

Figure 3b provides a simulated view of the proposed Midpoint Substation and transmission line as it would appear at the south edge of the town of Nicholls Warm Springs/Mesa Verde. The proposed transmission lines would create a weak visual contrast as the project would be visible as parallel silhouettes against the Palo Verde Mountains in the background, but would not dominate the view from the location of KOP 2. In addition, the proposed project transmission lines and towers would be consistent with existing visual features within the viewshed (e.g., transmission lines and tower structures), and will not change the landscape character of this scene. As seen in the visual simulation, the Midpoint substation would not be visible from this KOP or from the town of Nicholls Warm Springs/Mesa Verde, because of its lower profile. Overall the scenic quality which is now low, would remain the same. The proposed modifications would remain subordinate in this landscape, and would meet the objectives of interim VRM Class 3.

VISUAL RESOURCES – KOP 3 represents a view from I-10, looking south toward Chuckwalla and Ironwood State Prisons. (See **Figure 4a**) The jagged, bold mountains to the south appear as a dark silhouette. This view was selected to represent typical views toward the proposed transmission lines from numerous locations along I -10 as the transmission line parallels the interstate highway. The Chuckwalla Mountains contain a variety of landforms, textures, and colors, with steep-walled canyons, inland valleys, washes, and isolated rock outcroppings. As discussed in the AFC, this KOP was selected in consultation with CEC staff because the state prisons create a focal point in the landscape; therefore more visual attention will be drawn to existing and proposed human activities in this view.

The existing wooden poles from the Blythe-Eagle Mountain 161-kV line and lattice towers of the SCE 500 - kV D-PV1 transmission line are visible against the blue-gray mountains in the background. The major elements in this view are the white buildings and white water tower of the state prisons set in the open expanse of the flat, open desert land in the foreground/middleground with the wood pole line and 500 - kV lattice towers in the foreground/middleground. The Chuckwalla Mountains in the background provide to some extent a visual interest, but the visual variety of the open space and stark visual contrasts of the state prison facilities detract from the overall level of scenic quality. Based on these criterions, this view would be classified as having a scenic quality of Class C.

Figure 4b provides a simulated view of the proposed transmission lines and poles as seen from I-10, just east of Wiley's Well Rest Area. The proposed transmission lines which are seen in the foreground/middleground would be visible at a distance, but would not dominate the view and would blend with the existing transmission lines. Attention would still be drawn to the white buildings and water tower of the two state prisons which is a focal point within the view. The viewing distance from this KOP is approximately 1.5 to 2 miles, and the angle of the view which is greater than 45 degrees away from I -10 decreases the visual impact of the proposed modifications.

The overall scenic quality of this view which is now low would not be substantially changed by the proposed modifications. Based on the high sensitivity of viewers, low scenic quality of the landscape, and foreground/middleground viewing distance, the addition of a new transmission line would cause a weak contrast and be subordinate to the existing landscape surroundings as the forms and lines of the transmission lines and conductors would blend in with existing form and lines of the existing SCE D-PV1 transmission line. Based on this contrast rating, the proposed modifications would meet the objectives of interim VRM Class 3.

VISUAL RESOURCES - KOP 4 represents a view from I-10 at Highway 177 Junction at the Desert Center exit (See **Figure 5a**). The view is looking southwest toward Alligator Rock, which is the most scenic view associated with the proposed project.

Desert Center is a popular exit on I-10 for various highway commercial services and a rest stop. Because the freeway is elevated as it crosses Highway 177, residents and visitors to the tourist-commercial facilities cannot see most of the proposed modifications at or near Alligator Rock.

This viewpoint was selected in consultation between CEC staff and the applicant because Alligator Rock creates a focal point in the landscape. Wooden electrical distribution poles are visible between the highway cut slope and Alligator Rock. The lattice towers (Southern California Edison 500 - kV) are not visible from this viewpoint, because the transmission line is located between Alligator Rock and the Chuckwalla Mountains in the background. Alligator Rock and the Chuckwalla Mountains appear as a bold definitive mass with rugged edges. The desert vegetation is contrasting and asymmetrical and ranges from light to dark brown in color, and are in the foreground and middleground. Also parts of the view are the soil-eroded cut-slopes of the freeway interchange. The only vertical elements in this landscape view are the wooden utility poles and various wooden sign poles in the foreground and middleground. Applying the BLM scenic quality class scale for landscape visual quality, this view would be classified as a moderate scenic quality, Class B.

Figure 5b provides a simulated view of the proposed modifications as seen from I-10 at the Desert Center exit, looking southwest toward Alligator Rock from the bridge over Highway 177. As indicated in the AFC, the proposed transmission lines would be clearly visible from this viewpoint. With the Chuckwalla Mountains in the background and Alligator Rock in the foreground/middleground of the viewpoint, the attention would be drawn to these scenic features. Given the dominating appearance of the existing dark brown wooden poles in the foreground, the proposed transmission poles would be clearly visible, but would be less noticeable than the wooden poles. The proposed lines

and poles would appear to blend in, to some extent, with the blue-gray and dark colors of the Chuckwalla Mountains and Alligator Rock. CEC staff agrees with the applicant that with the presence of existing towers and poles and the horizontal elements of the existing conductors in the BLM Utility Corridor H along I-10 has created a precedent for these elements in this landscape. The viewing distance of a quarter mile to one mile and the angle of view (greater than 45 degrees away from the interstate) would tend to decrease the visual impact of the proposed transmission line. Based on the high sensitivity of viewers, scenic quality class B, and foreground/middleground viewing distance, the proposed modifications would meet the objectives of interim VRM Class 2.

VISUAL RESOURCE KOP - 5 represents a view of the I-10 at the Hayfield Road exit and overcrossing (See **Figure 6a**). The viewpoint was selected because the proposed transmission line modifications would cross I-10 at this location. As shown in the KOP, the Orocopia Mountains are visible in the background, and I-10 and the Hayfield Road Bridge dominate the foreground/middleground view. Because a high number of the travelers along I-10 would view the transmission towers at this location, this view has a high sensitivity level.

Although the mountains in the background provide some scenic interest, the desert vegetation, barren soils and the developed features such as I-10 and Hayfield Road Interchange decrease the overall level of scenic quality. The BLM scenic quality class scale for landscape visual quality in the foreground/middleground area of this KOP would be classified as having a low scenic quality of Class C.

Figure 6b provides a simulated view of the proposed modifications as seen from a viewpoint located on I-10 at the Hayfield Road Exit, looking east. The transmission lines and poles are clearly visible from this viewpoint, but with the architectural form of the modern highway overcrossing (I-10/Hayfield Road Bridge) and the on-ramp structure to I-10, the new transmission line poles will add continuity to the infrastructural landscape. The proposed modification project and the highway overcrossing structure would continue to dominate the foreground/middleground view, and create a strong focal point in the landscape.

The presence of the proposed modifications would not change the character of this viewpoint and therefore the scenic quality, which is now low (scenic quality class C), would remain the same. Based on the high sensitivity of viewers, low scenic quality of the landscape, and foreground/middleground viewing distance, the interim VRM objective for the KOP is Management Class 3. The proposed modification would be subordinate in this landscape, considering the form, lines, color, and texture of the concrete poles would be consistent with the freeway overpass infrastructure. The objectives of the assigned VRM class 3 would be met with the proposed modifications in place.

VISUAL RESOURCE KOP – 6 represents a view toward Julian Hinds Substation from Hayfield Road and I-10 (See **Figure 7a)**. The viewpoint was taken from the same location as KOP-5 looking northeast toward Julian Hinds Substation and the California Aqueduct. The Eagle Mountains are in the Background and the flat, open desert lands are in the foreground. This focal point was selected with consultation with CEC staff because of the nature of the aqueduct facilities which are a focal point in the landscape and the proposed modifications would be located in the foreground/middleground of this view. As stated in the traffic and transportation section of this analysis, the traffic

volumes on Hayfield Road are low, and no recreational facilities are accessible from this road. However, because of the high volume of traffic on I -10, the sensitivity of this view is high.

Because the California Aqueduct and the Julian Hinds Substation detract from the overall level of scenic quality, the foreground/middleground areas of the viewpoint would be classified as having a low scenic quality of Class C.

Figure 7b provides a simulated view from KOP 6 at the same vantage point as KOP 5: I-10 at the Hayfield Road exit, looking northeast toward Julian Hinds Substation and the California Aqueduct, the community of Hayfield, a private community established solely for the purpose of maintaining the California Aqueduct, and the Joshua Tree Wilderness and Eagle Mountains in the background.

The proposed transmission line poles in the foreground/middleground distance zone would be visually evident, but are not sky lined as depicted in the KOP, therefore would not dominate the scene. The California Aqueduct is a dominant feature in this landscape, and more attention could be drawn to the proposed transmission line poles, because of the open nature of the Hayfield Lake Valley. The poles would be fully visible to the traveling public along I-10 and Hayfield Road. The linear form of the poles with horizontal conductors would be visible and would provide some noticeable contrast against the open, flat desert lands in the foreground/middleground. Staff agrees with the applicant in that the California Aqueduct's white, linear penstocks, the Julian Hinds Substation, and existing private community at the foot of the Eagle Mountains already create a greater existing contrast than the contrast that would be created by the proposed transmission line poles.

The overall low scenic quality of this foreground/middleground landscape view would remain the same, although the transmission line poles would to some extent change the character of this view, although the overall level of scenic quality would not be substantially altered. The proposed transmission line poles as indicated earlier would be visible, but would appear to blend in with the grayish colors of the Eagle Mountains, and would remain subordinate to the existing landscape. Based on this contrast rating, the objectives of the assigned interim VRM class 3 would be met with the proposed modifications in place.

Light and Glare

The proposed project does not have the potential to substantially increase the amount of light visible to the surrounding area. The applicant has proposed measures to reduce lighting impacts at the Midpoint Substation by the installing one low wattage light to guide workers from the entrance gate to the equipment control building.

Construction Laydown Area

During the construction period, parking for construction workers and laydown of equipment would take place at various locations along the transmission route, including storage facilities at the Julian Hinds Substation, Buck Substation and at the Desert Center. Because of the limited time that the laydown areas would be present and their location away from potential viewers, the project's construction laydown areas would not create a significant adverse visual impact. In addition, the minimal lighting proposed at the laydown areas would not result in a significant adverse impact.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

At the November 10, 2004 Informational Hearing and Site Visit the Airport Manager / Assistant City Manager for the City of Blythe stated that the height of the power poles (110 feet) would create a flight path problem if the proposed alignment is allowed.

The City of Blythe has suggested an alternative route for transmission lines 9 through 17. This alternative route would follow the existing D-VP power line path through an existing ROW in an orange grove. The following is staff's evaluation of the City of Blythe's proposed alternative route.

ALTERNATIVE ROUTE EVALUATION

The proposed realignment of transmission line power poles near the Blythe Municipal Airport cannot be fully analyzed without: 1) a visual simulation of the transmission poles within the orange grove, 2) conducting a full investigative study on adjacent land uses in the area, and reviewing the type of user or viewer present in orange grove area. It can be assumed that the visual impacts could be lessened by the orange orchard screening a portion of the transmission poles, but further review is necessary before staff can fully assess and determine the visual impacts from this alternative route.

CUMULATIVE IMPACTS

For the most part, the proposed BEPTL from Buck Station to Julian Hinds would be adjacent to the existing SCE D-PV1 500-kV line, which is within a designated utility corridor. As discussed in the AFC, two other transmission lines are proposed within the same utility corridor, the SCE D-PV2 and the Desert Southwest 500 kV, although the proposed location of the Desert Southwest 500 kV has not been specifically located. For further discussion on proposed and future transmission lines, see the **Alternatives** section of this report.

The siting of the BEPTL within this corridor, which is predominately 1.5 to 2 miles from I-10 viewers, will serve to minimize the visual cumulative impact. Existing visible man-made features within the project area include a private residential community, agricultural activities, roadways, railways, water conveyance facilities, and general land disturbance/alteration associated with these facilities and other activities. The proposed project would contribute cumulatively to detract from the visual characteristics of the project area, although the mitigation measures identified in this analysis would serve to reduce, but not fully eliminate, the project's contribution to cumulative visual impacts. Because of the distance and angle of view of the proposed BEPTL and other transmission lines from viewers, visual awareness of the transmission lines would be low and therefore there would not be a significant cumulative visual impact.

PUBLIC COMMENTS

No public comments have been received to date.

CONCLUSION(S)

The visual analysis focused on two main issues; (1) whether construction and operation of the project would cause significant visual impacts, and (2) whether the project would be in compliance with applicable local LORS.

- The project is within the boundary of the County of Riverside General Plan. General Plan Figure LU-1 shows the project route as “Open Space Conservation.” The project is consistent with the General Plan’s Multipurpose Open Space Element, specifically Scenic Resources and Scenic Corridors. The General Plan does not identify the portion of U.S. Interstate Highway 10 within the project viewshed as a County scenic highway.
- The California Scenic Highway System list does not identify the portion of U.S. Interstate Highway 10 within the project’s viewshed as being within a State designated scenic highway corridor, although it has been listed as a candidate by the State.
- A portion of the project (Bucks Substation to Devers-Palo Verde Line Component) lies within the boundary of the City of Blythe General Plan. The project is consistent with the General Plan’s “Heavy Industrial” designation.
- The project is not within a City or County designated historic district.
- A 67.4 mile portion of the project’s transmission line alignment would be within an existing designated Utility Corridor “H" under the U.S. Bureau of Land Management’s California Desert Conservation Area Plan of 1980, as amended. This utility corridor directly parallels U.S. Interstate Highway 10 and contains the existing 500 kV Devers-Palo Verde transmission line.
- Lands within the project viewshed are generally characterized as being remote, uninhabited, inaccessible, subject to natural hazards, and unable to support more intense development due to the lack of public facilities and services.
- The project would not create a new source of substantial outdoor light or glare. Lights are to be shielded and directed downward. Switchyard and electric transmission structures are to be constructed using non-glare surface treatment(s). Fencing for the project is to be non-reflective.
- The project would be consistent with applicable visual policies of the Palo Verde Valley Area Plan and the Desert Center Area Plans of the Riverside County General Plan, and the Visual Resource Management (VRM) guidance criteria used by the U.S. Bureau of Land Management.
- Given the concentration of existing transmission lines, and other degraded visual conditions in the area, the proposed transmission facilities would be co-dominant to the other transmission lines, and be relatively inconspicuous. Staff has provided mitigation (**VIS-7**) which insures tinting of the transmission poles to a color consistent with the surrounding area. With this and other mitigations identified in this analysis, construction and operation of the project will not cause any significant visual impacts.
- As discussed earlier in the alternative route evaluation, the proposed realignment of transmission line power poles near the Blythe Municipal Airport cannot be fully

analyzed without a visual simulation of the transmission poles within the orange grove, conducting a full investigative study on adjacent land uses in the area, and reviewing the type of user or viewers present in the project area.

PROPOSED CONDITIONS OF CERTIFICATION

Staff recommends that the Energy Commission adopt the following conditions of certification if it approves the project.

SITE SURFACE RESTORATION

VIS-6 The project owner shall remove all evidence of the laydown area and linear facility construction activities, if any, and shall restore the ground surface to the original condition or better condition, including the replacement of any vegetation or paving removed during construction where project development does not preclude this. The project owner shall submit to the CPM for review and approval a surface restoration plan, the proper implementation of which will satisfy these requirements.

Verification: At least 60 days prior to the start of transmission line and substation construction, the project owner shall submit the surface restoration plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the surface restoration plan are needed, within 30 days of receiving that notification the project owner shall submit to the CPM a plan with the specified revisions.

The project owner shall complete surface restoration within 60 days after completion of the transmission line and substation construction. The project owner shall notify the CPM within seven days after completion of surface restoration that the restoration is ready for inspection.

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-7 The project owner shall treat the surfaces of all project structures and buildings visible to the public such that a) their color(s) minimize(s) visual intrusion and contrast by blending with the landscape; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

The project owner shall submit for CPM review and approval, a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

a) A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

b) A list of major project structures; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;

c) One set of color brochures or color chips showing each proposed color and finish;

d) One set of 11" x 17" color photo simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture, from Key Observation Points 2, 3 and 6 (location shown on Figures 3b, Figure 4a and Figure 7b of the Staff Assessment);

e) A specific schedule for completion of the treatment; and

f) A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

Verification: At least 90 days prior to specifying to the vendor the color(s) and finish(es) of structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the County of Riverside Transportation and Land Management Agency, Planning Department, and the U.S. Bureau of Land Management, Ridgecrest Field Office for review and comment.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and they are ready for inspection and shall submit one set of electronic color photographs from the same key observation points identified in (d) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

PERMANENT EXTERIOR LIGHTING

VIS-8 To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting such that a) obtrusive spill light does not occur beyond the project transmission line alignment; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized; and e) the plan complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to the County of Riverside Transportation and Land Management Agency, Planning Department, and the U.S. Bureau of Land Management, Ridgecrest Field Office for review and comment a lighting mitigation plan that includes the following:

a) Location and direction of light fixtures shall take the lighting mitigation requirements into account;

b) Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements;

c) Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

d) Light fixtures shall not cause obtrusive spill light beyond the project boundary;

e) All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

f) Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to County of Riverside Transportation and Land Management Agency, Planning Department for review and comment a lighting mitigation plan.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

SIGNAGE

VIS-9 The project owner shall install minimal signage visible to the public, which shall a) have unobtrusive colors and finishes that prevent excessive glare; and b) be consistent with the policies and ordinances of the affected local jurisdiction (e.g., County of Riverside, City of Blythe) and the U.S. Bureau of Land Management, Ridgecrest Field Office. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

Verification: The project owner shall notify the CPM and the affected local jurisdiction's planning department that appropriate signage has been installed and is ready for inspection prior to the start of commercial operation, and shall provide the CPM with electronic color photographs of the signage. If the CPM determines that signage requires changes, the project owner shall complete the changes within 60 days and notify the CPM that the changes have been completed.

REFERENCES

Blythe Energy, LLC, Blythe, California. (BLYTHE 2004a). Petition for post certification amendment. October 12, 2004.

Blythe Energy, LLC, Blythe, California. (BLYTHE 2004e). Data Responses Nos. 1 – 99. December 1, 2004.

Bureau of Land Management. Visual Resource Inventory, BLM Manual Handbook, Revised January, 1986

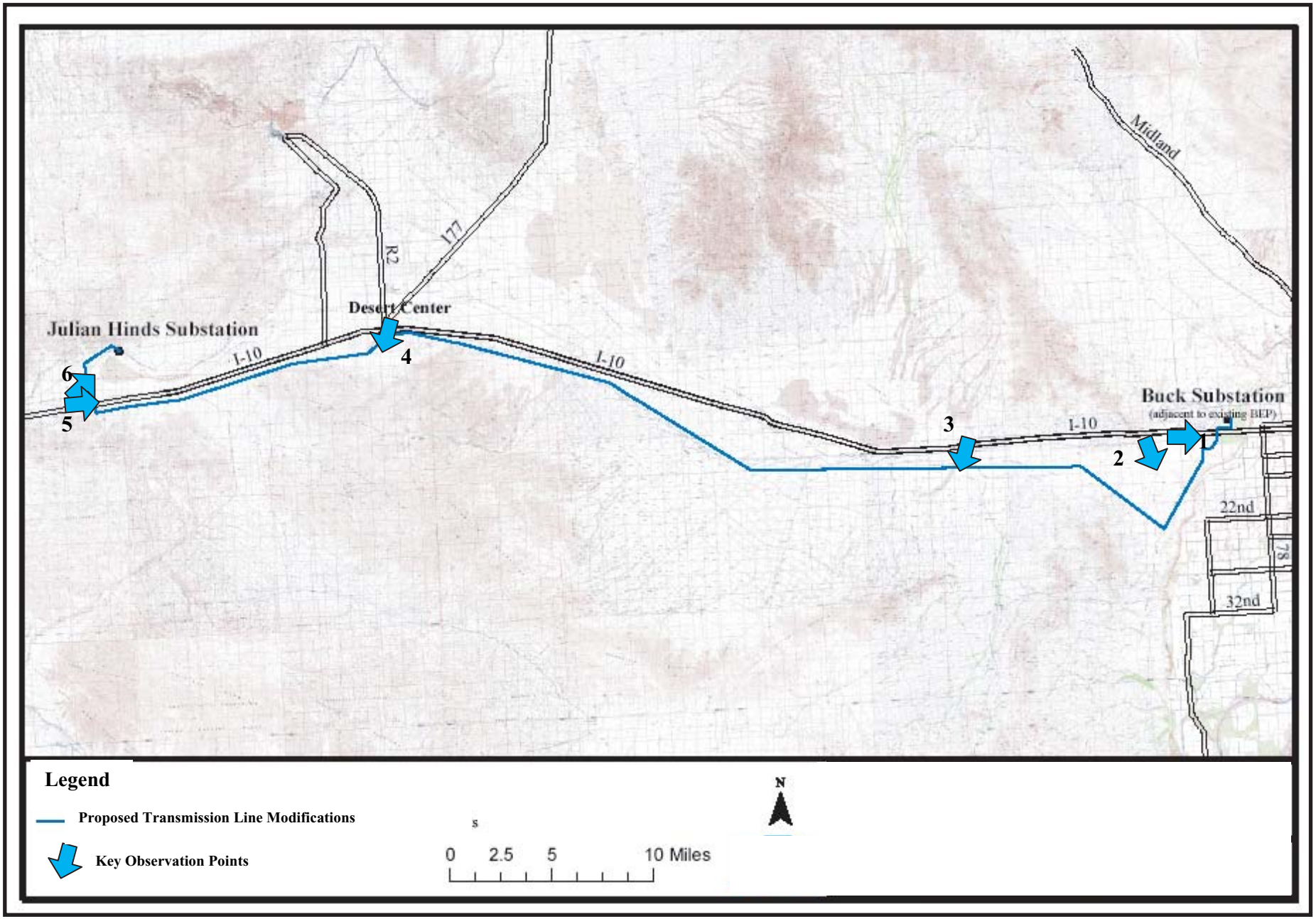
City of Blythe General Plan and Zoning Ordinance, 1989

County of Riverside, Desert Center Specific Area Plan, 2003a

County of Riverside. Palo Verde Valley Specific Area Plan, 2003b

VISUAL RESOURCES - FIGURE 1

Blythe Transmission Line Project - Location of Key Observation Points



SOURCE: AFC Figure 5.9-1

VISUAL RESOURCES - FIGURE 2a

Blythe Transmission Line Project - KOP 1 - Existing view from I-10 looking east

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SOURCE: AFC Figure 5.9-2a

VISUAL RESOURCES - FIGURE 2b

Blythe Transmission Line Project - KOP 1 - Visual Simulation of Proposed Modifications

SOURCE: AFC Figure 5.9-2b

VISUAL RESOURCES - FIGURE 3a

Blythe Transmission Line Project - KOP 2 - Existing view from Mesa Verde, looking southeast toward Midpoint Substation

SOURCE: AFC Figure 5.9-3a

VISUAL RESOURCES - FIGURE 3b

Blythe Transmission Line Project - KOP 2 - Visual Simulation of Proposed Modifications

SOURCE: AFC Figure 5.9-3b

VISUAL RESOURCES - FIGURE 4a

Blythe Transmission Line Project - KOP 3 - Existing view from I-10, looking south toward the Chuckwalla Valley State Prison

SOURCE: AFC Figure 5.9-4a

VISUAL RESOURCES - FIGURE 4b

Blythe Transmission Line Project - KOP 3 - Visual Simulation of Proposed Modifications

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SOURCE: AFC Figure 5.9-4b

VISUAL RESOURCES - FIGURE 5a

Blythe Transmission Line Project - KOP 4 - Existing view from I-10 at Highway 177 junction, looking southwest toward Alligator Rock

SOURCE: AFC Figure 5.9-5a

VISUAL RESOURCES - FIGURE 5b

Blythe Transmission Line Project - KOP 4 - Visual Simulation of Proposed Modifications

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SOURCE: AFC Figure 5.9-5b

VISUAL RESOURCES - FIGURE 6a

Blythe Transmission Line Project - KOP 5 - Existing view from I-10 at Hayfield Road, looking east

SOURCE: AFC Figure 5.9-6a

VISUAL RESOURCES - FIGURE 6b

Blythe Transmission Line Project - KOP 5 - Visual Simulation of Proposed Modifications

SOURCE: AFC Figure 5.9-6b

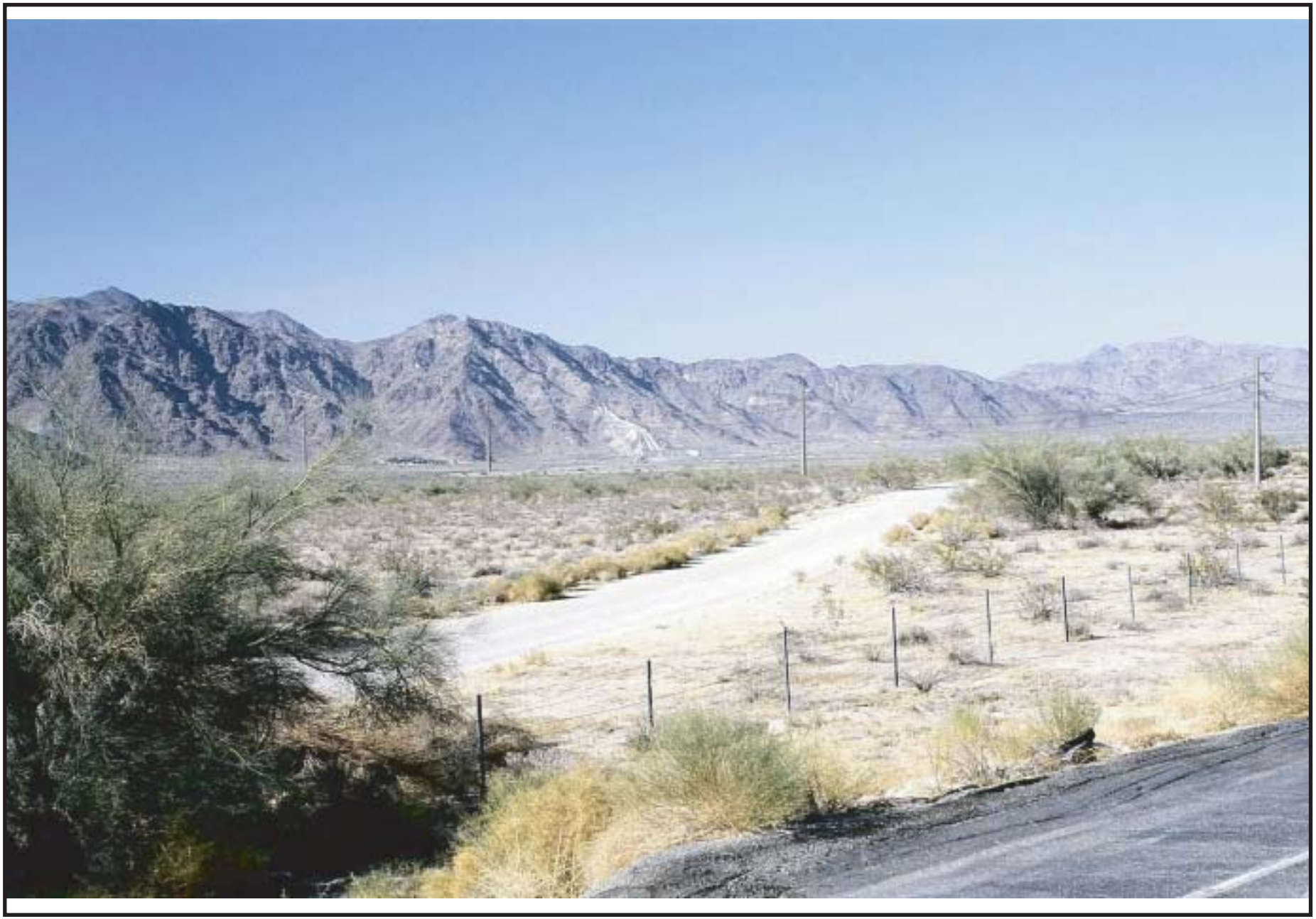
VISUAL RESOURCES - FIGURE 7a

Blythe Transmission Line Project - KOP 6 - Existing view from I-10 at Hayfield Road, looking northeast toward Julian Hinds Substation

SOURCE: AFC Figure 5.9-7a

VISUAL RESOURCES - FIGURE 7b

Blythe Transmission Line Project - KOP 6 - Visual Simulation of Proposed Modifications



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: AFC Figure 5.9-7b

WASTE MANAGEMENT

Obed Odoemelam, Ph.D.

SUMMARY OF CONCLUSIONS

Energy Commission staff has tentatively determined that management of the wastes generated during construction and operation of the proposed Blythe Energy Project Transmission Line Modification would not likely result in any significant adverse impacts if the waste management measures proposed in the Amendment request and the Conditions of Certification specified in the Final Decision for the Blythe Energy Project are implemented. However, Energy Commission staff has recently issued three additional data requests to the applicant to clarify the extent of potential contamination from hazardous military ordinance that may exist along the transmission line route. Staff withholds its final conclusions regarding the potential presence of such hazards and the specific plans for potential management. Staff considers the available hazardous materials disposal facilities as potentially capable of handling any such hazardous wastes, hence staff's conclusion that there will be no significant direct or cumulative impacts on the waste handling capacity of the project area's waste handling facilities.

INTRODUCTION

This Preliminary Staff Assessment (PSA) addresses the issues associated with management of the wastes generated from the construction and operation of the proposed Blythe Energy Project Transmission Line Modification. The analysis deals with the generated hazardous and non-hazardous wastes, except for project-related wastewater, whose management is specifically addressed in the **Soil and Water Resources** section.

Energy Commission staff's objectives in its waste management analysis are to ensure that:

- The management of the wastes will be in compliance with all applicable laws, ordinances, regulations, and standards (LORS). Compliance with such LORS ensures that wastes generated during the construction and operation of the proposed project will be managed in an environmentally safe manner.
- The disposal of project wastes will not result in significant adverse impacts on existing area waste disposal facilities.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

WASTE MANAGEMENT Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal	
42 U.S.C. § 6922 Resource Conservation and Recovery Act (RCRA)	RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous wastes to comply with requirements regarding: • Record keeping practices which identify quantities of hazardous wastes generated and their disposition, • Labeling practices and use of appropriate containers, • Use of a manifest system for transportation, and • Submission of periodic reports to the U..S. EPA or authorized state agency.
Title 40, Code of Federal Regulations, part 260	These sections contain regulations promulgated by the U.S. EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.
State	
California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended)	This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.
Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)	These regulations set forth minimum standards for solid waste handling and disposal; guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.
Title 22, California Code of Regulations, §66262.10 et seq. (Generator	These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification

Standards)	numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous wastes must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established.
Title 22, California Code of Regulations, §67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)	These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.
California Fire Code	Enforced by the local Fire Department, to include a requirement that businesses obtain permits for the use and storage of specified hazardous materials. This permit must be obtained before storing regulated hazardous wastes at the project site.

SETTING

The proposed transmission lines and related facilities would be routed mostly through undeveloped public desert and mountainous land with relatively few existing activities that could generate hazardous wastes or contaminated areas that are of specific concern in this analysis. In response to staff's Data Request 91 requesting information regarding hazardous substance contamination along the proposed transmission line path, the applicant (Blythe Energy LLC, 2004e) stated that the type of survey that Energy Commission staff would consider adequate for this project had been conducted by the staff of Tetra Technical FW without any discernible signs of such wastes. Staff's request was driven by the concern over military-related contamination in the areas along the proposed routes that could have been used in the past for military exercises. Please refer to the section below on **Response to Public and Agency Comments** for more information on this matter.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

Two main issues are addressed in staff's Waste Management analyses: potential site contamination from past industrial or other human activities and the methods used to handle the related wastes (which may be Class I hazardous wastes, Class II designed wastes, or Class III municipal solid wastes) during demolition, construction, and operations. Staff's method of analysis and the thresholds for determining significance of the impacts of concern are different for these two issues.

For any site proposed for the construction and operation of power plants and related facilities in California, the applicant is required to provide sufficient documentation of the

nature of any contamination in cases of areas with past human activities considered capable of generating the wastes of concern.

Regarding the management of generated wastes, staff reviews the applicant's proposed solid and hazardous waste management plans to determine if the proposed methods would meet the State's standards for waste reduction and recycling. Staff then reviews the available off-site treatment and disposal sites to determine whether or not the project-related wastes would have a significant impact on the waste handling capacity of area disposal sites as allotted daily, yearly, or over a lifetime. Staff uses an impact threshold of 10 percent as a measure of potential significance in this regard.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Existing Contamination

Given the general lack of waste-generating activities along the route of the proposed project lines and related facilities, staff does not consider the proposed structure erection activities as warranting remediation-related surveys for worker health protection and does not recommend conditions of certification in that specific regard.

Construction Impacts and Mitigation

The waste-generating activities of concern for this proposed modification project are those associated with construction of the lines and their support structures which have been more fully described by the applicant (Blythe Energy 2004a, pages 3-1 through 3-11). The non-hazardous solid waste components of the related wastes will be metal, plastic, and wood, excess concrete, cardboard, and various non-hazardous empty containers as typically associated with line construction activities. An estimated 90 tons of such wastes are expected and would be recycled through a waste broker as practicable. The fraction that cannot be recycled would be disposed of at the local Blythe Class III landfill. The 5, 700 cubic yards of excavated soil would be used for access road grading, or disposed of at the Blythe Sanitary landfill (Blythe Energy 2004a, pages 5.12-1 and 5.12-2). The construction-related non-hazardous liquid wastes will be managed as discussed in the **Soil and Water Resources** section.

Most of the liquid hazardous wastes to be generated during construction are liquid hazardous wastes such as cleaning solvents, and specialty chemicals such as caustic fluids, acids, chemical test liquids, and hydrocarbon-based compounds. Relatively small amounts of solid wastes including welding materials, dried paint, and joint-sealing compounds may also be generated.

The project owner would be considered the generator of hazardous wastes at each construction point and would be responsible through a contractor for the handling and disposal of these hazardous wastes during each construction phase. Such wastes would be accumulated at satellite locations and then transported daily to the construction contractor's 90-day hazardous waste storage area located in the construction laydown area. The wastes thus accumulated would be properly manifested, transported and disposed of at a permitted hazardous waste management facility by a licensed hazardous waste collection and disposal company. Three regional hazardous waste disposal facilities (Kettleman's Hills in King's County, Buttonwillow in

Kern County, and Westmoreland in Imperial County) would be available for such disposal.

Operation Impacts and Mitigation

Operation of the proposed lines and related substations would generate waste materials in much smaller amounts than that generated from the construction phase. The non-hazardous wastes in this case would include packaging materials, metal, plastic, and cardboard pieces. The relatively small amounts of hazardous wastes would include cleaning solvents, paints, welding materials, and sealing compounds. All these wastes would be managed the same way, as would the noted construction wastes, thus presenting an insignificant risk to workers and the public. Non-hazardous liquid wastes would also be generated during facility operation and are discussed in the **Soil and Water Resources** section.

Impact on Existing Waste Disposal Facilities

The Blythe Landfill is a permitted Class III facility (for non-hazardous wastes) approximately seven miles north of Blythe. It is projected to remain operational until 2073 and presently accepts an average of 50 tons per day. The volume of non-hazardous wastes expected from construction and operation of the proposed project lines and related substations is expected to be a fraction of one percent of the Blythe Landfill's annual capacity. The total remaining capacity is estimated to be in excess of one million cubic yards, meaning that the volume of solid non-hazardous waste and unused excavation soil from the modification project requiring off-site disposal would be insignificant compared to the existing disposal capacity (Blythe Energy 2004a, page 5.12-3).

The three Class I landfills that would be available for the generated hazardous wastes collectively have an excess of 20 million cubic yards of capacity that translates into a remaining operational life of over 50 years. This shows that the relatively small amounts of hazardous construction and operation-related wastes would be insignificant relative to available disposal capacity.

CUMULATIVE IMPACTS AND MITIGATION

The quantities of non-hazardous and hazardous wastes generated during construction and operation of the proposed modification project will add to the total quantities of waste generated in the project area and the State of California in general. However, the estimated 90 tons of solid wastes to be generated during construction and the minimal amount from operation could easily be disposed of at the available Blythe Sanitary Landfill during the project's operational life. The three regional hazardous waste disposal facilities would have sufficient capacity to accommodate the relatively small amounts associated with the proposed and similar projects (Blythe Energy 2004a, page 5.12-13). This means that project construction and operation will not result in significant cumulative waste management impacts.

COMPLIANCE WITH LORS

The applicant would be required to dispose of hazardous and non-hazardous wastes at facilities approved by the various departments within the California Environmental

Protection Agency (CalEPA). Because hazardous wastes will be produced during both project construction and operation, the project owner or contractor will be required to obtain a hazardous waste generator identification number from the California Department of Toxic Substances Control (DTSC). Accordingly, the project owner will be required to properly store, package and label waste, use only approved transporters, prepare hazardous waste manifests, keep detailed records, and appropriately train employees. Pursuant to California Code of Regulations, Title 22, section 67100.1 et seq., the applicant must prepare a hazardous waste Source Reduction and Evaluation Review and Plan. Energy Commission staff will make its final determination regarding LORS compliance after the applicant files its response to the outstanding waste management data requests referred to earlier.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Western Area Power Administration (Western) submitted comments on the applicant's data response to staff data request 91 (Western 2004). In response to staff's question about steps taken to identify the potential sources of hazardous materials around all potential project routes, the applicant stated that a related survey of the entire transmission line route had been conduced by Tetra Tech FW staff without finding any contamination sources. This statement was contradicted in Western's comments in which the Western author specifically recalled having found military explosive devices on the north side of the access road east of Wiley Wells. In addition, there seems to be an additional discrepancy in the applicant's response to Data Request 91 stating that the entire transmission line route has been surveyed and their response to Data requests 32 and 33 indicating that there are three current cultural surveys and that a 100 percent survey of the Area of Potential Effect would be provided in March 2005. In order to gain clarification of these potential discrepancies, Energy Commission staff issued three additional data requests to determine the extent of surveys conducted to date.

CONCLUSIONS

Staff has tentatively determined that management of the wastes generated during construction and operation of the proposed line modification project would not likely result in any significant adverse impacts if the waste management measures proposed in the Amendment request and existing conditions of certification are implemented. Staff will withhold its final conclusions regarding waste management impacts pending receipt of outstanding data responses. Staff's analysis currently shows that there will be no significant direct or cumulative impacts on the waste handling ability of the area's waste management facilities. However, the potential for military ordinance-related hazardous wastes would be established from responses to staff's data requests.

PROPOSED CONDITIONS OF CERTIFICATION

Staff does not propose any additional Conditions of Certification at this time.

REFERENCES

Blythe Energy LLC 2004a (Blythe 1 Transmission Lines project). Petition for Post Certification Amendment. Submitted to the California Energy Commission, October 1, 2004.

Blythe Energy LLC 2004b (Blythe 1 Transmission Lines project). Data responses Submitted to the California Energy Commission November 29, 2004.

Western (Western Area Power Administration) 2004. Comments on Blythe Energy Transmission Line Amendment Data Responses. Filed November 30, 2004.

WORKER SAFETY AND FIRE PROTECTION

Geoff Lesh, P.E. and Rick Tyler

SUMMARY OF CONCLUSIONS

Condition of Certification WORKER SAFETY-6 assures that the worker safety and health plans are properly implemented and monitored during the construction and commissioning phases of the project. If the Energy Commission approves the amendment, Staff recommends the adoption of this condition.

INTRODUCTION

Worker safety and fire protection is enforced by laws, ordinances, regulations, and standards (LORS), and implemented at the federal, state, and local levels. Worker safety is of utmost priority at the project location and is documented through worker safety practices and training. Industrial workers at the facility operate process equipment and handle hazardous materials daily and may face hazards that can result in accidents and serious injury. Protection measures are employed to either eliminate these hazards or minimize the risk through special training, protective equipment, or procedural controls.

The purpose of the Worker Safety and Fire Protection analysis is to assess the worker safety and fire protection measures proposed by the Blythe Energy Project Transmission Line Modification (BEPTL) and to determine whether the applicant, in their Proposal for Post-Certification Amendment (PPCA), has proposed adequate measures to:

- comply with applicable safety LORS;
- protect the workers during construction and operation of the facility;
- protect against fire; and
- provide adequate emergency response procedures.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS

Worker Safety Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
29 U.S.C. §§ 651 through 678).	Public Law 91-596, the Federal Occupational Safety and Health Act (OSH Act) of 1970., mandates safety requirements in the workplace and is found in Title 29 of the United States Code, § 651 Implementing regulations are codified at Title 29 of the Code of Federal Regulations, under General Industry Standards §§ 1910.1 - 1910.1500 and clearly define the procedures for conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the general industry safety and health standards now in force under this OSH Act represent a compilation of materials from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA) which publishes the National Fire Codes.
29 C.F.R. §§ 1910.1 - 1910.1500	Occupational Safety and Health Administration Safety and Health Regulations.
29 C.F.R. §§ 1952.170 – 1952.175	Federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 C.F.R. §§ 1910.1 – 1910.1500.
Title 8 California Code of Regulations, §§337-560 and §§1514- 8568	The California Labor Code requires that the Cal/OSHA Standards Board adopt standards at least as effective as the federal standards (Labor Code § 142.3(a)) and thus all Cal/OSHA health and safety standards meet or exceed the federal requirements.
Cal. Code Regs., tit. 24, Part 9	California Fire Code and all applicable NFPA standards.
Cal. Code Regs., tit. 24, § 3	California Building Code Title 24, California Code of Regulations
CPUC GO-95	This General Order of the California Public Utilities Commission covers Rules for Overhead Electric Line Construction.

SETTING

The proposed BEPTL modifications would be located in eastern Riverside County, California, predominantly on undeveloped public desert lands administered by the Bureau of Land Management (BLM). Expansive, primarily undeveloped desert and mountainous areas characterize this portion of eastern Riverside County. Interstate-10,

State Route 78, and State Route 177 are the primary highways providing vehicular access throughout this region.

The Riverside County Fire Department (under contract with California Department of Forestry) responds to any possible fires along the right-of-way of the proposed transmission line (BEPTL 2004a). Medic Engine 49, stationed at Desert Center is responsible for the area between Chiriaco Summit and Blythe, including the Hayfield and Julian Hinds Substation area. The Riverside County Fire Department also maintains three stations in Blythe, the nearest station being Station No. 45 (17280 Hobson Way).

IMPACTS

WORKER SAFETY

Industrial environments are potentially dangerous during construction and operation of facilities. Workers at the proposed project would be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and numerous other injuries. They have the potential to be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. It is important for the BEPTL to have well-defined policies and procedures, training, and hazard recognition and control at their facility to minimize such hazards and protect workers. If the facility complies with all LORS, workers would be adequately protected from health and safety hazards.

FIRE HAZARDS

During construction and operation of the proposed BEPTL, there is the potential for fires. Electrical sparks, combustion of fuel oil, flammable liquids, explosions, and over-heated equipment, may cause small fires. Compliance with all LORS would be adequate to assure protection from all fire hazards.

APPLICANT'S PROPOSED MITIGATION

WORKER SAFETY

A Safety and Health Program would be prepared by the applicant to minimize worker hazards during construction and operation. Staff uses the phrase "Safety and Health Program" to refer to the measures that would be taken to ensure compliance with the applicable LORS during the construction and operational phases of the project.

Construction Safety and Health Program

Construction Safety Orders are published at Title 8, California Code of Regulations, section 1502 et seq. These requirements are promulgated by Cal/OSHA and are applicable to the construction phases of the project. The Construction Safety and Health Program would include the following:

- Construction Injury and Illness Prevention Program (Cal. Code Regs., tit. 8, § 1509);
- Construction Fire Protection and Prevention Plan (Cal. Code Regs., tit. 8, § 1920); and
- Personal Protective Equipment Program (Cal. Code Regs., tit. 8, §§ 1514 - 1522).

Additional programs under General Industry Safety Orders (Cal. Code Regs., tit. 8, §§ 3200 - 6184), Electrical Safety Orders (Cal. Code Regs., tit. 8, §§2299 - 2974) and Unfired Pressure Vessel Safety Orders (Cal. Code Regs., tit. 8, §§ 450 - 544) would include:

- Electrical Safety Program;
- Unfired Pressure Vessel Safety Orders;
- Equipment Safety Program;
- Forklift Operation Program;
- Excavation/Trenching Program;
- Fall Prevention Program;
- Scaffolding/Ladder Safety Program;
- Articulating Boom Platforms Program;
- Crane and Material Handling Program;
- Housekeeping and Material Handling and Storage Program;
- Hot Work Safety Program;
- Respiratory Protection Program;
- Employee Exposure Monitoring Program;
- Confined Space Entry Program;
- Hand and Portable Power Tool Safety Program;
- Hearing Conservation Program;
- Back Injury Prevention Program;
- Hazard Communication Program;
- Air Monitoring Program;
- Heat and Cold Stress Monitoring and Control Program; and
- Pressure Vessel and Pipeline Safety Program.

Prior to construction of the BEPTL, detailed programs and plans would be provided pursuant to the existing Condition of Certification **WORKER SAFETY-1**.

Operations and Maintenance Safety and Health Program

Upon completion of construction and prior to operations at the BEPTL the Operations and Maintenance Safety and Health Program would be prepared. This operational safety program would include the following programs and plans:

- Injury and Illness Prevention Program (Cal. Code Regs., tit. 8, § 3203);
- Emergency Action Plan (Cal. Code Regs., tit. 8, § 3220);
- Hazardous Materials Management Program;
- Operations and Maintenance Safety Program;
- Fire Protection and Prevention Program (Cal. Code Regs., tit. 8, § 3221); and
- Personal Protective Equipment Program (Cal. Code Regs., tit. 8, §§ 3401-3411).

In addition, the requirements under General Industry Safety Orders (Cal. Code Regs., tit. 8, §§ 3200 - 6184), Electrical Safety Orders (Cal. Code Regs., tit. 8, §§2299 - 2974) and Unfired Pressure Vessel Safety Orders (Cal. Code Regs., tit. 8, §§ 450 - 544) would be applicable to the project. Written safety programs, which the applicant would develop, for the BEPTL project would ensure compliance with the above-mentioned requirements.

Prior to operation of the BEPTL project, all detailed programs and plans would be provided pursuant to existing Condition of Certification **WORKER SAFETY-2**.

Safety and Health Program Elements

The applicant provided the proposed outlines for both a Construction Safety and Health Program and an Operation Safety and Health Program (BEPTL 2004). The measures in these plans are derived from applicable sections of state and federal law. The major items required in both construction and operation Safety and Health programs are as follows:

Injury and Illness Prevention Program (IIPP)

The applicant would submit an expanded Construction and Operations Illness and Injury Prevention Program to Cal/OSHA for review 30 days prior to construction and operation of the project.

The IIPP would include the following components as presented in the PPCA:

- Identity of person(s) with authority and responsibility for implementing the program;
- System ensuring employees comply with safe and healthy work practices;
- System facilitating employer-employee communications;
- Procedures identifying and evaluating workplace hazards, including inspections to identify hazards and unsafe conditions;
- Methods for correcting unhealthy/unsafe conditions in a timely manner;
- Methods of documenting inspections and training and for maintaining records; and

- A training program for introducing the program; for new, transferred, or promoted employees; for new processes and equipment; for supervisors; for contractors.

Emergency Action Plan

California regulations require an Emergency Action Plan (Cal. Code Regs., tit. 8, § 3220).

The following elements are required:

- Purpose and Scope of Emergency Action Plan;
- Personnel Responsibilities during Emergencies;
- Specific Response Procedures;
- Evacuation Plan;
- Emergency Equipment Locations;
- Fire Extinguisher Locations;
- Site Security;
- Accident Reporting and Investigation;
- Lockout/Tagout;
- Hazard Communication;
- Spill Containment and Reporting;
- First Aid and Medical Response;
- Respiratory Protection;
- Personal Protective Equipment;
- Sanitation; and
- Work Site Inspections.

Fire Prevention Plan

California Code of Regulations requires an Operations Fire Prevention Plan (Cal. Code Regs., tit. 8, § 3221). The plan would include the following topics:

- Responsibilities;
- Procedures for fire control;
- Fixed and Portable fire-fighting equipment;
- Housekeeping;
- Employee alarm/communication practices;
- Servicing and refueling areas;
- Training; and
- Flammable and combustible liquid storage.

Staff proposes that the applicant submit a final Emergency Action Plan and Fire Protection and Prevention Plan to the California Energy Commission Compliance Project Manager (CPM) for review and approval and to the County of Riverside Fire Department for review to satisfy the existing Conditions of Certification **WORKER SAFETY-1** and **-2**.

Personal Protective Equipment Program

California regulations require Personal Protective Equipment (PPE) and first aid supplies whenever hazards are encountered which, due to process, environment, chemicals or mechanical irritants can cause injury or impair bodily function as a result of absorption, inhalation or physical contact (Cal. Code Regs., tit. 8, §§ 3380-3400). The BEPTL project operational environment would require a PPE program.

All safety equipment would meet NIOSH or ANSI standards and would carry markings, numbers, or certificates of approval. Respirators would meet NIOSH and California Department of Health and Human Services Standards.

Each employee would be provided with the following information pertaining to the protective clothing and equipment:

- proper care, maintenance, and storage;
- when the protective clothing and equipment should be used;
- benefits and limitations; and
- when and how the protective clothing and equipment are to be replaced.

A PPE program ensures that employers comply with the applicable requirements for PPE and provide employees with the information and training necessary to implement the program.

Operations and Maintenance Written Safety Program

In addition to the specific plans listed above, there are additional LORS applicable to the project, which are called "safe work practices". Both the Construction and the Operations Safety Programs would address safe work practices under a variety of programs. The components of these programs include the following:

- Fall Protection Program;
- Hot Work Safety Program;
- Confined Space Entry;
- Hearing Conservation Program;
- Hazard Communication Program;
- Process Safety Management (PSM) Program; and
- Contractor Safety Program.

Operations and Maintenance Safety Training Programs

Employees would be trained in the safe work practices described in the above-referenced safety programs.

FIRE PROTECTION

Staff reviewed the information provided in the PPCA regarding available fire protection services and equipment (BEPTL 2004) to determine if the project would adequately protect workers and if it would affect the fire protection services in the area. The project would rely on both on-site fire protection procedures and local fire protection services. The on-site fire procedures and equipment provide the first line of defense for small fires. In the event of a major fire, fire support services including trained firefighters and equipment for a sustained response would be required from the County of Riverside Fire Department.

The information in the PPCA indicates that the project intends to meet the minimum fire protection and suppression requirements. Staff agrees that the project would indeed meet all requirements. The applicant will be required to provide the final Fire Protection and Prevention Program to Staff and to the County of Riverside Fire Department, prior to construction and operation of the project, to confirm the adequacy of the proposed fire protection measures.

CUMULATIVE IMPACTS

There are few industrial facilities in this agricultural area. Riverside County Fire Chief Craig Anthony confirmed that his agency is adequately staffed and equipped to deal with any foreseeable incidents involving the proposed project (Anthony). Staff reviewed the potential for the construction and operation of the BEPTL project, combined with existing industrial facilities, to result in impacts on the fire and emergency service capabilities of the County of Riverside Fire Department and concludes that cumulative impacts would be insignificant.

RESPONSE TO COMMENTS

No comments received.

CONCLUSION AND RECOMMENDATIONS

Because the PPCA is an amendment to the original certification decision (CEC 2001), the Conditions of Certification **Worker Safety-1 and -2** from the original commission decision for BEPTL remain in force. Because the proposed project involves substantial differences of the in construction methods from the original project (transmission lines instead of a power plant), new submittals for **Worker Safety-1, and -2** will be required. These new worker safety plan submittals would incorporate any unique and specific requirements of power transmission line construction and operation and must be submitted to the CPM for review and approval.

If the applicant provides a Project Construction Safety and Health Program and a Project Operations Safety and Health Program as required by existing Conditions of Certification **WORKER SAFETY-1** and **-2**, Staff believes that the project would incorporate sufficient measures to ensure adequate levels of industrial safety, and comply with applicable LORS. The Safety and Health Programs apply to all project-related construction and operations. Staff also concludes that the proposed project would not have significant impacts on local fire protection services.

If the Energy Commission certifies the project, Staff recommends the adoption of the following new proposed Condition of Certification, **WORKER SAFETY-6** which assures that the worker safety and health plans are properly implemented and monitored during the construction and commissioning phases of the project.

PROPOSED CONDITIONS OF CERTIFICATION

WORKER SAFETY-6 The project owner shall ensure that a CPM approved Safety Monitor(s) conducts an on-site safety inspection at least once a week during construction of permanent structures unless a lesser number of inspections are approved by the CPM. The CPM may also require a similar inspection and report concerning linear facilities.

The Safety Monitor shall keep the Chief Building Official (CBO) fully informed regarding safety related matters and coordinate with the CBO concerning on-site safety inspections, and a final safety inspection prior to issuance of the Certificate of Occupancy by the CBO. The Safety Monitor will be retained until cessation of construction and commissioning activities, and issuance of the Certificate of Occupancy, unless otherwise approved by the CPM.

The Safety Monitor(s) shall also:

- Correct any construction or commissioning problems that could pose a future danger to life or health, consulting with the CBO as necessary.
- After consultation with the CBO, have the authority to temporarily stop construction or commissioning activities involving possible safety violations or unsafe conditions that may pose an immediate or future danger to life or health, until the problem is resolved to the satisfaction of the Safety Monitor and CBO.
- Consult with the CBO to determine when construction may resume unless the problem is corrected immediately, and to the satisfaction of the Safety Monitor and/or CBO.
- Inform the CPM within 24 hours of any temporary halt in construction or commissioning activities.
- Be available to inspect the site whenever necessary in addition to the minimum weekly basis during construction and commissioning as determined in consultation with the CBO and CPM.

- Develop a safety program for the project that complies with Cal/OSHA & federal regulations related to power plant projects.
- Ensure that all federal and Cal/OSHA requirements are practiced during the construction and installation of all permanent structures (including safety aspects of electrical installations).
- Ensure that all construction and commissioning workers and supervisors receive adequate safety training.
- Conduct safety training (including fall protection, confined spaces, respiratory protection, hazard communication, etc.), or ensure that the project owner, union hall, and/or contractors conduct adequate safety training.
- Maintain all Material Safety Data Sheets, storage of all hazardous materials and all other required documentation for Cal/OSHA.
- Complete all accident and incident investigations, emergency response reports for injuries and inform the CPM of incidents.
- Ensure that all the plans identified in Condition of Certification Worker Safety 1 are implemented.

The Safety Monitor shall be qualified regarding the following:

- Safety issues related to equipment, pipelines, etc,
- LORS applicable to workplace safety and worker protection
- Workplace hazards typically associated with power production
- Lock out tag out and confined spaces control systems
- Site security practices and issues

Verification: The project owner shall submit the Safety Monitor(s) resume(s) to the CPM for approval at least 30 days prior to site mobilization. One or more individuals may hold this position.

The Safety Monitor shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

Record of all employees trained for that month (all records shall be kept on site for the duration of the project);

Summary report of safety management actions that occurred during the month;

Report of any continuing or unresolved situations and incidents that may pose danger to life or health;

Report of accidents and injuries that occurred during the month.

REFERENCES

2001 California Fire Code. Published by the International Fire Code Institute comprised of the International Conference of Building Officials, the Western Fire Chiefs Association, and the California Building Standards Commission. Whittier, Ca.

Anthony, Craig. Fire Chief, County of Riverside Fire Department. Personal communication, January 5, 2005.

BEPTL (Blythe Energy Project Transmission Line Modifications) 2004: Petition for Post Certification Amendment [99-AFC-8]. Submitted to the California Energy Commission on October 1, 2004.

BEPTL (Blythe Energy Project Transmission Line Modifications) 2004a Response to Data Requests, Submitted to the California Energy Commission on November 30, 2004.

CEC California Energy Commission 2001. Commission Decision for the Blythe Energy Project (99-AFC-8)

ENGINEERING ASSESSMENT

GEOLOGY AND PALEONTOLOGY

Patrick Pilling, Ph.D., P.E., G.E.

SUMMARY OF CONCLUSIONS

Strong ground shaking represents the only regionally significant geologic hazard along the Blythe Energy Project Transmission Line Modification (BEPTL) alignment, although other geologic hazards, such as liquefaction, dynamic compaction, landslides, and expansive soils, may be present locally. These potential geologic hazards will be investigated prior to facility design as required by Conditions of Certification and, if present, mitigated through facility siting and foundation design as required by the California Building Code (2001). The BEPTL site lies in an area that contains no known viable geologic or mineral resources. Paleontological resources have been documented in the general area of the project. The potential impacts to paleontological resources due to construction activities will be mitigated as required by Conditions of Certification.

Based on this information, it is staff's opinion that the potential for significant adverse cumulative impacts to the project from geologic hazards, and to potential geologic, mineral, and paleontologic resources from the construction, operation, and closure of the proposed project, is low. The BEPTL can be designed and constructed along the proposed alignments, including a possible minor realignment near the Blythe Municipal Airport, in accordance with all applicable laws, ordinances, regulations, and standards (LORS), and in a manner that protects environmental quality and assures public health and safety.

INTRODUCTION

In this section, Energy Commission staff discusses potential impacts of the proposed BEPTL regarding geologic hazards, geologic (including mineral resources), and paleontologic resources. Staff's objective is to ensure that there will be no significant adverse impacts to geologic and paleontologic resources during project construction, operation, and closure. A brief geologic and paleontologic overview of the project is provided. The section concludes with staff's proposed monitoring and mitigation measures with respect to geologic hazards and geologic, mineral resources, and paleontologic resources. Conditions of Certification for the proposed transmission line modification project are also included.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

GEOLOGY AND PALEONTOLOGY Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal: Antiquities Act of 1906 (16 United States Code [USC], 431-433	Approximately 66 percent of the proposed BPETL will cross federal (Bureau of Land Management) land. Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR 3], 'objects of antiquity' has been interpreted to include fossils by the National Park Service (NPS), the Bureau of Land Management (BLM), the Forest Service (FS), and other Federal agencies. All design will also need to adhere to any applicable BLM design standards.
State: California Environmental Quality Act (CEQA), Appendix G	"If paleontological resources are identified during the Preliminary Environmental Analysis Report, or other initial project scoping studies, as being within the proposed project area, the sponsoring agency…must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource."
CBSC, 2001 (particularly Part 2, CBC)	The CBC includes a series of standards that are used in project investigation, design and construction (including evaluation of geologic hazards, grading and erosion control).
Local:	No LORS.

SETTING

The proposed BPETL site consists of two components designed to enhance electrical power transmission between the generating facility at Blythe, California (Buck Substation) and the California Independent System Operator (CAISO) system. Specifically, the proposal calls for construction of new overhead electrical transmission lines from the Buck Substation to the Julian Hinds Substation, and to a new substation (Midpoint Substation) proposed for construction at the Southern California Edison (SCE) Devers-Palo Verde transmission line. Associated modifications to existing facilities are also included in the proposal.

Transmission line construction between Buck Substation and the Julian Hinds Substation would entail installation of approximately 67.4 miles of new electrical transmission line via free-standing, concrete, single pole structures. The Buck to Julian Hinds component would generally follow SCE's existing Devers-Palo Verde transmission line corridor.

Transmission line construction between Buck Substation and the proposed Midpoint Substation would require installation of approximately 6.7 miles of new electrical

transmission line via free-standing, concrete, single pole structures along a new electrical transmission line corridor.

REGIONAL SETTING

The BEPTL project is located entirely within Riverside County, California in the southern portion of the Mojave Desert geomorphic province. The Mojave Desert is generally characterized by northwest trending mountain ranges flanked by broad Quaternary colluvium deposits which grade laterally into valley fill alluvium. Dry lake (playa) deposits formed by infrequent desert stormwater runoff are common on the valley floors. Localized eolian sand dunes are present in the Chuckwalla Valley. Bedrock outcrops in the project area consist of moderately to severely weathered Precambrian through Mesozoic metamorphic, metasedimentary, and igneous rock types (California Division of Mines and Geology, 1967). Several well-delineated as well as inferred fault traces have been mapped along the proposed transmission line route although none are shown to cross it. No earthquake epicenters with magnitude greater than 5.0 are known to exist in the project area (CDMG, 1994; Jennings and Saucedo, 2002).

PROJECT SITE AND VICINITY DESCRIPTION

The proposed Buck-DPV-1 segment lies within the Palo Verde Basin which is defined by the Palo Verde Valley on its eastern margin and the Palo Verde Mesa on the west. The Palo Verde Basin is composed primarily of alluvial deposits of the Colorado River and more localized alluvial deposits formed by erosion, transport, and deposition from local bedrock outcrop and reworking of alluvium. In general, the alluvial deposits which form Palo Verde Mesa are older than those of the Palo Verde Valley and reflect a period of deposition when the Colorado River was in a significantly higher average flow stage.

West of the Palo Verde Mesa, the proposed transmission line route runs west through the Chuckwalla Valley for approximately 16 miles before turning northwest for approximately 18 miles to bypass the major relief of the Chuckwalla Mountains. At Desert Center the alignment veers southwest into the Orocopia Valley for approximately 15 miles before turning north and northeast for about 3.5 miles to the Julian-Hinds Substation.

Surficial deposits along the proposed route in the Chuckwalla Valley are composed of Quaternary colluvium, alluvium, and dune sands. Near Desert Center Mesozoic granitic outcrops are encountered. Surface deposits within the Orocopia Valley are much the same as those of the Chuckwalla Valley with the addition of Precambrian metamorphic outcrops and dry lake deposits. Source material for the Quaternary deposits of the Chuckwalla and Orocopia Valleys are the Precambrian and Mesozoic metamorphic and granitic mountain ranges which define the northern and southern boundaries of the valleys, including the Eagle, Orocopia, Chuckwalla, Palen, and McCoy ranges.

The depth to ground water is reported to vary between 50 and 200 feet across the project site (Blythe 2004a).

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

There are two types of impacts considered in this section. The first are geologic hazards, which could impact proper functioning of the proposed facility and include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches. The second considers potential impacts the proposed facility could have on existing geologic, mineral resources, and paleontologic resources in the area.

The following sections provide the criteria used for determining potential hazard significance; a discussion of the main potential geologic hazards, and mineral and paleontologic resources, at the site; and an assessment of the potential impact to the project from other types of geologic hazards.

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

The Antiquities Act of 1906 (16 United States Code [USC]) requires that objects of antiquity be taken into consideration for federal projects and the California Environmental Quality Act, Appendix G, also requires the consideration of paleontological resources. The CBSC and CBC provide geotechnical and geological investigation and design guidelines, which engineers must adhere to when designing a proposed facility. As a result, the criteria used to assess geologic hazard impact significance includes evaluating each potential hazard in relation to being able to adequately design and construct the proposed facility.

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts.

- Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.
- Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geologic hazards.
- Sections (X) (a) and (b) pose questions about the project's effect on mineral resources.

With respect to impacts the proposed facility may have on existing geologic and mineral resources, geologic and mineral resource maps for the surrounding area have been reviewed, in addition to any site-specific information provided by the applicant, to determine if geologic and mineral resources are present in the area. When available, operating procedures of the proposed facility are reviewed to determine if such operations could adversely impact such resources.

Staff researched existing paleontologic information for the surrounding area in accordance with accepted assessment protocol (Society of Vertebrate Paleontology [SVP], 1995) to determine if there are any known paleontologic resources in the general area. If present or likely to exist, Conditions of Certification are applied to the project approval, which outlines procedures required during construction to mitigate impacts to potential resources.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Seismicity represents the most significant regional geologic hazard along the alignment. Other more localized geologic hazards, such as liquefaction, dynamic compaction, landslides, and expansive soils, will also need to be investigated prior to facility design. Any of these potential geologic hazards can be effectively mitigated through facility siting, to locate structures away from such hazards, and by design, incorporating a foundation and structural system capable of reducing the effects generated by the noted hazards to acceptable levels. Conditions of Certification should mitigate these impacts to a less than significant level.

The alignment will lie within existing transmission line corridors, and there are no viable geologic or mineral resources known to exist in these corridors. Areas with high mineral development potential lie nearly 30 miles from any of the alignment (United States BLM Map 4-1). While there is almost always some mineral potential in the Colorado Desert of Southern California, the potential for a transmission line, with 4-foot diameter structures on 1000- to 1500-foot centers, to affect a mining operation is negligible. In reality, mines require substantial electrical power and commonly have to construct new transmission lines to serve their facility. Locating a mine near an existing transmission line would increase its economic feasibility.

Paleontological resources have been documented in the vicinity of the project area, and native materials exhibit a high sensitivity rating with respect to containing significant paleontologic resources. Since the proposed project will include significant but localized amounts of grading and foundation excavation, staff considers the probability that paleontological resources will be encountered during such activities to be high when native materials are encountered, based on SVP assessment criteria. Conditions of Certification are designed to mitigate any paleontological resource impacts, as discussed above, to a less than significant level.

GEOLOGICAL HAZARDS

The Petition for Post-Certification Amendment (Blythe 2004a) provides documentation of potential geologic hazards along the proposed transmission line alignment. Review of the proposed modifications, coupled with our independent research, indicates the potential for certain geologic hazards (strong ground shaking and possibly liquefaction, dynamic compaction, and expansive soils) to impact the proposed facility are potentially significant but can be effectively mitigated through facility design.

Our independent research included review of available geologic maps, reports, and related data of the proposed transmission line alignment. Geological information was available from the California Geological Survey (CGS), California Division of Mines and Geology (CDMG), U.S. Geological Survey (USGS), and other government organizations.

Faulting and Seismicity

Energy Commission staff reviewed the CGS publication *Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions*, dated 1994 (CGS, 1994); the *Simplified Fault Activity Map of California* (Jennings and Saucedo,

2002); the *Maps of Known Active Fault Near-Source Zones in California and Adjacent Parts of Nevada* (International Conference of Building Officials [ICBO], 1998), the *Geologic Map of California Salton Sea Sheet* (CDMG, 1967), *Seismic Shaking Hazard Maps of California* (Petersen et al., 1999); *Probabilistic Seismic Hazard Assessment for the State of California* (CDMG, 1996); *Epicenters of and Areas Damaged by M≥ 5 California Earthquakes, 1800-1999* (Toppozada et al., 2000), and *Peak Acceleration from Maximum Credible Earthquakes in California (Rock and Stiff Soil Sites)* (CDMG, 1992).

The project is located within Seismic Zone 3 as delineated on Figure 16-2 of the 2001 edition of the CBC. Several concealed faults, which originate from inactive bedrock faults, are mapped as passing beneath Holocene age (recent) alluvium and the proposed alignment in the vicinity of the Chuckwalla Mountains and near the Julian Hinds Substation (CDMG, 1967). Based on a review of this information, no active or potentially active faults are known to cross the transmission line corridor. Even if the concealed faults were considered potentially active, they could be effectively mitigated by locating structures a minimum of 50 feet from the fault locations.

The closest known active fault is the San Andreas Fault, which is located more than 40 kilometers (25 miles) southwest of the western end of the project. This fault is designated a class “A” fault under the CBC (a fault with a maximum magnitude earthquake greater than 7 and a slip rate in excess of 5 mm/year). The maximum credible earthquake for the San Andreas Fault is considered to be moment magnitude 8.5 along most of its length. The maximum moment magnitude earthquake for the segment of San Andreas Fault closest to the project is 7.4. The slip rate for this section of the San Andreas Fault is 24 mm/yr (ICBO 1998, Table 1). CGS Map Sheet 48 predicts a 10 percent chance of peak ground acceleration of 0.1g in 50 years for the project area. Deterministic peak horizontal ground accelerations for this fault are estimated to vary between 0.5g and 0.08g near the Buck Substation (Blythe, 2003).

Since no active faults are known to exist within the limits of the proposed transmission line corridor, the potential for surface rupture along the alignment is considered low.

Liquefaction

Liquefaction is a condition in which a cohesionless soil loses its shear strength due to a sudden increase in pore water pressure. The soils most prone to liquefaction during earthquakes are submerged fine-grained, poorly graded, sands and silts.

Information contained in the amendment petition indicates ground water is present at depths of 50 or more feet below surface along the proposed transmission line route. Perched water may be present at shallower depths in very localized occurrences. No site-specific geotechnical exploration was available for review. As a result, evaluation of liquefaction potential will need to be performed as required by Condition of Certification GEO-2. Due to the suspected heterogeneous character of near surface sediments in the project area, potentially liquefiable soils, if they occur, will probably be encountered as zones or pockets, rather than as horizontally or vertically continuous layers. Therefore, potential liquefaction can be effectively mitigated through facility design.

Dynamic Compaction

Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume, as the soil grains tend to rearrange into a more dense state (an increase is soil density). The decrease in volume can result in settlement of overlying structural improvements.

No site-specific geotechnical exploration data was available for review. As a result, evaluation of dynamic compaction potential will need to be performed as required by the Conditions of Certification. If the potential is present, however, this geologic hazard can be effectively mitigated through facility design.

Hydrocompaction

Partially saturated soils can possess bonds that are a result of chemical precipitates that accumulate under arid and semi-arid conditions. Such soluble compound bonds provide the soils with cohesion and rigidity; however, these bonds can be destroyed upon prolonged submergence. When destroyed, a substantial decrease in the material's void ratio is experienced even though the vertical pressure does not change. Materials that exhibit this decrease in void ratio and corresponding decrease in volume with the addition of water are defined as collapsible soils. Collapsible soils are typically limited to true loess, clayey loose sands, loose sands cemented by soluble salts, windblown silts, and flash-flood deposits. Since the proposed electrical transmission line route is located in an arid environment generally underlain by granular soils with a relatively deep ground water table (reportedly in excess of 50 feet) that is not expected to rise appreciably from current elevations, the potential for hydrocompaction of site soils is considered low. Locally, higher levels of collapse potential may be present in flash-flood deposits on the distal ends of alluvial fans. Unless these deposits are unusually thick, they would have little impact on transmission tower foundation performance. If present, collapsible soils can be mitigated through facility design.

Subsidence

Ground subsidence is typically caused when ground water is drawn down by pumping such that the effective unit weight of the soil mass is increased, which in turn increases the effective stress on the underlying soils. This results in consolidation/settlement of the underlying soils which can manifest itself as surface subsidence. The proposed transmission line project is located across an area of relatively low groundwater extraction, and no pumping of ground water is planned as a part of this project. As a result, drawdown of the water table due to groundwater pumping is not anticipated. Therefore, the potential for ground subsidence is considered low.

Expansive Soils

Soil expansion occurs when clay-rich soils, with an affinity for water, exist in-place at a moisture content below their plastic limit. The addition of moisture from heavy precipitation, irrigation, capillary tension, water line breaks, etc. causes the clay soils to collect water molecules in their structure, which in turn causes an increase in the overall volume of the soil. This increase in volume can correspond to movement of overlying structural improvements.

No site-specific geotechnical exploration data was available for review. As a result, evaluation of expansive soils and their potential to affect overlying structural improvements will need to be performed as required by the Conditions of Certification. The near-surface alluvium present along the project route is expected to generally consist of granular soil materials overlying bedrock. Such materials are not prone to excessive expansion, although the surface few feet may have weathered to an expansive clay. If present, expansive soils can be effectively mitigated through facility design.

Landslides

Landslides are the perceptible downward sliding or falling of earth or rock under the influence of gravity. Landslides can take the form of rotational slump failures within surficial soils/colluvium and/or catastrophic failure of weakened bedrock. Such movement can be initiated by an increase of the moisture content of relatively competent material overlying a low strength layer, seismic shaking which results in loss of cohesion within a formation, or as a result of freeze/thaw weakening. Debris flows are shallow landslides that travel downslope very rapidly as muddy slurry.

Most of the proposed alignment is relatively flat, exhibiting slopes of less than three percent. The only exception is in and around the Chuckwalla Mountains, where the proposed transmission line will cross slopes that are as steep as 30 percent. No site-specific geotechnical exploration data was available for review. As a result, evaluation of landslides and their potential to affect overlying structural improvements will need to be performed as required by the Conditions of Certification. If present, landslides can be effectively mitigated by locating transmission line foundations outside the zone of influence of the landslide.

GEOLOGIC, MINERAL, AND PALEONTOLOGIC RESOURCES

Energy Commission staff have reviewed applicable geologic maps and reports for this area; Kohler, 2002; CDC, 2001; CDMG, 1990; CDMG, 1999; CDMG, 1998; and CDMG, 1986; CDMG, 1968. Based on this review and the information contained in the Petition for Post-Certification Amendment (Blythe 2004a), there are no known viable geologic or mineral resources located within or immediately adjacent to the proposed transmission line corridor.

Historic mining for precious and base metals has been documented in bedrock outcrops of the Chuckwalla, Eagle, and Mule Mountains, however recent mineral and mining indexes indicate two aggregate production operations near the City of Blythe as the only mining activity currently taking place in eastern Riverside County (CDMG, 1998, and CDMG, 1999). As of 1998, less than ½ million tons of aggregate were being produced from the two operations in the Blythe area per year and neither operation are within the proposed transmission line corridor (Kohler, 2002).

Much of the proposed modification alignment is located on Pleistocene older alluvium which is considered to have a high sensitivity rating with respect to containing paleontologic resources. Monitoring conducted during previous facility construction resulted in discovery of two vertebrate fossils (bird bone and rodent tooth). No other significant fossil finds were reported. Based on this information and staff's review of

available information (San Bernardino County Museum, 2004), the proposed transmission line project has the potential to encounter significant paleontological resources within native materials during grading and foundation construction activities. Although the alignment is nearly 75 miles long, grading activities for tower foundations typically only occurs on approximate 1,000 to 2,000-foot centers.

Tsunamis and Seiches

Tsunamis and seiches are earthquake-induced waves that inundate low-lying areas adjacent to large bodies of water. The proposed BEPTL site is located a minimum of 20 miles northeast of the Salton Sea, the nearest large body of water. The Chocolate Mountains and the Chuckwalla Mountains separate the Salton Sea from the BEPTL project. As a result, the potential for tsunamis and seiches to affect operation of the facility is considered low.

Construction Impacts and Mitigation

As noted above, no viable geologic or mineral resources are known to exist within the project area. Paleontological resources have been documented in the vicinity of the project, and the native materials exhibit a high sensitivity rating with respect to containing significant paleontologic resources. Since construction of the proposed project will include significant amounts of grading and foundation excavation on 1,000 to 2,000-foot centers, staff considers the probability that paleontological resources will be encountered during such activities to be high when grading and excavation take place in older Pleistocene alluvium, based on SVP assessment criteria. Conditions of Certification are designed to mitigate any paleontological resource impacts, as discussed above, to a less than significant level.

Operation Impacts and Mitigation

Operation of the proposed facility should not have any adverse impact on geologic, mineral resources, or paleontologic resources.

CUMULATIVE IMPACTS AND MITIGATION

With the exception of strong ground shaking, and the potential for liquefiable soils, dynamic compaction, landslides, and expansive soils to be present, the BEPTL project site lies in an area that generally exhibits low geologic hazards and no known viable geologic or mineral resources. Strong ground shaking, in addition to potentially liquefiable soils, dynamic compaction, landslides, and expansive soils, must be mitigated through facility siting or foundation design as required by the CBC. Paleontological resources have been documented in the general area of the project. The potential impacts to paleontological resources due to construction activities will be mitigated as required by Conditions of Certification.

Based on this information, it is staff's opinion that the potential for significant adverse cumulative impacts to the project from geologic hazards, and to potential geologic, mineral, and paleontologic resources is low. Energy Commission staff agree with the applicant that the project can be designed and constructed to minimize the effect of geologic hazards, and that impacts to paleontologic resources encountered during construction would be mitigated to a level of insignificance.

TRANSMISSION LINES NEAR THE BLYTHE CITY AIRPORT

The applicant proposes a potential realignment of transmission power poles 8 through 27 near the Blythe Municipal Airport. There is the potential to increase the height of the poles or realign the alignment slightly, neither of which is likely to result in significant geological, mineral resources impacts, or paleontological impacts greater than that expected for the proposed alignment.

ALTERNATIVE ROUTE EVALUATION

The proposed realignment of transmission line power poles on two acres near the Blythe Municipal Airport will be similar to the proposed project impacts and require the same mitigation measures for geology and paleontology.

COMPLIANCE WITH LORS

The proposed Conditions of Certification are to allow the Energy Commission Compliance Project Manager (CPM) and the applicant to adopt a compliance monitoring scheme that will ensure compliance with LORS applicable to geologic hazards, and geologic, mineral, and paleontologic resources.

CONCLUSIONS

The applicant will be able to comply with applicable LORS, provided that the proposed Conditions of Certification are followed, regardless of which of the alternate alignments near the Blythe Municipal Airport is selected. The project should have no adverse impact with respect to design and construction of the project, and geologic, mineral, and paleontologic resources. Staff proposes to ensure compliance with applicable LORS through the adoption of the proposed Conditions of Certification listed below.

PROPOSED CONDITIONS OF CERTIFICATION

General Conditions of Certification with respect to Geology and Paleontology are covered under Conditions of Certification GEN-1, GEN-5, CIVIL-1, and PAL-1 through PAL-7 in the Commission Decision (CEC, 2001). Conditions of Certification GEO-1 and GEO-2, also contained in the Commission Decision (CEC, 2001) have been modified slightly to reflect particular aspects of this project.

GEO-1 Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the ~~1998~~ 2001 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) assigned must be approved by the Compliance Project Manager (CPM). The functions of the engineering geologist can be performed by the responsible geotechnical engineer, if that person has the appropriate California license.

Verification: At least thirty (30) days [(or a lesser number of days mutually agreed to by the project owner and the Compliance Project Manager (CPM)] prior to the start of construction, the project owner shall submit to the CPM for approval the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal should include a statement that CPM approval is needed. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of its findings within 15 days of receipt of the submittal. If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned individual(s) to the CPM. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of the findings within 15 days of receipt of the notice of personnel change.

GEO-2 The assigned engineering geologist(s) shall carry out the duties required by the ~~1998~~ 2001 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirement, and Section 3318.1 — Final Reports. Those duties are:

1. Prepare the Engineering Geology and Soils Engineering Reports. These~~is~~ report shall accompany the Plans and Specifications when applying to the CBO for the grading permit.
2. Monitor geologic conditions during construction.
3. Prepare the Final Engineering Geology and Soils Engineering Reports.

Protocol: The Engineering Geology Report required by the ~~1998~~2001 CBC Appendix Chapter 33, Section 3309.~~3~~4 Engineered Grading ~~Designation~~ Requirements, shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy of the site for the intended use as affected by geologic factors.

The Soils Engineering Report required by the 2001 CBC Appendix Chapter 33, Section 3309.4 Engineered Grading Requirements, shall include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria for corrective measures, including buttress fills, when necessary, and opionion on adequacy for the intended use of sites to be developed by the proposed grading as affected by soils engineering factors, including site liquefaction, dynamic compaction, landslide, and expansion potential of site materials, as well as stability of fill slopes.

The Final Engineering Geology Report to be completed after completion of grading, as required by the ~~1998~~2001 CBC Appendix Chapter 33, Section 3318.1, shall contain the following: A final description of the geology of the site and any new information disclosed during grading; and the effect of same on recommendations incorporated in the approved grading plan. The engineering geologist shall submit a statement that, to the best of his or her knowledge, the work within their area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of this chapter.

The Final Soils Report to be completed after completion of grading, as required by the 2001 CBC Appendix Chapter 33, Section 3318.1 shall contain the following: locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved soils engineering investigation report. Soils engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved soils engineering report and applicable provisions of this chapter.

Verification: Within 15 days after submittal of the application(s) forgrading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology and Soils Engineering Reports haves been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. Within 90 days following completion of the final grading, the project owner shall submit copies of the Final Engineering Geology and Soils Engineering Reports required by the 19982001 CBC Appendix Chapter 33, Section 3318 Completion of Work, to the CBO, and to the CPM on request.

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TRANSMISSION SYSTEM ENGINEERING

Ajoy Guha, MSEE, P.E. and Al McCuen

SUMMARY OF CONCLUSIONS

The current System Impact studies (SIS) performed by Southern California Edison (SCE) indicate that addition of the proposed new transmission modifications would cause some adverse impacts (system reliability criteria violations) to the existing transmission system. With full 520 MW Blythe Energy Project (BEP) generation output flow on the proposed transmission modifications, the studies identified new overloads in the SCE and Metropolitan Water District (MWD) systems during normal and emergency conditions. Existing overloads were increased in some instances due to the BEP transmission modifications.

Staff concludes that the results of the current SISs are inadequate because they were not performed under sufficiently stressed conditions and therefore provide only a preliminary assessment of adequacy and transfer capability of the proposed transmission modifications and their adverse downstream impacts without selecting mitigation measures. Based on available information staff cannot determine whether the project would conform to Laws, Ordinances, Regulations and Standards (LORS). Also, until mitigation measures for the impacts are identified, the environmental and system reliability impacts of those measures cannot be analyzed. It is, therefore, necessary for the petitioner to submit amended SIS reports prepared by SCE to help determine an adequate and definite transmission plan with its respective transfer capability to the California Independent System Operator (CAISO) grid in conformity with TSE Data Requests and with the CAISO recent Study plan. The amended SIS reports are expected to be filed by late February. Staff will discuss expected filing dates with the Petitioner, SCE and the CAISO. Staff anticipates that the magnitude of system reliability criteria violations in the post-project scenario would increase in the amended SIS reports.

Constructing the Buck Boulevard to Julian Hinds 230 kV line in the Bureau of Land Management's designated Utility Planning Transmission Corridor may be inconsistent with the Bureau of Land Management's corridor goals when viewed from the perspective of optimized use of the corridor and minimizing duplication or proliferation of transmission facilities. We are working with BLM to fully understand their concerns and their position on this topic. Condition of Certification **TSE-1** would require use of a higher capacity transmission line to mitigate the potential inconsistency and comport with transmission/siting principles.

The results of the SISs performed by Western demonstrate that the addition of the proposed transmission lines at the Buck Boulevard substation would have no adverse impact on Western's Desert Southwest (DSW) region system under normal and single contingency conditions with the study conditions modeled. However, it is necessary for the petitioner to submit a supplementary SIS report prepared by Western for different study conditions.

Staff believes that the transmission modifications will have some Noteworthy Public Benefits. But staff is uncertain at this stage whether the transmission modifications will help in relieving transmission congestion in the SCE system until a further study is performed

While staff has insufficient information to fully evaluate cumulative system reliability impacts, the transmission modifications will likely cause cumulative system reliability impacts in the area transmission network served by Western and SCE including power flows in Path 59, Path 42 and Path 49. No SIS to assess the cumulative impacts of the BEP II[1] project or the Desert Southwest Transmission Project[2] is available; a SIS has been requested from BEP II in its AFC process.

The information required before staff can complete the Final Staff Assessment is listed in the Conclusions and Recommendations.

INTRODUCTION

Blythe Energy, LLC (petitioner) submitted a petition to the Energy Commission for a post-certification amendment to the Blythe Energy Generation Project Certification 99-AFC-8. The petition is for transmission modifications that would allow delivery of full 520 MW BEP generation output to the California Independent System Operator (CAISO) controlled transmission grid. The proposed transmission modifications are: (1) Building a new 67.4 mile 230 kV transmission line from Western Area Power Administration's (Western) Buck Blvd. substation to Southern California Edison's (SCE) Julian Hinds substation. (2) Building a new 6.7 mile 230 kV line from Western's Buck Blvd. substation to a proposed Midpoint 500/230/161 kV substation that will be interconnected with SCE's existing Devers-Palo Verde (DPV1) 500 kV transmission line. Considering the time necessary for permits, right-of-way easements, WECC path rating review and approval, and construction schedule, staff anticipates that in all probability the facilities could be placed in service in 2008.

The Transmission System Engineering (TSE) analysis examines whether or not the facilities associated with the proposed transmission modifications conform to all applicable laws, ordinances, regulations and standards (LORS) required for safe and reliable electric power transmission, and assesses whether or not the petitioner has accurately identified all components of the facilities required for addition of the transmission modifications to the electric grid.

Staff's analysis evaluates the reliability impacts, transfer capability and adequacy of the proposed transmission modifications and any other new or modified downstream[3] facilities necessary to support delivery of full or partial BEP generation to the CAISO grid. Staff's analysis evaluates the power plant switchyard, substations, new

[1] BEP II has filed an Application for Certification at the California Energy Commission and is under review.

[2] The Desert Southwest Transmission Project is a double circuit 230 kV or single circuit 500 kV transmission line from the Buck Boulevard substation to Devers substation.

[3] Downstream facilities are those that are beyond the point where the line emanating from the power plant joins with the (existing) interconnected system (California Public Utilities Commission v. California Energy Resources Conservation and Development Commission (1984) 150 Cal.App.3d 437, 197 Cal.Rptr. 866)

transmission lines and their terminations, and downstream facilities identified by the petitioner and the staff.

Additionally, under the California Environmental Quality Act (CEQA), the Energy Commission must conduct an environmental review of the "whole of the action," which may include facilities not licensed by the Energy Commission (California Code of Regulations, title 14, §15378). Therefore, the Energy Commission must identify and evaluate the environmental effects of construction and operation of any new or modified transmission facilities that are required as a result of the transmission additions or upgrades to the California transmission system proposed in the Amendment. The Staff will also coordinate with the co-lead federal agencies, Bureau of Land Management (BLM) and Western to meet National Environmental Policy Act (NEPA) environmental requirements.

The CAISO is responsible for ensuring electric system reliability for all participating transmission owners and determines necessary transmission additions to achieve system reliability. The CAISO will determine adequacy of the proposed transmission modifications for delivery of full 520 MW power output from BEP to the SCE transmission system in accordance with all applicable reliability criteria. According to the CAISO Tariffs, the CAISO will determine the "Need" for the proposed transmission additions or upgrades. The CAISO will, therefore, review the System Impact and Facility studies performed by SCE and/or any third party, provide their analysis, conclusions and recommendations, and issue preliminary and final approval to interconnect the transmission modifications. The CAISO will provide written and verbal testimony at the Energy Commission hearings.

Western is responsible for ensuring electric system reliability in the Western system for addition of the proposed transmission modifications and determines both the standards necessary to achieve reliability and whether the proposed transmission modifications conform to those standards. Western will provide the analysis and reports for their System Impact and Facilities studies, and their approval for the facilities and changes required in the Western system for addition of the proposed transmission modifications.

LAWS, ORDINANCES, REGULATIONS AND STANDARDS (LORS)

TSE Table 1 provides a brief list of the Laws, Ordinances, Regulations and Standards (LORS) that apply to this analysis. A detailed description of these LORS is provided in TSE Attachment 1.

TSE Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable LORS	Description
Regional	
North American Electric Reliability Council (NERC) Planning Standards	Principles designed to insure the adequacy and security of the transmission network
WECC Reliability Criteria	Insure continuity of load service and protection of the interconnected grid.
National Electric Safety Code 1999 (NESC	Provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation
Western, General Requirements of Interconnection	Requirements for Interconnection, additions and modifications to Western grid.
State	
CPUC GO 95	Rules for overhead line construction
CAISO/FERC Electric Tariff	Provides guidelines for transmission additions/upgrades within the CAISO controlled grid.
CAISO Reliability Criteria	Incorporate NERC and WECC standards and some additional requirements.

EXISTING FACILITIES AND RELATED SYSTEM (SETTING)

The existing transmission facilities in the vicinity of the BEP generating plant and towards Devers include the following (See TSE Figure 1 attached):

- Buck Boulevard 161/230 kV Substation.
- Blythe 161 kV Substation. This Western Substation is connected to the Buck Boulevard 161/230 kV Substation by an 1800 feet 161 kV single circuit line.
- Devers-Palo Verde 500 kV (DPV1) line owned by Southern California Edison (SCE).
- Parker-Gene 230 kV line owned by Western.
- Gene-Camino-Eagle Mountain-Julian Hinds 230 kV line owned by MWD (Metropolitan Water District) and operated by SCE.
- Julian Hinds-Mirage-Devers 230 kV Line owned by SCE.
- Parker-Harcuvar-Hassyampa 230 kV line owned by Bureau of Reclamation (BOR) and operated by Western.
- Coachella-Ramon-Mirage 230 kV line owned by Imperial Irrigation District (IID).
- Coachella-Devers 230 kV line: the Coachella-Mirage section owned by IID and the Mirage-Devers section owned by SCE.

The Blythe Substation which is a part of Western's "South of Parker" transmission system is connected with the following:

a. Blythe-Knob 161 kV line owned by Western.

b. Parker-Blythe 161 kV line owned by Western.

c. Parker-Headgate-Blythe 161 kV line owned by Western.

d. Niland-Blythe 161 kV line owned by Imperial Irrigation District (IID).

e. Path 59: Interconnection between Western and SCE systems via Path 59 which is a bus-tie between Western's Blythe substation and SCE's Blythe (Blythesc) substation.

f. Eagle mountain-Blythe 161 kV line owned by SCE.

Western's Blythe and Parker Substations receive significant hydropower from Western's Hoover, Davis and Parker Dams, and transmit power to Arizona and lower Colorado River areas served by IID and Arizona Public Service (APS). In view of limited transmission capacity in the "South of Parker" transmission system and in the existing Palo Verde-Devers 500 kV line, and lack of planned transmission upgrade projects in the Western system, accommodating power outputs from the existing 520 MW BEP plant and from a proposed new 520 MW Plant in Blythe area (AFC received from Caithness Blythe II, LLC for construction of the proposed plant adjacent to Western's Buck Blvd. substation) to the Cal ISO grid warrants the following major transmission plan options in staff's view:

a. Construction of the BEP sponsored two transmission modifications as in this petition, or

b. A new bulk 500 kV transmission line or a double circuit 230 kV line from Buck Blvd. substation to SCE's Devers (or Mirage) substation (load centers) similar to the proposed Desert Southwest Transmission line project (DSWTP) being sponsored by IID and being planned to be built by Desert Power, or

c. Construction of BEP sponsored 230 kV transmission line from Buck Blvd. substation to Julian Hinds substation and reconductoring of the existing 230 kV line between Julian Hinds and Mirage substation to achieve higher capacity, or

d. Construction of a second Devers-Harquahala 500 kV line (DPV2 sponsored by SCE) with a Blythe tap at Buck Blvd. Substation instead of going directly to Devers or the above DSWTP 500 KV line could be planned as part of the DPV2 line between Blythe and Devers.

These transmission options have been assessed in staff's alternatives section.

DESCRIPTION OF TRANSMISSION MODIFICATIONS

In order to deliver full or partial BEP generation output to the Cal–ISO grid, the proposed transmission modifications to be located in the Riverside County are as follows (see TSE Figure 2 attached):

1. Buck Blvd.-Julian Hinds line Component: Building a new 67.4 mile 230 kV transmission line from Western's existing Buck Blvd. substation to SCE's existing Julian Hinds Substation. The project also involves substantial upgrades and changes in the Buck Blvd. substation and Julian Hinds substation or,

2. Buck Blvd.-DPV1 line Component: Building a new 6.7 mile 230 kV line (to operate initially at 161 kV) from Western's existing Buck Blvd. substation to a proposed Midpoint 500/230/161 kV substation which will be interconnected with SCE's existing Devers-Palo Verde (DPV1) 500 kV line. The project also involves upgrades and changes in the DPV line, and construction of a new 500/230/161 kV Midpoint substation, or,

3. Both the Buck Blvd.-Julian Hinds line Component and the Buck Blvd.-DPV1 line Components: The petitioner wants the option to build both of the above components pending further review of the proposed new transmission Path ratings by WATTS/WECC groups.

The proposed transmission modifications would include the following:

A. Buck Blvd.-Julian Hinds 230 kV Line Component

   1. The 6.7 mile portion of the new line from the Buck Blvd. substation to the new proposed Midpoint substation would either be built as a single circuit or as a double circuit line with 2-1033 ACSR conductor on concrete poles depending on implementing one or both the transmission modificaitons. This section of the line will involve a road crossing over the Interstate I-10 and would be located within a typical new 95-100 feet wide right-of-way (about 52 percent BLM lands and 48 percent private lands) adjacent to the existing transmission corridor for the IID Blythe-Niland 161 kV line and the Western Blythe-Knob 161 kV line (BEP 2004a, Figure 3.3-1, Section 3.3-3, page 3-30).

   2. The major portion of the rest of the proposed line (60.7 mile length) would be located within a new 95-100 feet wide right-of-way (about 66 percent BLM lands and 34 percent private lands, part in MWD owned land) adjacent to and North of the existing SCE DPV 260 feet wide transmission line corridor and with a road crossing over Interstate I-10. This 60.7 mile section of the line would be a single circuit transmission line with 2-1033 ACSR conductor on single-column concrete poles (BEP 2004a, Figure 3.2-1,Section 3.2.3, page 3-9).

   3. Line Construction features: A single-column concrete or concrete/steel hybrid pole structure about 75-125 feet above ground high would be used with three or six 14 foot wide concrete arms depending on single circuit or double circuit construction as mentioned above in Items 1 & 2. The line would be built with 2-1033 ACSR conductor, span lengths ranging from 400-900 feet depending

on the terrain with an average 820 feet, ground clearance of 27-30 feet would be maintained. The poles would be about 20 feet below ground backfilled with gravel or concrete for the foundation. The pole locations are assumed to be directly adjacent to halfway between existing 500 kV DPV towers with 850 feet span lengths. To construct this line about 444 poles would be required out of which 41 poles would be for the Buck Blvd.-Midpoint section of the line (BEP 2004a, Table 3.2-1, page 3-7).

4. Buck Blvd. Substation Upgrade: The existing Buck Blvd. substation was constructed as a 230/161 kV substation with a double bus and six existing switching bays with a one and half breaker configuration and at present operates at 161 kV. Four of the switching bays are used for interconnection of the three BEP generating units and termination of the 161 kV line to the Blythe substation. Two of the remaining bays are spares (BEP 2004a, Figure 4.1-1, page 4-2).

   The termination of the proposed line at the Buck Blvd. substation would require modifications to existing equipment and installations of new equipment within the existing substation boundary as follows (BEP 2004a, Figure 3.2-4B, 4.2-1, page 4-6):

   a. Extending the present bus structure and buses for installation of two additional 230/161 kV switching bays (which would operate at 161 kV with an existing bay) with three breakers (one and a half breaker configuration for each switching bay), protection devices and communication equipment. The interconnection of the existing BEP steam unit (180 MW) and the termination of the 161 kV line to the Blythe substation would be shifted to the new 161 kV bays

   b. The existing five 230/161 kV switching bays with one and a half breaker configuration and the associated bus would operate at 230 kV instead of existing 161 kV and the new proposed 230 kV line to Julian Hinds would be terminated at one of the spare switching bays. The interconnections of the existing two BEP combustion turbine units (170 MW each) would remain connected at the existing bays which would operate at 230 kV.

   c. Installation of a 375 MVA 230/161 kV phase shifting transformer (PST) which would be connected at the 230 kV end with a spare 230 kV switching bay as stated in Item 4b above and at the 161 kV end with a spare 161 kV switching bay as stated in Item 4a above.

5. Julian Hinds Substation Upgrades: The termination of the proposed line at the existing substation would require modifications to the existing equipment and installation of new equipment that require expanding the existing substation boundaries by about 75 X 224 feet in the MWD owned land as: Extending the existing 230 kV bus structure and double buses for installation of an additional switching bay with two breakers, protection devices and communication equipment (BEP 2004a, Figure 3.2-5).

6. Downstream Upgrades The preliminary System Impact Study dated July 19, 2004, shows that in order to deliver power from BEP generation output to the Julian Hinds substation through the proposed new line, the additional power that would flow through the existing Julian Hinds-Mirage 230 kV line, would cause its existing 605 ACSR conductor to sag more and create ground clearance problems. Based on SCE's present analysis, it would be necessary to interset six pole structures between certain existing towers to reduce the sag and maintain proper ground clearances under normal operating conditions. As a result the normal and emergency ratings of the line will change from existing 599 Amps to 895 Amps (BEP 2004a, Figure 3.2-8).

B. Buck Blvd. to DPV1 Line component

1. The 6.7 mile new 230 kV line from the existing Buck Blvd. substation to the proposed new Midpoint substation would either be built as a single circuit or as a double circuit line with 2-1033 ACSR conductor on concrete poles depending on implementing one or both the transmission modifications. The line would operate at 161 kV initially and would be terminated at a spare switching bay of the Buck Blvd. substation. This section of the line will involve a road crossing over Interstate I-10 and would be located within a typical new 95-100 feet wide right-of-way (about 52 percent BLM lands and 48 percent private lands) adjacent to the existing transmission corridor for the IID Blythe-Niland 161 kV line and the Western Blythe-Knob 161 kV line (BEP 2004a, Figure 3.3-1, Section 3.3-3, page 3-30).

2. Line construction Features:
A single-column concrete or concrete/steel hybrid pole structures about 75-125 feet above ground high would be used with three or six 14 feet wide concrete arms depending on single circuit or double circuit construction. The line would be built with 2-1033 ACSR conductor, span lengths ranging from 400-900 feet depending on the terrain with an average 820 feet, ground clearance of 27-30 feet would be maintained. The poles would be about 20 feet below ground level backfilled with gravel or concrete for the foundation. To construct this line it is estimated that about 41 poles would be required (BEP 2004a, Table 3.3-1, page 3-28).

3. Proposed Midpoint Substation:
The new Midpoint substation would be located at the intersection point of the proposed 230 kV line with the existing SCE's DPV1 500 kV line in an area of about 43.6 acres land with dimensions of 1000 x 1800 feet. The substation site plan and its conceptual elevation view are provided in Figure 3.3-2. The substation would involve the following: (a) Installation of a 650 MVA 500/230/161 kV PST. (b) Installation of a 500 kV switchyard including 500 kV double buses and three switching bays with a one and a half breaker configuration. Two bays would be used for looping in and out of the DPV1 line and the third one would be connected to the high side of the above 500/230/161 kV PST. (c) Installation of two 230 kV switching bays with double buses and circuit breakers, one bay for termination of the 230 kV line from the Buck Blvd. substation and the other bay

would be connected to the low side of the above 500/230/161 PST (BEP 2004a, Figures 3.3-2 and 4.2-1).

C. The combined configuration of both the transmission modifications would consist of the project facilities as described in Item A and item B above along with the following:

1. Upgrades and changes to the existing Buck Blvd. substation would be identical to Item A.4 above with some changes in protective devices.
2. The 6.7 mile portion of the new 230 kV line between Buck Blvd. and the proposed Midpoint substation would be built as a double circuit line to carry both the Buck Blvd.-Julian Hinds and Buck Blvd. to Midpoint transmission lines.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

A System Impact Study (SIS) for addition of a new transmission project and/or upgrades to deliver electrical power to an existing power system grid is performed to determine the transfer capability and adequacy of the proposed transmission facilities, and compare it with alternative plans. It is intended to analyze the system reliability impacts to the grid including downstream transmission system impacts and their mitigation measures in conformance with system performance levels as required in Utility reliability criteria, NERC planning standards, NERC/WECC reliability criteria and CAISO reliability criteria. The SIS determines both positive and negative impacts, and for the reliability criteria violations (the negative impacts) determines the alternate and preferred additional transmission facilities or other mitigation measures. The study is conducted with and without the new transmission project and/or upgrades by using the computer model base case for the year the project would come on-line. The study normally includes a Load Flow study, Transient Stability study, Post-transient Load Flow study and Short Circuit study, and cost comparison for alternate plans. The SIS is focused on thermal overloads, voltage deviations, system stability (excessive oscillations in the generators and transmission system, voltage collapse, loss of loads or cascading outages) and short circuit duties. The SIS must be conducted under normal conditions (N-0) of the system (see Definition of Terms) and also for all credible contingency/emergency conditions, which include the loss of a single system element (N-1) such as a transmission line, transformer or a generator and the simultaneous loss of two system elements (N-2), such as two transmission lines or a transmission line and a generator. The SIS may also be conducted for credible simultaneous loss of multiple (more than two) system elements. Equipment that is loaded beyond 100 percent of its rating constitutes a violation of the reliability criteria. Generally voltages must be within 95 percent and 105 percent of the base level. In addition to the above analysis, the studies may be performed to verify whether sufficient active or reactive power is available in the area system or area sub-system to which the new transmission project would be interconnected.

The SIS is followed by supplemental studies conducted by the project sponsor/transmission owner to determine a final transmission plan with details of

construction costs for alternative plans provided in a Facilities study. In addition to the above analysis, should the new facilities and/or upgrades be intended to create a new transmission path or modify an existing path, then a new path rating is required to be determined with additional studies to be reviewed by sub-regional planning study groups such as WECC and WATTS.

NOTE: The conclusions contained herein apply to the study results submitted. Staff concludes that the results of the analyses provide only a preliminary assessment of system impacts that violate applicable reliability criteria under normal and contingency conditions of the system. Further studies are necessary as described below.

SYSTEM IMPACT STUDIES

1. The SIS Results for the Buck Blvd.-Julian Hinds 230 kV line Component

A. SCE STUDY

Scope of the Current SIS by SCE

The SIS dated July 19, 2004 was performed by SCE by using a 2008 summer peak base case with the existing DPV1 line (without modeling Path 49 short-term transmission upgrades scheduled to be implemented in 2006 per STEP plan) and the SCE proposed DPV2 line, and without MWD pump loads. The base case modeled all planned and queue generation, and CAISO approved planned transmission system additions to the SCE system. The post-project power flow analysis was conducted with full 520 MW net BEP generation and 517 MW flow on the proposed new line to Julian Hinds. With the proposed upgrades (for fixing ground clearance problem by installing six interset poles,) the normal and emergency ratings of the Julian Hinds-Mirage 230 kV 605 ACSR conductor line are considered uprated to 895 Amps from its current 599 Amps rating.

The post-project modifications and new installations at the Buck Blvd, substation and at the proposed Midpoint substation are shown in the one-line diagram, Figure 4.2-1 of the petition (BEP 2004a, page 4-6). A 375 MVA, 230/161 kV PST will be connected between the 230 kV and 161 kV Buck Blvd. substation buses.

Sensitivity studies were conducted to determine the potential effects of: (i) Varying the angle of the PST at the Buck Blvd. substation to control power flows to the new line. (ii) SCE's DPV2 line not in service. (iii) Maximum MWD pump load. In addition to the pre and post-project power flow analyses, post-project transient stability, post-transient power flow and short circuit analyses were conducted.

Power Flow Study Results

The study indicates that with full 520 MW net BEP generation and with 517 MW input flow (55 percent loading) on the new Buck Blvd. to the Julian Hinds line by adjusting the angle of the proposed 325 MVA PST at -38.69 degree, the addition of the Buck Blvd.-Julian Hinds 230 kV line would adversely affect the SCE transmission system. The new project

has cumulative impacts on the Devers-Mirage 115 kV subtransmission system, compounding previously identified overloads for other entities in the queue ahead of this project, on the Mirage-Tamarisk 115 kV line and the Mirage 230/115 kV transformer. The study also identified new overloads under normal and contingency conditions on the Julian Hinds-Mirage 230 kV line, and under contingency conditions on the MWD's Julian Hinds-Eagle Mountain 230 kV line and the Camino-Iron Mountain 230 kV line. Maximization of power flow on the new line substantially reduces power flows on Path 59 and the Julian Hinds-Eagle Mountain 230 kV line. A summary of power flows under different scenarios are provided in Tables 5 & 6 of the SCE study (BEP 2004a, SIS by SCE).

Normal (N-0) Conditions

A new overload on the Julian Hinds-Mirage 230 kV line is identified during normal conditions (N-0), the loading of the line increases from 52 percent to 117 percent, based on its 895 Amps adjusted normal rating. A pre-project existing overload on the Mirage-Tamarisk 115 kV line increases from 105 percent to 110 percent of its 1090 Amps normal rating. The loading on the Julian Hinds-Eagle Mountain 230 kV line, however, reduces from 52 percent to 37 percent of its 898 Amps normal rating.

Single Contingency (N-1) Conditions

The following new emergency overloads during single contingencies are identified:

a. The loading on the Julian Hinds-Mirage 230 kV line increases from 40 percent to 161 percent of its 895 Amps new emergency rating due to the critical outage of the Julian Hinds-Eagle Mountain 230 kV line.

b. The loading on the Julian Hinds-Eagle mountain 230 kV line increases from 1 percent to 131 percent of its 898 Amps emergency rating due to the critical outage of the Julian Hinds-Mirage 230 line.

c. The loading on the Camino-Iron Mountain 230 kV line increases from 34 percent to 107 percent of its 763 Amps emergency rating due to the outage of Julian Hinds-Mirage 230 kV line.

d. The loading on the Mirage substation 280 MVA, 230/115 kV transformer increases from 94 percent to 108 percent of its emergency rating due to outage of the Devers-Mirage 230 kV line.

A pre-project existing overload on the Mirage-Tamarisk 115 kV line increases from 123 percent to 140 percent of its 1090 Amp emergency rating due to the critical outage of the Devers-Mirage 230 kV line.

Double Contingency (N-2) Conditions

A new emergency overload is identified on the Julian Hinds-Mirage 230 kV line during critical double contingencies of the Coachella-Devers 230 kV line and the Ramon-Mirage 230 kV line, the line loading increases from 73 percent to 148 percent of its 895 Amps emergency rating.

Two pre-project existing overloads that increased by addition of the new project are identified as follows:

a. The loading on the Mirage-Tamarisk 115 kV line increases from 194 percent to 224 percent of its 1090 Amps emergency rating due to the critical outages of the Coachella-Devers and Devers-Mirage 230 kV lines.

b. The loading on the Mirage 230/161 kV transformer bank increases from 154 percent to 170 percent of its emergency rating due to outages of the Coachella-Devers and Devers-Mirage 230 kV lines.

Sensitivity Studies

A sensitivity study was performed by adjusting the angle of the proposed 325 MVA 230/161 kV PST at Buck Blvd. substation from -38.69 degrees to -7.88 degrees and consequently eliminating new overloads on the Julian Hinds-Mirage 230 kV and the Julian Hinds-Eagle Mountain 230 kV lines, and eliminating cumulative overloads on the Devers/Mirage 115 kV system. As a result, under normal (N-0) conditions the power flow on the new Buck Blvd.-Julian Hinds 230 kV line is reduced from 517 MW (55 percent) to 358 MW (38 percent) and the power flow on the Julian hinds-Mirage 230 kV line reduces from 417 MW (117 percent) to 356 MW (100 percent). Since the Julian Hinds-Mirage 230 kV line has no emergency rating, adjusting the Buck Blvd. substation PST angle is a viable option to eliminate normal (N-0) overloads, but not for overloads due to single (N-1) or double (N-2) contingencies. Whether the PST angle adjustment could be used to mitigate overloads on the MWD owned Julian Hinds-Eagle mountain 230 kV line is subject to approval of MWD (Section 4.2.1.1.1, page 4-7, 4-9).

A sensitivity study was performed to evaluate the impact of the new line without the proposed DPV2 and its associated upgrades to the west of Devers SCE lines. The analysis shows that during critical outage of the Devers-Valley 500 kV line, there would be incremental overloads on the Devers-Vista #1 & #2 230 kV lines and on the Devers-San Bernardino #1 & #2 230 kV lines for addition of the new proposed line (Section A.5, pages 12-14, SCE study).

The sensitivity analysis which modeled maximum MWD pump loads with and without DPV2 line shows significant reduction of overloads for the facilities as identified above (Table 5, SCE study). It is anticipated that the transfer capability of the new line or its Path rating would be a function of MWD pump loads, and Path 42 and/or Path 59 flows.

Mitigation of Overloaded Facilities

Alternative mitigation options to eliminate thermal overloads were considered as follows in the SCE study report, but not selected (Section D of the Executive Summary & Section A of the study report):

a. <u>Julian Hinds-Mirage, Julian Hinds-Mirage and Camino-Iron Mountain 230 kV lines</u>

   i) Reconductoring the line with a conductor for sufficient Ampacity rating to sustain power flows under normal and contingency conditions.

   ii) Congestion management to limit the power flow on the line to 100 percent of its normal capacity by curtailing BEP generation.

   iii) Adjusting the Buck Blvd. substation 230/161 kV PST angle to mitigate any overload.

iv) Disconnecting or opening the Buck Blvd. 230/161 kV PST to mitigate contingency overloads.

b. Mirage-Tamarisk 115 kV line and Mirage 280 MVA, 230/115 kV Transformer:

i) Planned SCE facility upgrade in the year 2006 for splitting the Devers/Mirage 155 kV subtransmission 115 kV system including installing a second Mirage 230/115 kV transformer.

ii) Adjusting the Buck Blvd. substation 230/161 kV PST angle to mitigate overload.

iii) Congestion management to limit the power flow on the line to pre-project loading by curtailing BEP generation.

iv) Reduce the power flow on Path 42 to eliminate the overload.

c. West of Devers 230 kV Lines: Devers-Vista #1 & #2 and Devers-San Bernardino #1 & #2 230 kV lines.

i) If the proposed Harquahala-Devers (DPV2) 500 kV line and its associated west of Devers 230 kV line transmission upgrades are not implemented, it would be necessary to develop a SPS to trip 520 MW BEP generation during loss of the Devers-Valley 500 kV line.

ii) Reconductoring the transmission lines with 2-1033 ACSR conductor.

The feasibility of the considered mitigation measures cannot be determined until the amended SIS's are received and approved by the CAISO. Currently the CAISO and SCE are evaluating transmission options to mitigate the contingency overloads on the West of River 230 kV transmission system.

Transient Stability Study Results

Transient stability studies were conducted by SCE using 2008 summer peak base case to determine if the addition of the proposed new line would create any adverse impact on the stable operation of the transmission grid. The study report indicates that there are no identified transient stability concerns on the system following selected contingencies for addition of the project.

Post-Transient Voltage Study Results

The study report indicates that the addition of the new line would not result in large changes in voltages following selected single and double contingencies and would remain limited within its ranges (7-10 percent) of the reliability criteria.

Short Circuit Study Results

The short circuit study was performed with the addition of the new line, and with and without recoductoring the existing Julian Hinds-Mirage 230 kV line with a 1033 ACSR or 2-1033 ACSR conductor (Table 7 and Section C. of the SCE report). The study indicates that the three phase short circuit fault currents increase by 0.1 kA to 1.9 kA at some substation buses of SCE and MWD systems and some of the breaker fault ratings could be exceeded. The single phase to ground short circuit fault currents also increase in some of the SCE and MWD substation buses. Some of the breaker fault ratings were not provided in Table 7 of the report.

Comments on the Current SIS by SCE and Requirements for the New SIS

Staff concludes that the current SIS is not complete because alternate transmission plans and mitigation were discussed and analyzed, but a definite transmission plan was not developed or finalized in the study with its transfer capability and selected downstream mitigation measure for each reliability criteria violation. The SIS was performed using a 2008 summer peak base case with both the existing DPV1 and the proposed DPV2 lines, and without MWD pump loads. In the post-project case the N-0 overload on the Julian Hinds-Mirage 230 kV line was not found mitigated. It is not clear from the study if any facilities of the Imperial Irrigation District would be overloaded or not and how the path 42 rating would be affected due to addition of the new line. While the earliest target date for the proposed DPV2 line is 2009, staff believes at this stage it is uncertain when the permit for DPV2 line will be issued and when the line will be placed in service. Considering the time necessary for permits, right-of-way easements, WECC Path rating review and approval, and construction schedule, staff anticipates that in all probability the facilities could be placed in service in year 2008. As such staff finds that beside sensitivity studies the primary study was not conducted with appropriate computer base case model for a 2008 summer peak condition without the DPV2 line. Also the SIS was not performed under a 2008 autumn or any other seasonal off-peak condition. Moreover, the CAISO has recently provided SCE with new base case computer models for 2008 summer peak and 2008 autumn off-peak conditions with only DPV1 line and higher flows on Path 49's southern system transmission lines. The cases are further modified by SCE to include other system parameters. Staff, therefore, concludes that the results of the current SIS study are inadequate and provide only a preliminary assessment of adequacy and transfer capability of the proposed transmission plan and its adverse downstream impacts.

The petitioner has, therefore, been requested to submit an amended SIS report prepared by SCE with higher flows on the transmission lines between Arizona and California to help in determining an adequate and definite transmission plan of service with its transfer capability and selected mitigation in conformity with the TSE Data Requests No. 73 dated November 1, 2004 and with the CAISO recent study plan. The study must be performed with the aforesaid new stressed 2008 summer peak and 2008 autumn base cases, and with full 520 MW or partial BEP generation output flow on the proposed new Buck Blvd.-Julian Hinds 230 kV project line. The amended SIS report must also include a revised Short Circuit study using a suitable 2008 base case. The SIS study along with an engineering evaluation needs to be conducted with and without consideration for reconductoring the existing Julian Hinds-Mirage and the Mirage-Devers 230 kV lines with SSAC and/or ACSR conductors. The study report must be submitted with all pertinent information as stated in the TSE Data request.

B. WESTERN STUDY

Scope of the Current SIS by Western

The SIS dated November 30, 2004, performed by Western presents Western's requirements for SCE's Interconnection service request for termination of the proposed new line with the Western system at the Buck Blvd. substation. The proposed new interconnection would become a second tie between SCE and the Western Area Lower

Colorado River (WALC) systems besides the existing Blythe substation bus tie known as Path 59. The study was required to determine any potential impacts on the Western's Desert Southwest (DSW) region system. The study was conducted by Western using a 2006 summer peak base case without MWD pump loads, and with Buck Blvd. 230/161 kV PST and 316 MW MWD pump loads. The study was also conducted using a 2005 heavy autumn (HA) base case. In addition to a pre and post-project power flow analysis, the study included a transient stability analysis and a short circuit study. The study results are summarized in Section 3 and Tables 1-5 of the study report (WAPA 2004d, SIS by Western).

Power Flow Study Results

The study results demonstrate that addition of the proposed project line at the Buck Blvd. substation would have no adverse impact on Western's Desert Southwest (DSW) system under normal and single contingency conditions. The new interconnection is acceptable to Western subject to the proposed equipment additions and modifications at the Buck Blvd. substation as stated above. Maximization of power flow from BEP generation on the new line by installing the 230/161 kV PST has the effect of unloading 'south of Parker' 161 kV lines in the Western's DSW system including flow on Path 59. A System Operating Procedure (SOP) would be required to ensure that the PST does not overload the SCE or MWD transmission system downstream through the new line or the 161 kV tie line between the Buck Blvd. and Blythe substations.

Transient Stability Study Results

The transient stability analysis described in Section 7 and Table 5 of the report indicates that following selected worst single contingencies, there is no adverse impact on the stable operation of the post-project system including BEP or any other independent power producer (IPP) plants or federal hydro plants integrated within the WALC control area.

Short Circuit Study Results

The short circuit analysis was performed using 2005 HA base case and is described in Section 6 and Table 4 of the report. The report indicates that the three-phase and single line to ground short circuit post-project fault currents are within the interrupting ratings of existing circuit breakers in the Western system.

Comments on the Current SIS by Western and Requirements for a Supplementary Report

Although according to the petitioner the proposed project is expected to be in service in 2007, but considering the time necessary for permits, right-of-way easements, WECC Path rating and construction schedule, staff anticipates that in all probability the facilities could be placed in service in year 2008. The Western SIS was, however, performed using the 2005 HA and 2006 summer peak base cases instead of using appropriate 2008 summer peak and autumn base cases. Since Western has done a separate SIS (dated November 21, 2004) for the proposed Buck Blvd.-DPV1 line component using 2008 summer peak base cases with the proposed project and the study results are almost identical, the current SIS report is acceptable to staff as far as the impact study under normal and single contingency conditions are concerned.

But since no study has been performed during credible double contingency conditions, Western needs to submit a supplementary power flow and transient stability analyses report using 2008 summer peak and 2008 autumn base cases for credible double contingency conditions.

Staff also observes that the short circuit study was performed using 2005 HA pre and post-project cases and also the breaker fault duties in the Western system were not provided in the table. Western needs to submit a revised short circuit analysis report performed with an appropriate 2008 base case (for maximum fault current conditions) along with breaker interrupting ratings in the Western system.
Western also needs to submit a Facilities study report with their formal approval for interconnection of the new proposed project at Buck Blvd. substation.

2. The SIS Results for the Buck Blvd. to the DPV1 Line Component

A. SCE STUDY

Scope of the Current SIS by SCE

The study was performed by SCE for two system conditions as follows:

a. 2007 Autumn base case having maximum EOR/WOR power flows with DPV1 line (without modeling Path 49 short-term upgrades to be implemented in 2006 per STEP plan) and with full MWD pump load. The proposed DPV2 line and Buck Blvd.-Julian Hinds line are not in service. The sensitivity study with the 2007 case includes the DPV2 line.

b. 2008 Autumn base case having maximum EOR/WOR power flow with DPV1 line, DPV2 line and the proposed Buck Blvd.-Julian Hinds line in service and with full MWD pump load. The sensitivity study without the Buck Blvd.-Julian Hinds line was conducted. The 2008 case assumed that the upgrades of the lines west of Devers (Devers-San Bernardino 230 kV #1 & #2 lines and Devers-Vista 230 kV #1 & #2 lines) associated with the SCE DPV2 line are in service.

The study was conducted to evaluate the proposed Buck Blvd.-DPV1 connection and also for the combined two transmission modifications. The base cases modeled all planned and queue generation, and CAISO approved planned transmission system additions to the SCE system

The post-project modifications and new installations at the Buck Blvd, substation and at the proposed Midpoint substation are shown in the one-line diagram, figure 4.2-1 of the petition (BEP 2004a, page 4-6). A 375 MVA, 230/161 kV PST will be connected between the 230 kV and 161 kV Buck Blvd. substation buses. A 600 MVA 500/230/161 kV PST was modeled at the proposed Midpoint substation along with looping in and out of the DPV1 line.

The power flow analysis was conducted under the following scenarios:

i) Pre-project.

ii) Natural Flow: It included the facilities included in Figure 4.2-1. The project is included with 520 MW power flow from the Buck Blvd. substation to the proposed Midpoint substation. Power flow was not adjusted to achieve project scope of delivering additional 520 MW into Devers from Midpoint.

iii) Series compensation Upgrade: The project is included with 520 MW flow from the Buck Blvd. to the proposed Midpoint substation. In addition the series compensation at both ends of the DPV1 and DPV2 lines was increased to obtain increased 520 MW flow between the Midpoint and Devers 500 kV substations.

iv) Devers-Midpoint 500 kV PST: The project is included with 520 MW flow from the Buck Blvd. to the proposed Midpoint substation. In addition, a 500/500 kV PST was modeled on the Devers-Midpoint 500 kV line at the Midpoint substation to increase flow to the Devers 500 kV substation by 520 MW.

v) Midpoint 500/230/161 kV PST with zero angle.

In addition to the pre and post-project (with full BEP generation) power flow analyses, post-project transient stability, post-transient power flow and short circuit analyses were conducted.

Power Flow Study Results

The study under different alternate transmission scenarios as stated in the scope of the study above was intended to evaluate the proposed project to deliver additional 520 MW power from BEP generation through the DPV1 line from the proposed Midpoint 500 kV substation to the Devers 500 kV substation. The study is also required to identify any reliability criteria violations in the existing system and their appropriate mitigation. The study indicates that series compensation adjustment on both ends of the DPV1 line or installation of a 500 kV PST at the proposed Midpoint substation for the Midpont-Devers 500 kV line are the two alternatives to increase power flow to the Devers 500 kV bus by 520 MW from BEP generation. Under normal (N-0) conditions, the limiting element is the series capacitor located at the Devers substation end. The Devers-Midpoint and Palo Verde-Midpoint series capacitors are modeled with uprated ampacity rating of 2700 /3645 Amps. The selection of the Devers-Midpoint 500 kV PST would also require additional reactive power by installing Static Var Compensators (SVC) or Synchronous Condensers to mitigate voltage drops. The study results indicate potential thermal overloads impacts in the IID and APS systems, which need further study.

Normal (N-0) Conditions

The results of power flow analysis in the Devers-Midpoint 500 kV line for pre and post-project conditions for different transmission scenarios are shown in Table I (Executive Summary) of the study report. With Devers-Midpoint 500 kV PST option, the Devers-Midpoint 500 kV line was shown loaded to about 102.8 percent of its normal capacity.

Single Contingency (N-1) Conditions

The results of power flow analysis with 2007 or 2008 Heavy Autumn (HA) base case for single contingencies under five scenarios are shown in Table II (2007 HA case with DPV1 line Buck-Julian Hinds line not in service), Table III (2008 HA case with DPV1 & DPV2 lines, Buck-Julian Hinds line not in service), and Table IV (2008 HA case with

DPV1 & DPV2 lines, Buck-Julian Hinds line in service) of the study report (BEP 2004a, BEP 2004b, SIS by SCE).

For the Devers-Valley 500 kV line contingency, the pre-project overloads on the west of Devers lines increase due to addition of the new project. Also for single contingency, incremental overloads are identified on the other 230 kV lines. For loss of the Perkins 500 kV PST under 2007 HA conditions, the Devers-Midpoint 500 kV line exceeds its normal rating of 2700 Amps, but remains within its 3645 Amps emergency rating. Operation of the Midpoint 500/230/161 kV PST at zero angle with the Buck-Julian Hinds line open will require additional facility upgrade for Path 59 for loss of the Midpoint-Devers 500 kV line. For loss of Devers-Harquahala (DPV2) 500 kV line under 2008 HA conditions, the Devers-Midpoint 500 kV line exceeds its normal rating, but remains within its emergency rating. All study scenarios identified that the loading on the Midpoint 500/230/161 kV PST will exceed its proposed rating of 615 MVA (Refer to Table V) due to outage of the Palo Verde-Midpoint 500 kV line, the PST is loaded up to 1020 MVA for the Devers-Midpoint 500 kV PST scenario.

Mitigation of Overloaded Facilities

The SCE study report has considered alternative options to mitigate overloads as follows:

1. Reconductoring the overloaded 230 kV lines for sufficient ampacity to sustain contingency.
2. Disconnecting the Midpoint 500/230/161 kV PST and curtailing BEP generation following any contingencies that exceed the normal rating of the lines.

Transient Stability Study Results

For 2007 and 2008 HA conditions with Buck-Julian Hinds line open, there is no transient stability violations following most of the selected single and double contingencies. For loss of the Lugo-Mira Loma 500 kV #1 & #2 lines, a violation of the transient stability reliability criteria is identified under all study scenarios. Also for the outage of Hassayampa-North Gila 500 kV line, the transient stability reliability criteria violation is identified for both the Devers-Midpoint 500 kV PST and Midpoint 500/230/161 kV PST with zero angle scenarios. Mitigation of these reliability criteria violations was not addressed in the study report, but must be identified and determined to be feasible prior to the Final Staff Assessment/Environmental Assessment.

Post-Transient Voltage Study Results

For 2007 HA conditions with Buck-Julian Hinds line open, a post-transient voltage deviation greater than 7 percent is identified at the Eagle Mountain 161 kV bus for Midpoint 500/230/161 PST with zero angle option. The study indicates that installation of 15 MVAR shunt capacitor would mitigate the violation.

For pre and post-project 2008 HA conditions with Buck-Julian Hinds line open, a voltage deviation greater than 7 percent is identified at the Gila, Walnut Mohak and Dome Tap 161 kV buses due to outage of the Hassayampa-North Gila 500 kV line. The study indicates further analysis to mitigate these voltage drops in the APS system

Short Circuit Study Results

The results of the short circuit study conducted with Series Compensation Adjustment scenario and the Devers-Midpoint 500 kV PST scenario are shown in Table VI & Table VII respectively (Executive Summary). The study indicates that the three-phase short circuit fault currents increase by 0.1 kA to 8.2 kA at some of the substation buses of SCE and MWD systems and some of the breaker fault ratings could be exceeded. Staff observes that a single phase to ground short circuit study was not performed and the breaker fault ratings have not been provided in the Tables to evaluate any short circuit duties violations.

Comments on the Current SIS by SCE and Requirements for the New SIS

Staff concludes that the current SIS is not complete because alternate transmission plans and mitigation were discussed and analyzed, but a definite transmission plan was not developed or selected in the study with its transfer capability and selected downstream mitigation measure for each reliability criteria violation provided. The SIS was performed using a 2007 autumn base case with the existing DPV1 and MWD pump loads, and without the proposed DPV2 line. But the study with a 2008 autumn base case included both the existing DPV1 line and the proposed DPV2 line. The sensitivity study with the 2008 autumn case was done with the proposed Buck Blvd.-Julian Hinds 230 kV line component. Considering the time necessary for permits, right-of-way easements, WECC Path rating review and approval, and construction schedule, staff anticipates that in all probability the facilities could be placed in service in year 2008. While the earliest target date for the proposed DPV2 line is 2009, staff believes at this stage it is uncertain when the permit for DPV2 line will be issued and when the line will be placed in service. As such staff finds that the primary study was not conducted with appropriate computer base case model for a 2008 autumn base case condition without the DPV2 line, and with and without MWD pump loads. Also the SIS was not performed using a 2008 summer peak base case without the DPV2 line. Moreover, the CAISO has recently provided SCE with new base case computer models for 2008 summer peak and 2008 autumn off-peak conditions with only the DPV1 line and more stressed flows on Path 49's southern system transmission lines, and the cases need to be reviewed and further modified by SCE to include other system parameters. Staff, therefore, concludes that the results of the current SIS study are inadequate and provide only a preliminary assessment of adequacy and transfer capability of the proposed transmission plan and its adverse downstream impacts.

The petitioner has, therefore, been requested to submit an amended SIS report prepared by SCE for a definite transmission plan with its transfer capability and selected mitigation in conformity with the TSE Data Requests no. 74 dated Novemeber 1, 2004 and with the CAISO recent study plan. The study must be performed with the aforesaid new stressed 2008 summer peak and 2008 autumn base cases, and with full 520 MW or partial BEP generation output flow on the proposed Buck Blvd. to DPV1 line project component and on both the proposed combined project line components. The amended SIS report must also include a revised Short Circuit study using a suitable 2008 base case. The study report must be submitted with all pertinent information as stated in the TSE Data Requests.

B. WESTERN STUDY

Scope of the Current SIS by Western

The SIS dated November 21, 2004, performed by Western presents Western's requirements for SCE's Interconnection service request for termination of the proposed new line with the Western system at the Buck Blvd. substation. The proposed new interconnection would become a third tie between SCE and the Western Area Lower Colorado River (WALC) systems besides the existing Blythe substation bus tie known as Path 59 and the proposed Buck Blvd.-Julian Hinds 230 kV line. The study was required to determine any potential impacts on Western's Desert Southwest (DSW) transmission system. The study was conducted by Western using a 2009 heavy autumn base case with the existing DPV1 and the proposed DPV2 lines, and East of the River (EOR) flow of 8055 MW. The ampacity ratings of the series capacitors on the Devers-Midpoint and Palo Verde-Midpoint 500 kV lines were considered uprated to 2,700/3,645 Amps. The study was also performed with a 2008 summer peak base case and a 2005 heavy autumn base case. In addition to a pre and post-project power flow analysis, the study included a transient stability analysis, a post-transient voltage analysis and a short circuit study. The study results are summarized in Section 3 and Tables 1-5 of the study report (WAPA 2004c, SIS by Western).

Power Flow Study Results

The power flow analysis was conducted under the following system options:

i) Pre-project.

ii) Buck Blvd to DPV1 line with and without Buck Blvd.-Julian Hinds line.

iii) Buck Blvd. to DPV1 line with and without the DPV2 line.

iv) Buck Blvd. to DPV1 line with the DPV2 line connected to or not connected to the Midpoint substation.

The study results demonstrate that addition of the proposed project at Buck Blvd. substation would have no adverse impact in general on Western's DSW region system under normal and single contingency conditions. However, the study recommends tripping the proposed Midpoint 500/230/161 kV tie line for an outage of the Midpoint-Devers 500 kV line to secure reliability of the underlying 161 and 230 kV systems. A system operating procedure (SOP) would also be required to set an acceptable range of angles for the two proposed PSTs so that there is no overload on the Buck Blvd.-Blythe 161 kV line and any other line. To maintain additional 520 MW power flow on the Midpoint-Devers 500 kV line from BEP generation, Western finds that installation of a 500 kV Unified Power Flow Controller (UPFC) at the Midpoint substation could serve the same objective of installing a 500 kV PST at the Midpoint substation. From the point of view of equipment rating and reactive power losses, installation of an UPFC could be a preferred option.

Transient Stability Study Results

The study results described in Section 8 of the report indicates that following selected worst single contingencies, addition of the proposed project(s) shows no transient

stability problem on the post-project transmission system including BEP or any other IPP plants or federal hydro plants integrated within the WALC control area.

Short Circuit Study Results

The short circuit analysis was performed using 2005 HA base case and is described in Section 6 and Table 4 of the report. The report indicates that the three-phase and single line to ground short circuit post-project fault currents are within the interrupting ratings of existing circuit breakers in the Western system.

Post-Transient Voltage Study Results

The post-transient voltage analysis described in Section 7 of the report, was performed with the 2008 HA case with Buck Blvd.-Julian Hinds 230 kV line open. The results shows that following selected single contingencies, reactive margin in Western system remains unchanged and voltage deviations within the WALC control area are within acceptable limits with no reliability criteria violation.

Comments on the Current SIS by Western and Requirements for a Supplementary Report

Staff observes that the study has not been performed for credible double contingency conditions. Western needs to submit a supplementary power flow and transient stability analyses report using 2008 summer peak and 2008 autumn base cases for credible double contingency conditions.

Staff also observes that the short circuit study was performed using 2005 HA pre and post-project cases and also the breaker fault duties in the Western system were not provided in the table. Western needs to submit a revised short circuit analysis report performed with an appropriate 2008 base case (for maximum fault current conditions) along with breaker interrupting ratings in the Western system.

Western also needs to submit a Facilities study report with their formal approval for interconnection of the new proposed project at Buck Blvd. substation.

CAISO APPROVAL OF THE TRANSMISSION MODIFICATIONS

The CAISO is responsible for ensuring electric system reliability for all participating transmission owners and is also responsible for developing the standards necessary to achieve system reliability. The CAISO will review to ensure adequacy of the proposed transmission modifications for delivery of full 520 MW power output from BEP to the SCE transmission system meeting all applicable reliability criteria. According to the CAISO Tariff, Section 3.2.1, the CAISO will determine the “Need” for the proposed transmission additions or upgrades. According to the CAISO Tariff, Section 3.2.4, the CAISO will also perform an operational review of all facilities that are to be connected, or made part of, the CAISO controlled grid to ensure that facilities being proposed provide for acceptable operating flexibility and meet all requirements for proper integration with the CAISO grid (CAISO 2003a).

The CAISO will, therefore, review the System Impact and Facility studies performed by SCE and/or any third party, provide their analysis, conclusions and recommendations,

and issue preliminary and final approval to interconnect the transmission modifications. The CAISO's final approval letter would ensure that the proposed transmission modifications conform to the NERC/WECC and Cal.-ISO planning standards. The CAISO will provide written and verbal testimony at the Energy Commission hearings.

CUMULATIVE SYSTEM RELIABILITY IMPACTS

There is insufficient data to fully evaluate cumulative system reliability impacts on the transmission system. Cumulative system reliability impacts are evaluated by staff based on the established generation/transmission queue. The established queue is:

1) DPV2
2) BEPTL
3) BEP II and the DSWTP

As noted above the DPV2 project is ahead of the BEPTL project in the generation/transmission queue. System Impact Studies have been provided by Blythe Energy that assess the BEPTL impacts with and without the DPV2 line. Those studies as previously noted cause new overloads and increase existing overloads. The transmission modifications would cause cumulative impacts on power flows for Path 42 and Path 59. The transmission modifications would likely have cumulative impacts and affect power flows on the DPV1 and proposed DPV2 lines.

As discussed previously the present System Impact Studies will be amended and staff anticipates that we will be able to assess cumulative system reliability impacts for the combination of DPV2 and the BEPTL and report those results in the SA/EA.

The 520 MW BEP II project is in AFC processing and has provided studies for BEP I and BEP II generation (1040 MW) but those studies assume a transmission configuration that is inconsistent with the generation/transmission queue utilized by the CAISO, SCE and staff and are not sufficient to assess cumulative impacts. Also, BEP I is not a participant in the BEP II transmission configuration (the DSWTP) and has indicated no interest in participating. Because the BEPTL transmission modifications tend to transmit its power toward the Devers substation and cause system reliability criteria violations, should BEP II do so also with it's proposed transmission configuration staff believes cumulative system reliability impacts would occur -- the magnitude of which cannot at present be determined. In the interconnection paradigm as required by FERC tariffs, projects lower in the generation/transmission queue are required to provide studies based on *their* position in the queue; BEP II has not done so. The BEPTL project is not responsible for providing interconnection studies to assist the Commission in evaluating cumulative system reliability impacts for projects lower in the queue, nor would it be equitable for them to be required to do so. Staff is requesting the BEP II project proponent to provide interconnection studies based on their position in the generation/transmission queue but is uncertain if we will be effective and therefore be able to fully assess cumulative system reliability impacts.

PROJECT GOALS AND DISCUSSION OF NOTEWORTHY PUBLIC BENEFITS

The Blythe Energy project (BEP), a 520 MW gas-fired combined cycle generating plant, was certified by the Energy Commission in 2001 with projected transmission upgrade plans in the Western and Imperial Irrigation District (IID) systems. The BEP commenced commercial

operation in 2003. The plant was interconnected to Western's Buck Blvd. 230/161 kV substation, funded and constructed by BEP and now owned by Western, which in turn connects to the Western, SCE and IID networks through Western's Blythe 161 kV substation. Besides an 85 MW short term transmission service right in the Western system initially, BEP could not acquire any long term transmission rights in the Western or IID system, because the potential transmission upgrade plans as described in the certification process did not materialize due to various reasons. Subsequently in 2003 in order to have firm transmission rights in the CAISO controlled grid, Blythe Energy funded additional improvements in the SCE transmission line between the Blythe substation and Eagle Mountain substation. As a result the CAISO's ability to import power through Path 59 has increased from 72 MW to a maximum 218 MW per the new WECC Path rating. Some of the BEP generation is transmitted across the Western system to Arizona & Nevada on short term transmission service.

System interconnection studies demonstrate that with the existing transmission configuration and the Remedial Action Scheme (RAS) to protect certain IID facilities, it is possible to inject full 520 MW BEP generation power into the surrounding transmission grid. However, while physically capable, such operation is not contractually feasible due to limited availability of contractual long term firm transmission rights to load centers. Although BEP produces its full 520 MW generating capacity, it has not been able to deliver by long term transmission access more than about 175 MW of its power to its preferred market in southern California via the CAISO controlled grid on a consistent and economical basis. The petitioner indicates that its existing firm transmission right is not enough to support the longterm power purchase agreements in California that Blythe Energy prefers.

Blythe Energy has since been evaluating funding new transmission facilities from Buck Blvd. substation and with this petition Blythe energy is proposing two additional transmission modifications that would allow for enhanced transfer capability of the full 520 MW BEP power output to the CAISO grid with long term firm transmission rights. Blythe Energy as a project sponsor is willing to fund the entire cost of construction of the new transmission modifications, and their operation and maintenance cost. These conditions according to provisions of Section 3.2.1.1.2 of the CAISO Tariff are sufficient for a "Determination of Need" for the proposed transmission modifications.

The Blythe Energy Petition presents the following four principal objectives for proposing the BEPTL:

- Increase the electrical capability of transmission paths between the BEP and additional points of interconnection with the CAISO controlled transmission system;
- Blythe Energy to maintain management control over the schedule to complete the modifications and construction cost through Blythe Energy participation as the sole project sponsor;
- Blythe Energy to obtain long-term transmission access for delivery of power over the proposed transmission modifications to the CAISO transmission system sufficient for Blythe Energy to establish long-term off-take agreements for the full BEP electrical output; and
- Blythe Energy to initiate construction of the proposed modifications in a timely manner and place the completed modifications in service by early to mid-2007.

Considering the time necessary for permits, right-of-way easements, WECC Path rating review and approval, and construction schedule, staff anticipates that in all probability the facilities could be placed in service in 2008.

The main purposes of the proposed transmission modifications for Blythe energy are to increase transfer capability of electrical power from BEP to the CAISO grid to procure firm long-term transmission rights and thereby deliver 520 MW power on an economic basis to the California market on longterm purchase agreements. The public benefits for such transmission modifications are much more than the public risks, especially when a project sponsor is willing to build at their own cost new transmission lines to load centers in Southern California as well as ready to supply economic power on a long term basis. Staff believes that the benefits are basically two-fold, but their effects are more. The proposed transmission modifications would provide badly needed additional transmission capacity for power delivery to the CAISO grid. The transmission modifications will eventually strengthen the area transmission network and increase its system reliability.

The transmission modifications are consistent with California State policy as stated in the CEC Draft Integrated Energy Policy Report: 2004 Update. Supplying economic power to load centers in California from a newly built efficient plant like BEP through transmission lines from outside greater Los Angeles basin will eventually have the following benefits:

i) Provide substantial energy that could compensate limited operation of costly aging plants in California and their retirements.

ii) Increase necessary generating Capacity and reserve margin in California.

iii) Provide energy with less transmission losses than from the southwest.

iv) Provide additional transmission capacity at no cost to the public.

Since the transmission modifications would increase loading in the SCE transmission system with BEP power output, and cause some new adverse impacts and increase existing impacts around Devers in southern California, staff is uncertain at this time whether the transmission modifications would relieve any transmission congestion in the SCE system until a further study is performed.

RATEPAYER IMPACTS ANALYSIS

Although as a Project Sponsor Blythe Energy is willing to fund the entire cost of construction and operation of the new transmission project(s), their goal is to sell BEP energy to the California market by procuring long term power purchase agreements on an economic basis. Such power purchase agreements or contracts may have potential ratepayer impacts. Impacts to customers of an investor owned utility, such as Southern California Edison, could be subject to review by the California Public Utilities Commission.

SITING/PLANNING PRINCIPLES

The Legislature set forth the following priorities and policies for planning and developing new transmission facilities which have been adopted by the Commission[4]: The policies reflect the fact that it is in the state's best interest to minimize the adverse economic and environmental impacts by first pursuing those options with a lower potential for adverse impacts. Staff uses these priorities and policies as guiding principles in evaluating the objectives of the project and the state's interests.

1) Encourage the use of existing right of way by upgrading existing transmission facilities where technically and economically justifiable.
2) Encourage expansion of existing right of way, if technically and economically feasible, whenever construction of new transmission lines is required.
3) Provide for the creation of new right of way if justified by environmental, technical, or economic reasons, as determined by the appropriate licensing agency.
4) Seek agreement among all interested utilities on the efficient use of new transmission capacity whenever there is a need to construct additional capacity. [5]

The BEP transmission modifications will require new right-of-way adjacent to the existing Devers Palo Verde 500 kV transmission line (DPV1) and the proposed DPV2 line. This right of way is in the designated Utility Planning Corridor (K) (CDCA, 1980). BLM is responsible for optimizing use of the corridor to best accommodate multiple existing and future projects, minimize adverse environmental impacts, and to minimize duplication or proliferation of similar facilities (BLM summary of discussions, January 06, 2005). The BEPTL from Buck Boulevard to Julian Hinds is a medium capacity 230 kV single circuit transmission line capable of transmitting about 900 MW from a thermal perspective through the corridor to Julian Hinds[6]. It is not being designed with the capability for increasing its capacity in the future. The CDCA while recognizing the potential for construction of power plants in the area, designated Corridor K based on the potential need for significant "bulk"[7] power transmission lines to import generation from Nevada and Arizona (CDCA page 94). The BEPTL is proposed *only* to carry BEP power and no other power towards Devers and thence to California markets. It does not have the capability to transfer power from Arizona or even to carry power from the proposed BEP II power plant (520MW) and in a single circuit configuration is not considered to be a "bulk" power transmission line. Staff is concerned that the Julian Hinds to Buck Boulevard line may be inconsistent with the purpose of Utility Planning Corridor K especially in view of other proposed projects.

Besides the Julian Hinds to Buck Boulevard transmission line which is to be sited adjacent to the existing DPV1 line, plans have been developed for a Devers Palo Verde 2 line (DPV2) and a Desert Southwest Transmission Line (DSWTP). The DPV1 is rated

[4] Transmission System and Right of Way Planning for the 1990s and Beyond, March 1992.

[5] Stats. 1988, ch. 1457 § 1(b) [Senate Bill No. 2431]

[6] This capacity cannot be realized absent significant changes to the system beyond Julian Hinds.

[7] In the electricity industry a bulk power transmission line has very high capacity and generally is used to interconnect very high capacity substations. All of the major California Interties are considered bulk power transmission lines.

about 1645 MVA (contractually 1500 MW) and will soon have its rating increased to 2338 MVA (about 2000 MW). The DSWTP is expected to be rated at a minimum of 1200 MW at 500 kV.

One of BLM's goals is to minimize the *duplication* or *proliferation* of similar facilities in its Utility Planing Corridors. The DSWTP has the capability to transmit all of BEP I's power to Devers and the California market as well as all of BEP II's power. The Buck Boulevard to Julian Hinds line could therefore be considered redundant to the DSWTP. The converse is not true, though, as the Julian Hinds line cannot accommodate BEP II's proposed output.

The Julian Hinds to Buck Boulevard line may create both a *duplication* and *proliferation* of transmission facilities within the designated Utility Planning Corridor K, especially when viewed from a cumulative project perspective (see below).

The DPV2 line is a 230 Mile 500 kV line which would be terminated at a new Midpoint Substation (midway between Arizona and California) or pass by that location and terminate at the Devers substation. The DSWTP line could be configured to form the western section of DPV2 and would be capable of transporting power from BEP I and BEP II along with power from Arizona. There have been industry discussions of such a possibility.

In view of the cumulative transmission development proposals in the corridor, the Buck Boulevard to Julian Hinds 230 kV line may be incompatible with the policies of the CDCA Plan. One way to mitigate this potential incompatibility is to utilize a higher capacity transmission configuration initially or a configuration that can be expanded to higher capacity when needed. To provide for expandable capacity staff recommends **Condition of Certification TSE-1** which requires either a double circuit 230 kV line from Julian Hinds to Buck Boulevard (with the option to build one circuit initially) or a 500 kV line (with option to energize initially at 230 kV).

COMPLIANCE WITH LORS

Staff concludes that the SISs submitted do not comply at this stage with the NERC/WECC, NERC and CAISO standards due to reasons stated above. Western owns and operates the Buck Blvd. substation and would design and build the proposed modifications and upgrades at the Buck Blvd. substation within its fenced yard. SCE would procure new right-of-way easements along the designated routes, design and build the proposed transmission lines under contract to BEP. SCE would also design and build the existing Julian Hinds substation upgrades after extending its fenced yard, the proposed new Midpoint Substation along with connecting the DPV1 line and the downstream proposed upgrades of the Julian Hinds-Mirage 230 kV line. Since the transmission modifications are not yet finalized in the SISs and until the Facilities studies are completed, staff cannot confidently identify the transmission modifications and the system reliability criteria violations and conformance with standards such as General Order 95. Therefore, at this stage conformance with system reliability LORS and engineering LORS is indeterminate.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Question: Western in commenting on Staff's Data Request 95 indicated that it is important for the applicant to disclose the full design capacity of its proposed transmission lines.

Response: The applicant indicates in error in responding to Western's data requests (December 2004) that the full design capacity of 520 MW for the proposed lines is clearly stated in petition Section 3.1 and summarized in petition Tables 3.2-1 and 3.3-1. The power flow base cases for BEP specify a normal thermal rating at 230 kV for the Julian Hinds to Buck Boulevard and Buck Boulevard to DPV1 of 988 MVA (about 900 MW). This is greater then the 520 MW specified by BEP but the thermal line rating of the basic engineering design cannot be used to determine how much power can be transferred to Julian Hinds or DPV1 due to overloads beyond Julian Hinds and on DPV1. As previously discussed, staff believes the Julian Hinds to Buck Boulevard full design capacity should be upgradeable in the future, if needed, for a higher capacity so at least the proposed transmission line through Utility Planning Corridor K could provide substantial bulk power capability.

CONCLUSIONS AND RECOMMENDATIONS

Staff concludes as follows:

1. The current System Impact studies performed by SCE indicate that addition of the proposed new transmission modifications would have some adverse impact on the existing transmission system. With full 520 MW BEP generation output flow on the proposed transmission modifications, the study identified new overloads in the SCE and MWD systems during normal and emergency conditions. Some of the overload criteria violations in the SCE system are due to increases to the already existing pre-project overloads. For thermal overloads, mitigation measures are considered, but are not selected. For the Buck Blvd.-DPV1 line configuration, reliability criteria violations are identified for transient stability and post-transient voltage deviation, but mitigation measures are not addressed. The short circuit study results indicate that breaker fault interrupting duties at some substations could be exceeded due to increased fault currents, but specific reliability criteria violations including locations are not identified. For the proposed Buck Blvd.-DPV1 line component, a short circuit study for a line to ground fault was not performed and breaker fault duties were not provided in the results. Potential impacts on the transmission Paths 42 and 49 were not analyzed, nor were any potential adverse impacts in the IID or APS systems.
2. The current SIS performed by SCE is a preliminary study because a definite plan for the new transmission modifications has not been developed or finalized in the study with their respective transfer capability to the CAISO grid and selected mitigation measure for each reliability criteria violation. According to SCE, a specific transmission plan will be recommended in the Facilities study. In addition, the primary study was not conducted with appropriate computer base case models for 2008 summer peak and 2008 autumn (off-peak) conditions without the proposed DPV2 line. Moreover, the CAISO has recently provided SCE with the

new base case computer models for 2008 summer peak and 2008 autumn (off-peak) conditions with only DPV1 line having more stressed flows on Path 49's southern system transmission lines, and the cases need to be further modified by SCE to include other system parameters such as approved transmission projects within the SCE system. Staff, therefore, concludes that the results of the current SIS studies are inadequate, conformance with LORS cannot be determined and the studies provide only a preliminary assessment of adequacy and transfer capability of the proposed transmission modifications and their adverse downstream impacts.

It is, therefore, necessary for the petitioner to submit amended SIS and Facilities Study reports prepared by SCE for a definite transmission plan for each proposed transmission modification or the combined modifications with its respective transfer capability for delivering BEP power to the CAISO grid and selected mitigation in conformity with the TSE Data Requests nos. 73 and 74 dated Novemeber 1, 2004 and with the CAISO recent study plan matrix. The study must be performed with the aforesaid new stressed 2008 summer peak and 2008 autumn base cases, and with full 520 MW or partial BEP generation output flow on each of the proposed new transmission line components and/or on both the combined transmission line modifications. The study must identify any potential adverse impacts in the IID and APS (in lower Colorado River Yuma area) systems. It is necessary to analyze the potential impacts on Path 42 and Path 49. For the proposed Buck Blvd.-Julian Hinds line component, the SIS study along with an engineering evaluation needs to be conducted with and without consideration for reconductoring the existing Julian Hinds-Mirage 230 kV line with SSAC and/or ACSR conductors. The study report must be submitted with all pertinent information as stated in the TSE Data request. Staff anticipates that the magnitude of system reliability criteria violations in the post-project scenario will increase in the amended SIS reports, which are also known to the petitioner and SCE as Sensitivity study reports per the CAISO study plan.

3. The results of the SIS performed by Western demonstrate that addition of the proposed transmission lines at the Buck Blvd. substation would have no adverse impact on Western's Desert Southwest (DSW) region system under normal and single contingency conditions. Maximization of power flow from BEP generation on the new proposed lines unloads South of Parker 161 kV lines in Western's DSW system including reduced flow in Path 59. The proposed interconnections are acceptable to Western subject to selection of the proposed equipment additions and modifications at the Buck Blvd. substation. The study, however, recommends a System Operating Procedure (SOP) for controlling the angles of the proposed two Phase Shifting transformers in order to avoid any overload under normal conditions.

4. Since the Western study was not performed under double contingency conditions, it is necessary for the petitioner to submit a supplementary SIS report prepared by Western for each transmission modification for power flow and transient stability analyses for credible double contingencies using the new 2008 summer peak and 2008 autumn base cases. The supplementary report must also include a revised

short circuit study using a suitable 2008 base case and the results require including breaker fault duties of the substations in the Western system.

5. Staff recognizes that the transmission modifications will have some Noteworthy Public Benefits. But staff is uncertain at this stage whether the transmission modifications would help to relieve transmission congestion in the SCE system until a further study is performed.

6. Insufficient information exists to fully evaluate cumulative system reliability impacts. For future transmission projects in the area such as the DSWTP line or DPV2 line for delivering power to SCE's Devers substation, the proposed transmission modifications would cause some cumulative system reliability impacts by increasing existing facility overloads in the SCE system. The transmission modifications would have cumulative impacts on power flows for Path 42 and Path 59. The transmission modifications would likely have cumulative impacts and affect power flows on the DPV1 and proposed DPV2 lines. The potential cumulative impacts of BEP II and the DSWTP which is lower in the generation/transmission queue cannot be assessed. The BEP II applicant is responsible for assessing the impacts of their project based on their position in the queue. Staff is uncertain if a BEP II SIS can be secured but we have requested one in the BEP II AFC process.

7. The CAISO is responsible for ensuring electric system reliability for all participating transmission owners within the CAISO controlled grid. The CAISO will review to ensure adequacy of the proposed transmission plans for delivery of full 520 MW power from BEP to the SCE transmission system meeting all applicable reliability criteria. According to the CAISO Tariff, Section 3.2.1, the CAISO will determine the "Need" for the proposed transmission additions or upgrades. According to the CAISO Tariff, Section 3.2.4 the CAISO will also perform an operational review of all facilities that are to be connected, or made part of, the CAISO controlled grid.

   The CAISO will, therefore, review the studies performed by SCE or any third party, provide their analysis, conclusions and recommendations, and issue preliminary and final approval of the transmission modifications in concurrence with the selected mitigation measures. The CAISO's final approval letter would ensure that the proposed transmission plans meet applicable NERC/WECC and Cal.-ISO planning standards and reliability criteria. The CAISO will provide testimony at the Energy Commission hearings.

8. In view of the cumulative transmission development proposals in the designated Utility Planning Corridor K, the Buck Boulevard to Julian Hinds 230 kV line may be incompatible with the policies of the CDCA Plan to optimize use of the corridor. The Julian Hinds to Buck Boulevard line could be considered to create a duplication and proliferation of transmission facilities within the designated Utility Planning Corridor K when viewed from a cumulative project perspective. To mitigate this potential incompatibility, staff suggests a higher capacity transmission configuration initially or a configuration that can be expanded to higher capacity when needed. We are working with BLM to fully understand their concerns and their position on this topic. To provide for expandable capacity staff recommends **Condition of Certification TSE-1** which requires either a double circuit 230 kV

line from Julian Hinds to Buck Boulevard (with the option to build one 230 kV circuit initially) or a 500 kV line (with option to energize initially at 230 kV).

9. Because staff's standard conditions are not sufficient to remedy the potential impacts identified in the preliminary System Impact studies and because the petitioner has not identified which of the transmission modifications proposed by the petitioner will be implemented, only one Condition of Certification **TSE-1** is recommended at this stage. Staff will recommend additional Conditions of Certification in the final staff assessment.

In order for the staff to complete the Final Staff Assessment, the following information is needed:

1. The ammended System Impact Study reports prepared by SCE.
2. The Supplementary System Impact Study report prepared by Western.
3. The Facilities Study report prepared by SCE.
4. The Facilities Study report prepared and approved by Western.
5. The CAISO analysis, recommendations and preliminary/final approval letter.

PROPOSED CONDITION OF CERTIFICATION

TSE-1 The project owner shall construct a 230 kV double circuit or 500 kV single circuit line to the Julian Hinds substation. The 230 kV line may be constructed with one circuit strung initially. The 500 kV line may be operated at 230 kV initially.

Verification: A verification process will be developed prior to the Final Staff Assessment.

REFERENCES

CAISO (California Independent System Operator) 1998a. CAISO Tariff Scheduling Protocol; posted April 1998, Amendments 1, 4,5,6 , and 7 incorporated.

CAISO (California Independent System Operator) 1998b. CAISO Dispatch Protocol, posted April 1998.

CAISO (California Independent System Operator) 2002a. CAISO Grid Planning, February 7, 2002.

CAISO (California Independent System Operator) 2003a. CAISO, FERC Electric Tariff, First Replacement Vol. No. 1, March 11, 2003.

Blythe Energy, LLC, Blythe, California (BLYTHE) 2004a. Petition for post certification amendment. Submitted to the Docket on October 12, 2004.

Blythe Energy, LLC, Blythe, California (BLYTHE) 2004b. Additional Information-Petition for Modification. Submitted to the Docket on October 15, 2004.

Blythe Energy, LLC, Blythe, California BLYTHE) 2004c. Notice Relating to Data Responses. Submitted to the Docket on November 10, 2004

Blythe Energy, LLC, Blythe, California BLYTHE) 2004d. Blythe Transmission Line Project – Height Variance. Submitted to the Docket on November 16, 2004.

Blythe Energy, LLC, Blythe, California (BLYTHE) 2004e. Data Responses Nos. 1 – 99. Submitted to the Docket on December 1, 2004.

Blythe Energy, LLC, Blythe, California (BLYTHE) 2004f. Preliminary Responses to Questions on Transmission System Engineering received from the CEC on 10/18/04. Submitted to the Docket on December 2, 2004.

Blythe Energy, LLC, Blythe, California (BLYTHE) 2004g. Supplemental Response to Data Requests #41, 51, 59, 65, 67, 71, 73n, and 74m. Submitted to the Docket on December 14, 2004.

California Energy Commission, Sacramento, California (CEC) 2004c. Staff's Data Requests Nos. 1 - 99. Submitted to the Docket on November 1, 2004.

California Energy Commission, Sacramento, California (CEC) 2004f. Outline for Blythe Energy Project T-line Modifications. Submitted to the Docket on November 16, 2004

California Energy Commission, Sacramento, California (CEC) 2004j. Second Set of Data Requests Nos. 100 – 128. Submitted to the Docket on December 16, 2004.

Western Area Power Administration, Lakewood, Colorado. (WAPA) 2004c. System Impact Study – Blythe Interconnection Request for Interconnecting Western's Buck Blvd. 161-kV Substation to SCE Palo Verde-Devers #1 500-k Volumes 1 & 2. Submitted to the Docket on December 1, 2004

Western Area Power Administration, Lakewood, Colorado. (WAPA) 2004d. System Impact Study-SCE Interconnection Request for Termination of Julian Hinds. Submitted to the Docket on December 1, 2004.

Western Area Power Administration, Lakewood, Colorado. (WAPA) 2004e. Comments on Blythe T-line Amendment Data Responses, Filed 11/30/2004. Submitted to the Docket on December 9, 2004.

TSE ATTACHMENT 1 LORS

- NERC Planning Standards provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC planning standards provide for system performance levels under normal

and contingency conditions. With regard to power flow and stability simulations, while these Planning Standards are similar to NERC/WECC Standards, certain aspects of the WECC standards are either more stringent or more specific than the NERC standards for Transmission System Contingency Performance. The NERC planning standards apply to interconnected systems and to individual service areas (NERC 1998).

- The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
- The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2001).
- Western “General Requirements for Interconnection,” September 1999, provides Western’s general minimum requirements including technical, environmental and contractual requirements for interconnection, additions and modifications to Western’s transmission facilities.
- California Public Utilities Commission (CPUC) General Order 95 (GO-95), “Rules for Overhead Electric Line Construction,” formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
- CAISO Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the CAISO transmission grid facilities. The CAISO Planning Standards incorporate the merged NERC and

WECC Planning Standards. With regard to power flow and stability simulations, the CAISO Planning Standards are similar to NERC/WECC and the NERC Planning Standards for Transmission System Contingency Performance. However, the CAISO Standards also provide some additional requirements that are not found in the NERC/WECC or NERC Planning Standards. The CAISO Standards apply to all participating transmission owners interconnecting to the CAISO controlled grid. It also applies when there are any impacts to the CAISO grid due to facilities interconnecting to adjacent controlled grids not operated by the CAISO (CAISO 2002a).

- CAISO/FERC Electric Tariff provides guidelines for construction of all transmission additions/upgrades (projects) within the CAISO controlled grid. The CAISO determines the “Need” of the proposed project where it will promote economic efficiency or maintain System Reliability. The CAISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the CAISO grid.

TSE ATTACHMENT 2 DEFINITION OF TERMS

ACSR	Aluminum Cable Steel Reinforced.
SSAC	Steel Supported Aluminum Conductor
AAC	All Aluminum conductor.
ADR	Alternative Dispute Resolution
Ancillary Services Market	The market for services other than scheduled energy that are required to maintain system reliability and meet WSCC/NERC operating criteria. Such services include spinning, non-spinning, replacement reserves, regulation (AGC), voltage control and black start capability.
Ampacity (Amps)	Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, at which damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.
Amperes or Amps	The unit of measure of electric current; specifically, a measure of the rate of flow of electrons past a given point in an electric conductor such as a power line.
Available Transmission Capacity (i.e., ATC)	Available Transmission Capacity in any hour is equal to Operational Transmission Capacity for that hour minus Existing Transmission Contracts for that same hour (ATC = OTC - ETC). (See the other definitions below).
Breaker	Circuit breaker - An automatic switch that stops the flow of electric current in a suddenly overloaded or otherwise abnormally stressed electric circuit.
Bundled Conductor	Two or more wires, connected in parallel through common switches, that act together to carry current in a single phase of an electric circuit.
Bus	Conductors that serve as a common connection for multiple transmission lines.
CAISO	California Independent System Operator - The CAISO is the FERC regulated control area operator of the CAISO transmission grid. Its responsibilities include providing non-discriminatory access to the grid, managing congestion, maintaining the reliability and security of the grid, and providing billing and settlement services. The CAISO has no affiliation with any market participant.

CAISO Controlled Grid	The combined transmission assets of the Participating Transmission Owners (PTOs) that are collectively under the control of the CAISO.
CAISO Reliability Criteria	Reliability standards established by the NERC, WSCC, and the ISO, as amended from time to time, including any requirements of the NRC.
CAISO Planning Process	Annual studies conducted by the PTO's and CAISO in an open stakeholder process. These studies determine the future transmission reinforcements necessary to enable the ISO Controlled Grid to meet the ISO Reliability Criteria. The CAISO Planning Process also includes studies of new resource connections and third party proposals for new additions to the ISO Controlled Grid.
CAISO Tariff	Document filed with the appropriate regulatory authority (FERC) specifying lawful rates, charges, rules, and conditions under which the utilities provide services to parties. A tariff typically includes rate schedules, list of contracts, rules, and sample forms.
Capacitor	An electric device used to store charge temporarily, generally consisting of two metallic plates separated by a dielectric.
Cogeneration	The consecutive generation of thermal and electric or mechanical energy.
Conductor	The part of the transmission line (the wire) which carries the current.
Congestion	The condition that exists when market participants seek to dispatch in a pattern which would result in power flows that cannot be physically accommodated by the system. Although the system will not normally be operated in an overloaded condition, it may be described as congested based on requested/desired schedules.
Congestion Management	Congestion management is a CAISO scheduling protocol that is used to resolve Congestion.
Contingency	Disconnection or separation, planned or forced, of one or more components from the electric system.
Day-Ahead Market	The forward market for the supply of electrical power at least 24 hours before delivery to Buyers and End-Use Customers.
Demand	Load plus any exports from an electric system.

Demand Forecast	An estimate of demand (electric load) over a designated period of time.
Dispatch	The operating control of an integrated electric system to: (i) assign specific generators and other sources of supply to effect the supply to meet the relevant area Demand taken as Load rises of falls; (ii) control operations and maintenance of high voltage lines, substations, and equipment, including administration of safety procedures; (iii) operate interconnections (iv) manage energy transactions with other interconnected Control Areas; and (v) curtail Demand.
dV/dQ	The partial derivative of the voltage at a bus with respect to the reactive injection at that bus. (See any elementary college calculus text for further discussion of partial derivatives.) The point at which dV/dQ approaches infinity is defined as the point of voltage collapse.
Emergency Condition	The system condition when one or more system elements are forced (not scheduled) out of service.
Emergency Overload	Loading of a transmission system element above its Emergency Rating during an Emergency Condition.
Emergency Rating	A special rating established for short-term use in the event of a forced line or transformer outage (e.g., an emergency). An emergency rating may be expressed as a percentage of the normal rating (e.g., 115 percent of normal) or as an elevated current rating. For example, the normal rating for a conductor may be 1000 amperes and the emergency rating may be 1100 amperes.
Excessive Voltage Deviation	A sudden change in voltage at any substation as a result of a Contingency that exceeds established allowable levels of change.
Existing Transmission Contract (i.e., ETC)	A contract for transmission services that was in place prior to the start of ISO operations.
Fault Duty	The maximum amount of short-circuit current which must be interrupted by a given circuit breaker.
FERC	Federal Energy Regulatory Commission
General Order 95	California Public Utilities Commission (CPUC) General Order which specifies transmission line clearance requirements.

Generation Outlet Line	Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation to the main grid.
Generation Tie	Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation to the main grid.
Generator	A machine capable of converting mechanical energy into electrical energy.
Heat Rate	The amount of energy input to an electric generator required to obtain a given value of energy output. Usually expressed in terms of British Thermal Units per kilowatt hour (Btu/kWh).
Hour-Ahead Market	The electric power futures market that is established 1-hour before delivery to End-Use Customers.
Imbalance Energy	Energy not scheduled in advance that is required to meet energy imbalances in real-time. This energy is supplied by Participating Generators under the CAISO's control, providing spinning and non-spinning reserves, replacement reserves, and regulation, and other generators able to respond to the CAISO's request for more or less energy.
Interconnected System Reliability	See Reliability.
Kcmil or kcm	One thousand circular mils. A unit of the conductor's cross sectional area which, when divided by 1,273, gives the area in square inches.
kV	Kilovolt - A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground.
Load	The rate expressed in kilowatts, or megawatts, at which electric energy is delivered to or by a system, or part of a system to end use customers at a given instant or averaged over an designated interval of time. (Also see Demand.)
Load Factor	The average Load over a given period (e.g., one year) divided by the peak Load in the period.
Loop	An electrical connection where a line is opened and a new substation is inserted into the opening. A looped configuration creates two lines, one from each of the original end points to the new substation. A looped configuration is more reliable than a tap configuration because the looped configuration provides two lines into the substation rather than just one in a tap configuration. Also, see Tap below.

Low Voltage	Voltage at any substation that is below the minimum acceptable level.
Marginal Unit	The Generator (or Load) that sets the market clearing price in the ISO's Ancillary Services Market (or the Power Exchange's energy market). The marginal unit is the Generator or Load that had the highest accepted bid for energy or Demand reduction.
MVAr	Megavar - One megavolt ampere reactive (a measure of reactive power). Reactive power demand is generally associated with motor loads and generation units or static reactive sources must supply this demand in the system.
MVA	Megavolt ampere - A unit of apparent power: equal to the product of the line voltage in kilovolts, the current in amperes, and the square root of 3 divided by 1000.
MW	Megawatt - A unit of power equivalent to 1,341 horsepower.
NERC	North American Electric Reliability Council
Nominal Voltage	Also known as Normal Voltage. The voltage at which power can be delivered to loads without damage to customer equipment or violation of CAISO Reliability Criteria when the system is under Normal Operation.
Normal Operation	When all customers receive the power they are entitled to without interruption and at steady voltage, and no element of the transmission system is loaded beyond its continuous rating.
NRC	Nuclear Regulatory Commission
N-1 Contingency	A forced outage of one system element (e.g., a transmission line or generator).
N-2 Contingency	A forced outage of two system elements usually (but not exclusively) caused by one single event. Examples of an N-2 Contingency include loss of two transmission circuits on a single tower line or loss of two elements connected by a common circuit breaker due to the failure of that common breaker.
Operational Transfer Capability (i.e., OTC)	The maximum amount of power which can be reliably transmitted over an electrical path in conjunction with the simultaneous reliable operation of all other paths. This limit is typically defined by seasonal operating studies, and should not be

	confused with a path rating. Also referred to as OTC.
Outlet	Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation to the main grid.
Participating Generator	A generator that has signed an agreement with the CAISO to abide by the rules and conditions specified in the CAISO Tariff.
Participating Transmission Owner (i.e., PTO)	A Participating Transmission Owner is an electric transmission owning company that has turned over operational control of some or all of their electric transmission facilities to the CAISO. Currently, the three Participating Transmission Owners are PG&E, SCE, and SDG&E.
Path Rating	The maximum amount of power which can be reliably transmitted over an electrical path under the best set of conditions. Path ratings are defined and specified in the WSCC Path Rating Catalog.
PG&E	Pacific Gas & Electric Company
PG&E Interconnection Handbook	Detailed instructions to new customers (either load or generation) on how to interconnect to the PG&E electric system.
Post-Transient Voltage Deviation	The change in voltage from pre-contingency to post-contingency conditions once the system has had time to readjust.
Power Flow	A generic term used to describe the type, direction, and magnitude of actual or simulated electrical power flows on electrical systems.
Power Flow Analysis	A power flow analysis is a forward looking computer simulation of all major generation and transmission system facilities that identifies overloaded circuits, transformers and other equipment as well as system voltage levels under both Normal and Emergency Conditions.
Pump	A hydroelectric generator that acts as a motor and pumps water stored in a reservoir to a higher elevation.
Q/V Curve	A graphical representation of the voltage a given substation bus as a function of the reactive injection at that bus.
RAS	Remedial Action Scheme - An automatic control provision (e.g., trip a generation unit to mitigate a

	circuit overload).
Reactive Power	The portion of apparent power that does no work in an alternating current circuit but must be available to operate certain types of electrical equipment. Reactive Power is most commonly supplied by generators or by electrostatic equipment, such as shunt capacitors.
Reactive Margin	Reactive Power must be available at all load buses to prevent voltage collapse. Reactive margin is the amount of additional reactive load, usually measured in MVAR's, which may be added at a particular bus before the system experiences voltage collapse.
Reactor	An electric device used to store electric current temporarily, generally consisting of a coil of wire wound around a magnetic core.
Real Power	Real power is the work-producing component of apparent power and is required to operate any electrical equipment that performs energy conversion. Examples of this electrical equipment would be a heater, a lamp, or a motor. Real power is usually metered in units of kilowatt-hours (kWh).
Real-Time Market	The competitive generation market controlled and coordinated by the CAISO for arranging real-time imbalance power.
Reconductoring	The removal of old conductors on a transmission or distribution line followed by replacement of these conductors with new higher capacity conductors.
Reliability	The degree of performance of the elements of the electric system that results in electricity being delivered to customers within accepted standards and in the amount desired. May be measured by the frequency, duration, and magnitude of adverse effects on the electric supply.
Reliability Criteria	Principals used to design, plan, operate, and assess the actual or projected reliability of an electric system.
Reliability Must-Run (i.e., RMR)	The minimum generation (number of units or MW output) required by the CAISO to be on line to maintain system reliability in a local area.

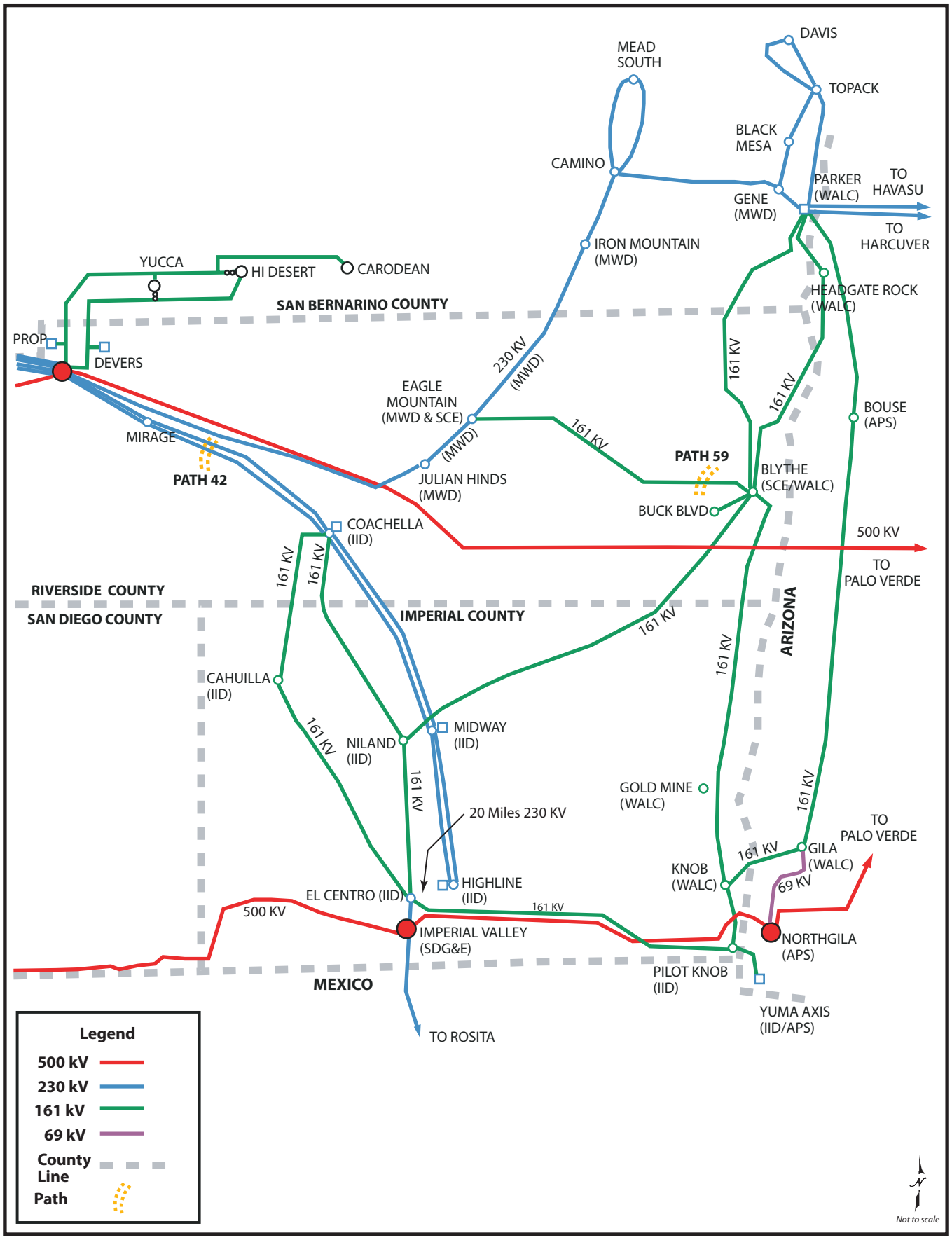
SCE Transmission Owner Tariff	Provides guidelines to interconnect SCE System to a generator or to construct transmission expansions and facilities upgrades.
SCE	Southern California Edison Company
SDG&E	San Diego Gas and Electric Company
Sensitivity Study	An analysis to determine the impact of varying one or more parameters on the results of the original analysis.
Series Capacitor	A static electrical device that is connected in-line with a transmission circuit that allows for higher power transfer capability by reducing the circuit's overall impedance.
Shunt Capacitor	A static electrical device that is connected between an electrical conductor and ground. A shunt capacitor normally will increase the voltage on a transmission circuit by providing reactive power to the electrical system.
Single Contingency	See N-1 Contingency.
Solid Dielectric Cable	Copper or aluminum conductors that are insulated by solid polyethylene type insulation and covered by a metallic shield and outer polyethylene jacket.
Source or Sink of Reactive Power	A source of Reactive Power is a device that injects reactive power into the power system (e.g., a Generator or a Capacitor). A sink of Reactive Power absorbs reactive power from the power system. Examples of reactive power sinks are shunt Reactors and motor loads.
Static Compensator	StatCom - a shunt connected power system device that includes Capacitors and Reactors controlled by solid state electronic devices as opposed to mechanically operated switches.
Substation	An assemblage of equipment that switches, changes, or regulates voltage in the electric transmission and distribution system.
Switchyard	A substation that is used as an outlet for one or more electric generators.
Switched Reactive Devices	A shunt Capacitor or shunt Reactor controlled by mechanically operated switches.
Switching Station	Similar to a substation, but there is only one voltage level.

Synchronous Condenser	A rotating mechanical device very similar to a Generator. The Synchronous Condenser has no mechanical power input and cannot produce Real Power. It can only produce or absorb Reactive Power.
System Reliability	See “Reliability”.
Tap	An electrical connection where a new line is connected to an intermediate point on an existing transmission line and a new substation is connected to the end of the new line. A tapped configuration creates a single transmission circuit with more than two end points (for example, a “T”). A tapped configuration is less reliable than a looped configuration because a fault on any portion of the tapped circuit causes a complete loss of power to the new substation. Also, see Loop above.
Tap Changing Transformer	A Transformer that has the ability change the number of windings in service. By changing the number of windings in service (by moving to a different tap), the Tap Changing Transformer has the ability to maintain a nearly constant voltage at its output terminals even though the input voltage to the Transformer may vary.
Thermal Loading Capability	The current-carrying capacity (in Amperes) of a conductor at specified ambient conditions, at which damage to the conductor is non-existent or deemed acceptable based on economic, safety, and reliability considerations.
Thermal overload	A thermal overload occurs when electrical equipment is operated in excess of its current carrying capability. Overloads are generally given in percent. For example, a transmission line may be said to be loaded to 105 percent of its rating.
Thermal rating	See Ampacity.
Transformer	A device that changes the voltage of alternating current electricity.
Transformer Loading Capability	The current-carrying capacity (in Amperes) of a transformer at specified ambient conditions, at which damage to the transformer is non-existent or deemed acceptable based on economic, safety, and reliability considerations.
TSE	Transmission System Engineering.
Underbuild	A transmission or distribution configuration where a

	transmission or distribution circuit is attached to a transmission tower or pole below (under) the principle transmission line conductors.
Undercrossing	A transmission configuration where a transmission line crosses below the conductors of another transmission line, generally at 90 degrees.
VAr	One Volt ampere reactive. Also see the definition for MVAr.
Voltage	Electromotive force or potential difference.
Voltage Collapse	The point at which the reactive demand at a substation bus exceeds the reactive supply at that bus. When the reactive demand is greater than the supply, the voltage at that point in the system will drop. Eventually, the voltage will drop to a point at which it is no longer possible to serve load at that bus.
Wheeling	A service provided by an entity, such as a utility, that owns transmission facilities whereby it receives electric energy into its system from one party and then uses its system to deliver that energy to a third party. The wheeling entity is usually paid a fee for this service.
WESTERN	Western Area Power Administration
WATTS	Western Arizona Transmission System Task Force
WECC	Western Electric Coordinating Council

TRANSMISSION SYSTEM ENGINEERING - FIGURE 1

Blythe Energy Transmission Line Project - Existing Transmission System Blythe Area

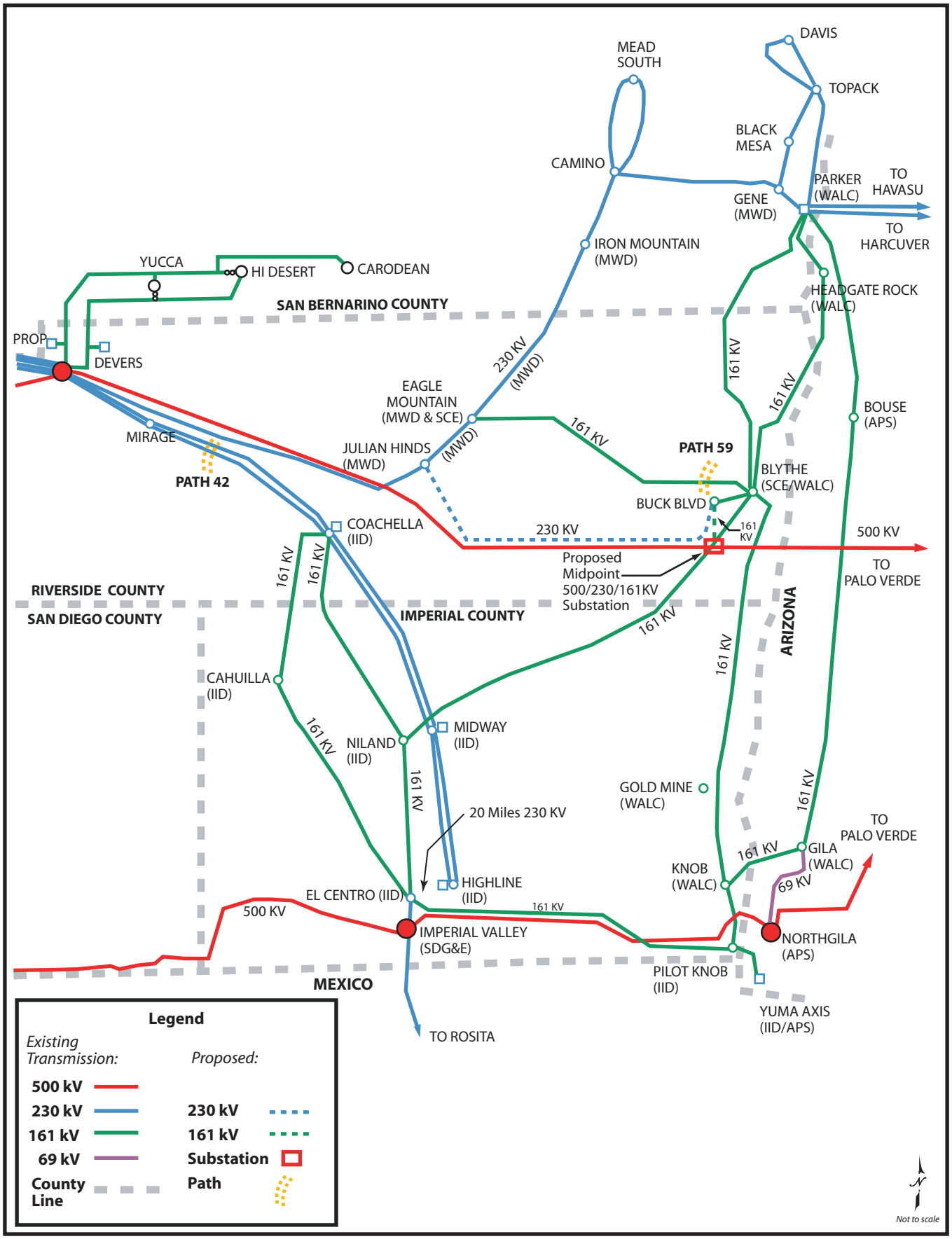


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

OURCE: SCE and CEC Staff

TRANSMISSION SYSTEM ENGINEERING - FIGURE 2

Blythe Energy Transmission Line Project - Existing Transmission System and Proposed Projects in Blythe Area



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

OURCE: SCE and CEC Staff

ALTERNATIVES

Susan V. Lee

SUMMARY OF CONCLUSIONS

More than 23 alternatives have been identified in this PSA. Six of these, in addition to the No Project Alternative, were carried forward for full consideration: Eagle Mountain Alternative, Desert Southwest Transmission Project (DSWTP) Alternative, Devers-Palo Verde 500 kV No. 2 (DPV2) Project Alternative, Buck Boulevard to Julian Hinds with Reconductoring Alternative, the Larger Capacity Line Alternative, and the Wiley Well Substation Alternative. Conclusions for several resource areas are based on inadequate baseline information, and only a preliminary conclusion is presented for transmission system engineering (TSE) because the System Impact Studies for the project are currently being revised.

Of the six alternatives evaluated, the DPV2 Alternative has the potential for greatest impacts and would have greater impacts in comparison with the proposed BEPTL in all of the issue areas except waste management, worker safety and fire protection, and facility design, where impacts would be similar. However, in TSE the DPV2 Alternative would be slightly preferred.

The Buck to Julian Hinds with Reconductoring Alternative and the Larger Capacity Line Alternative would likely have the least environmental impacts overall and both are strongly preferred for TSE. For the reconductoring alternative, the impacts from reconductoring an additional 42 miles of line between Julian Hinds to Mirage/Devers Substations would be offset by the elimination of construction of the new proposed Midpoint Substation and 6.7 miles of double-circuit transmission line (a new single-circuit line and towers would still be required). The Larger Capacity Line Alternative would allow consolidation of proposed transmission lines into a single line, creating similar short-term impacts but greatly reducing cumulative impacts that would result from construction of complete additional transmission lines adjacent to the existing DPV corridor.

Although the No Project Alternative may reduce cumulative impacts from the construction of multiple transmission projects in the same corridor, overall, the No Project Alternative is not superior to the proposed project. The No Project scenario (described in Appendix A) would likely delay and could foreclose the ability to transmit more energy generated at the Blythe Power Plant directly into California markets, which is the primary objective of the proposed BEPTL.
These comparative conclusions are preliminary, and may be refined before issuance of the Final SA/EA, based on receipt of additional information.

INTRODUCTION

This section considers potential alternatives to the construction and operation of the proposed Blythe Energy Project Transmission Line Modification (BEPTL). The purpose of this alternatives analysis is to comply with State and Federal environmental laws by providing an analysis of a reasonable range of feasible alternatives that could

substantially reduce or avoid any potentially significant adverse impacts of the proposed project (Cal. Code Regs., tit. 14, §15126.6; Cal. Code Regs., tit. 20, §1765). NEPA (Sec. 102(C)(iii) requires that alternatives to the proposed action be evaluated for all "major Federal actions significantly affecting the quality of the human environment."

This section identifies potentially significant impacts of the proposed project and analyzes different technologies and alternative transmission line terminations, configurations and routes that may reduce or avoid significant impacts. Staff has also analyzed the impacts of those alternatives.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

The Buck Boulevard Substation is under the jurisdiction of both the Energy Commission and the Western Area Power Administration (Western), an agency of the U.S. Department of Energy. As a result, the project requires both state and federal approval and is subject to review under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) and In addition, the proposed line would traverse property under the jurisdiction of the U.S. Bureau of Land Management (BLM), another federal agency, for 66 percent of the route. Therefore, Western and the BLM are joint Lead Agencies under NEPA and the Energy Commission is the Lead Agency under CEQA. Western, BLM, and the Energy Commission are undertaking a combined NEPA/CEQA analysis.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulation, Section 15126.6(a), provide direction by requiring an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." In addition, the analysis must address the "no project" alternative (Cal. Code Regs., tit. 14, §15126.6(e)).

The range of alternatives is governed by the "rule of reason" which requires consideration only of those alternatives necessary to permit informed decision-making and public participation. CEQA states that an environmental document does not have to consider an alternative of which the effect cannot be reasonably ascertained and of which the implementation is remote and speculative (Cal. Code Regs., tit. 14, §15125(d)(5)).

NATIONAL ENVIRONMENTAL POLICY ACT

NEPA requires that the decision-makers and the public be fully informed of the impacts associated with the proposed project. The intent is to make good decisions based on understanding environmental consequences, and to take actions to protect, restore, and enhance the environment. The Energy Commission's Staff Assessment will serve as Western and BLM's Environmental Assessment (EA), a NEPA compliance document that is intended to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement.

Alternatives identified must be consistent with the purpose and need for the action under consideration, which include the applicant's objectives. The applicant's objectives are described below in the Project Objectives section.

Role of Western Area Power Administration

Western's action on the project is required because Blythe Energy has applied to modify its interconnection with Western's transmission system at the Buck Boulevard Substation. Western must respond to Blythe Energy's request to modify the interconnection with its transmission system, and its action requires NEPA compliance.

Role of U.S. Bureau of Land Management

Blythe Energy has applied to construct approximately 49 miles of the new transmission line on U.S. BLM lands in BLM designated utility corridors. Therefore, Blythe Energy must obtain a Right-of-Way Grant Permit from BLM to implement the project. The issuance of a Right-of-Way Grant Permit is considered a proposed action and would trigger the requirement for BLM to comply with NEPA.

BLM's decision on the project will be based on its consideration of impacts identified in this Environmental Assessment, as well as other regulatory requirements. In accordance with Title 43, Code of Federal Regulations §1610.5-3, all actions on public lands must be in conformance with applicable BLM land use plans. The California Desert Conservation Area (CDCA) Plan of 1980, as amended is the plan applicable to the area covered by the proposed transmission line project.

SUMMARY DESCRIPTION OF THE PROPOSED PROJECT

Blythe Energy is proposing transmission line modifications that would allow more of its electrical output from the Blythe Energy Project (BEP) to be delivered to the southern California ISO-controlled electrical transmission system. Blythe Energy is the owner of the 520-megawatt (MW) natural gas fired electric-generating facility situated within the City of Blythe, California. In 2001, the California Energy Commission approved the Blythe Energy Application for Certification (99-AFC-8) for the BEP under which Blythe Energy constructed and operates the facility. The BEP commenced commercial operation in 2003.

According to the applicant, the proposed transmission line modifications are for the sole purpose of improving the long-term transmission paths available for delivery of the BEP electrical output to the southern California CAISO-controlled electrical transmission system. According to the Applicant, the proposed transmission line modifications would also serve to relieve transmission congestion and provide needed energy supplies in southern California in the future. This summary is from information presented in the Petition (BLYTHE, 2004a). These conclusions cannot be verified with existing System Impact Studies. Studies necessary to verify these or other conclusions will be available later.

DESCRIPTION OF PROPOSED MODIFICATIONS

The proposed modifications would be located entirely within Riverside County, between the Buck Boulevard Substation near the City of Blythe and the Julian Hinds Substation near Hayfield. There are two distinct components to the proposed BEP transmission line modifications. Blythe Energy is requesting approval of both components but may opt to construct only one or the other.

Buck Boulevard to Julian Hinds Transmission Line Component:

- Upgrades to Buck Boulevard Substation.
- Installation of approximately 67.4 miles of new 230 kilovolt (kV) single-circuit transmission line between the Buck Boulevard Substation located adjacent to the BEP and the Julian Hinds Substation located approximately sixty miles to the west.
- The proposed transmission line route would generally follow SCE's existing 500 kV Devers-Palo Verde (D-PV) transmission line.
- Transmission line structures would be concrete, single-pole structures.
- Upgrades to and expansion of the Julian Hinds Substation.

For most of its length, the Buck Boulevard to Julian Hinds transmission line component would be located within a 95-foot right-of-way (ROW) adjacent to and north of the existing SCE Devers-Palo Verde 500 kV line ROW. The existing DPV right-of-way on BLM lands is 260 feet in width (wide enough to accommodate SCE plans for a second DPV transmission line); therefore, an additional ROW of 95 feet in width adjacent to the existing DPV right-of-way would be required.

Buck Boulevard to Devers-Palo Verde Transmission Line Component:

- Upgrades to Buck Boulevard Substation.
- Installation of approximately 6.7 miles of a new 230 kV single-circuit transmission line (initially operated at 161 kV) between the Buck Boulevard Substation and SCE's existing DPV 500 kV transmission line, mostly adjacent to an existing Imperial Irrigation District (IID) 161 kV transmission line.
- Transmission line structures would be concrete single-pole structures.
- Construction of a new 161 kV to 500 kV substation ("Midpoint Substation") at the point of interconnection with SCE's existing DPV 500 kV transmission line.

Because the path ratings for each of the proposed transmission line components may not be established at the time of Energy Commission review and decision on Blythe Energy's petition, the applicant is requesting approval of each transmission component path/facility described as part of the project modifications. Blythe Energy believes that it may be necessary to ultimately build both components to deliver the facility's full output to customers in California.

OBJECTIVES OF THE PROPOSED PROJECT

The Blythe Energy Petition presents the following four objectives for the BEPTL:

- Increase the electrical capability of transmission paths between the BEP and additional points of interconnection with the CAISO controlled transmission system;
- Blythe Energy to maintain management control over the schedule to complete the modifications and construction cost through Blythe Energy participation as the sole project sponsor;
- Blythe Energy to obtain long-term transmission access for delivery of power over the proposed transmission modifications to the CAISO transmission system sufficient for Blythe Energy to establish long-term off-take agreements for the full BEP electrical output; and
- Be in commercial operation within two years of approval.

CEQA requires that alternatives meet *most* project objectives; meeting all objectives is not required. In this analysis, the second objective (control by Blythe Energy) is considered desirable but not considered essential, since this objective would limit the scope of alternatives to a very narrow range. In addition, the fourth objective (to be operational in two years) is considered to be desirable, but not essential for consideration of alternatives or from the perspective of meeting state interests.

PURPOSE AND NEED FOR THE PROPOSED PROJECT

The purpose of the BEPTL is to increase the electrical capability of transmission paths between the BEP and additional points of interconnection with the CAISO controlled transmission system, and to allow Blythe Energy to establish increased sales agreements to southern California for the electrical output of the BEP. The applicant states that by providing this additional transmission capacity, the BEPTL will better serve California's growing need for electricity in its more densely populated areas. This conclusion cannot be verified with extant System Impact Studies. Additional System Impact Studies will be secured later to verify this and other conclusions.

POTENTIAL SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

The environmental and engineering issues with the greatest potential for significant environmental effects of the proposed project are the following:

- Biological resources: the transmission line route passes through critical habitat for the desert tortoise, as identified by the U.S. Fish and Wildlife Service (USFWS).
- Cultural resources: there are prehistoric sites along the route that could be affected by construction of the project.
- Land use impacts may result from inconsistency of the proposed project with established laws and policies.
- Inserting BEP power into the transmission system may cause violations of system reliability criteria and requires mitigation that cannot be determined with the current System Impact Studies.

Therefore, the alternatives analysis has focused on identifying and evaluating alternatives with the potential to reduce or avoid impacts on biological, cultural, and land use. Issues related to transmission system engineering (system reliability, use of a designated Utility Planning Corridor, and need) may affect all alternatives or may be different for different transmission routes, terminations, and configurations.

ALTERNATIVES ANALYSIS

More than 23 alternatives have been identified in this PSA. The applicant presented two of these as part of its alternatives analysis (I-10 Alternative and Eagle Mountain Alternative; BLYTHE 2004a) and two sub-alignments. Staff identified six additional potential transmission alternatives and routes: the North of 1-10 Sub-Alignment, DPV/DPV2 Alternative, Eliminate Midpoint Substation Alternative, Buck to Mirage/Devers Alternative, and Buck to Julian Hinds with Reconductoring Alternative. Staff also evaluated the Desert Southwest Transmission Project (DSWTP) and the Devers-Palo Verde 500 kV No. 2 (DPV2) projects as project alternatives.

IDENTIFICATION AND SCREENING OF ALTERNATIVES

To prepare this Alternatives analysis, staff used the following methodology:

1. Provide an overview of the project, identify the basic objectives and purpose and need of the project, and describe its potentially significant adverse impacts.
2. Identify and evaluate alternative transmission routes, terminations and capacity.
3. Identify and evaluate technology alternatives to the project such as increased energy efficiency (or demand-side management) and the use of alternative technologies (e.g. wind, solar, or geothermal energy).
4. Evaluate the impacts of not constructing the project, known as the “no project” alternative under CEQA or the “no action” alternative under NEPA.

Based on the above methodology, the following criteria were used to screen and analyze potential alternatives. Each alternative was evaluated for its ability to:

1. Avoid or substantially lessen one or more of the potential significant effects of the project as described above;
2. Meet most project objectives.
3. Not create significant impacts of its own.
4. Be sufficiently far from moderate or high-density residential areas or to sensitive receptors (such as schools and hospitals) or to recreation areas.

Staff used a two-stage process to select alternatives for analysis: first a range of alternatives was identified, and then these alternatives were screened to select those that qualified for detailed evaluation. Staff considered alternatives to the project that were identified by several sources, including the applicant, previous environmental documents, and Energy Commission staff.

The following sections first describe alternatives suggested by the Applicant, followed by alternatives identified by staff. Appendix A presents the detailed analysis of alternatives that have been retained for complete analysis, including five transmission alternatives, one substation location alternative, and the No Project Alternative. The analysis also considers construction of the proposed project as a double-circuit 230 kV transmission line (rather than the single-circuit as proposed), and the construction of a 500 kV line that would initially be operated at 230 kV.

Appendix B describes alternatives that were eliminated from detailed consideration and presents an explanation of why these alternatives are not analyzed. Alternatives that were eliminated from detailed consideration are:

- Several transmission and substation alternatives
- Other transmission and technology alternatives (DC line, underground construction)
- Renewable resources (solar, wind, biomass, tidal, geothermal)
- Demand-side management.

ALTERNATIVES Table 1 lists all alternatives identified in this analysis, and states whether each is retained for detailed evaluation.

ALTERNATIVES Table 1
Alternatives Retained or Eliminated

Alternative	Retain?	If Not, Why Not (Detail Provided in Appendices A and B)
Buck Boulevard to Julian Hinds Transmission Line Route Alternatives		
Interstate 10 Alternative	No	• No environmental benefit compared to proposed and greater visual and cultural resources impacts.
Eagle Mountain Alternative	Yes	• Considered as Eagle Mountain Alternative in Appendix A
Sub-Alignments Along Buck Boulevard to Julian Hinds Route		
North of I-10 Sub-Alignment	No	• Visual impacts from new corridor close to I-10.
Alligator Rock Sub-Alignment	No	• Crosses a central portion of Alligator Rock ACEC (7,726 acre area of archaeological significance) • Crosses steeper rocky terrain, which would include need for blasting in some locations • Since farther from I-10 may be in an area with greater potential for desert tortoise impacts
East of Julian Hinds Sub-Alignment	No	• Crosses through sensitive cultural resources (Hayfield Rock Art District) • The I-10 crossing is more visible because there is no overpass/bridge • Parallels southern boundary of Joshua Tree National Park and may be within viewshed of recreational viewers

Alternative	Retain?	If Not, Why Not (Detail Provided in Appendices A and B)
Mesa Verde Sub-Alignment	No	• A new transmission corridor would be created parallel to the I-10. • New access roads (about 5.5 miles) would be required for transmission line construction. • Located in habitat of Mojave fringed-toed lizard (special status species) and within habitat for desert tortoise.
Substation Alternatives		
Wiley Well Substation Alternative	Yes	• Considered as Wiley Well Substation Alternative in Appendix A
Mesa Verde Substation Alternative	No	• Longer access road improvements due to distance from paved roads • Greater visual resource impacts due to proximity to I-10.
Project Alternatives		
DSWTP Alternative	Yes	• Considered as Desert Southwest Transmission Project (DSWTP) Alternative in Appendix A
DPV2 Alternative	Yes	• Considered as Devers-Palo Verde 500 kV No. 2 Project (DPV2) Alternative in Appendix A
Other Transmission Alternatives		
Access to CAISO via Mead Substation	No	Much longer construction extent and duration and not feasible due to much greater cost and time to permit, plus interstate construction.
DPV1/DPV2 Alternative	No	Status of DPV2 uncertain, DPV is near capacity, and Applicant would not be in control of siting. Does not meet project objectives and goals, such as project timeline.
Eliminate Midpoint Substation Alternative	No	Greater environmental and land use impacts from creation of a 500 kV corridor with either a 500 kV DCTL or two 500 KV SCTLs between Midpoint and Buck Blvd (or Hobsonway) Substations, which is the most developed portion of the route
Buck to Mirage/Devers Alternative	Yes	Considered as an alternative variation under the Desert Southwest Transmission Project Alternative in Appendix A
Buck to Julian Hinds with Reconductoring Alternative	Yes	Considered as Buck to Julian Hinds with Reconductoring Alternative in Appendix A
Other Alternatives		
DC Transmission	No	Less flexibility for interconnections and longer construction time. Greater impacts associated with DC terminal construction (i.e., converter stations).
Underground Construction	No	Significantly greater impacts to soils/erosion, cultural resources, biological resources from trenching and longer construction time and associated impacts. Longer repair times and substantially more costly.

Alternative	Retain?	If Not, Why Not (Detail Provided in Appendices A and B)
Install Larger Capacity Line	Yes	Eliminates need for other proposed lines in same corridor; reduces cumulative impacts in visual, biological, and cultural resources. More consistent with BLM desire to prevent proliferation of transmission lines in existing corridor.
Generation Alternatives	No	Inconsistent with project objectives because siting generation near Buck Blvd. or in other areas of California would not improve BEP's ability to transmit electricity generated to California markets.
Demand Side Management	No	Already factored into electrical system planning. Inconsistent with project objectives.
Integrated Resource Alternative	No	Feasibility and reliability concerns. Inconsistent with project objectives.
No Action Alternative	Yes	Considered as No Project/No Action Alternative in Appendix A

Alternatives Identified by the Applicant

Blythe Energy presented a range of potential alternatives to the proposed BEPTL. In the alternatives selection process for the PSA, consideration was given to issues identified in consultation with various agencies, review of other existing and proposed projects in the area, and issues identified during certification and subsequent modifications to the BEP (99-AFC-8). The alternatives screening process included an assessment of consistency with Blythe Energy's objectives, the project's purpose and need, and public policy objectives; technical and regulatory feasibility; and potential to provide a clear environmental advantage over the proposed modifications.

The primary potential environmental issues and concerns that were identified by Blythe Energy during the project development process were: biological resources, cultural resources, and visual resources. For all other resource areas, the potential effects were considered less than significant without mitigation measures and, therefore, were not important factors in the alternatives screening process.

Blythe Energy also considered interconnection with the proposed DSWTP and with the DPV2 Project. Both of these alternatives were eliminated from consideration by the Applicant because they did not meet the basic project objectives; however, they are retained for full analysis in this PSA because they meet most of the project objectives and have the potential to reduce impacts of the proposed project.

The Applicant also considered a transmission line to Mead Substation (southern Nevada), but this alternative was eliminated from consideration due to infeasibility, because the cost and time to permit and construct a 200-mile interstate linear facility was deemed to be prohibitive. The Applicant also considered generation alternatives (hydroelectric, energy storage, photovoltaic, wind, and conservation), but these options were eliminated from consideration because they did not meet the objectives of the proposed project.

Two route alignments and two sub-alignments are presented in the Petition as possible alternatives for the Buck Boulevard to Julian Hinds transmission line component, as follows:

- Alignment adjacent to Interstate 10;
- Alignment adjacent to existing SCE 161 kV Eagle Mountain Transmission Line;
- Proposed route sub-alignment number 1 near Alligator Rock; and,
- Proposed route sub-alignment number 2 accessing the Julian Hinds substation from the east.

From these options, only the alignment adjacent to the existing Eagle Mountain transmission line was retained for full analysis in this PSA as the Eagle Mountain Alternative (see Appendix A, Alternatives Evaluated in Detail). A discussion of the Interstate 10 Alternative is found in Appendix B, Alternatives Eliminated from Full Consideration. Sub-alignments would only be pursued if potentially significant impacts were identified in other PSA sections (e.g., impacts to cultural or biological resources) along the proposed route segment.

Finally, two alternative substation locations were considered by the Applicant for locating the substation for the Buck Boulevard to D-PV transmission line component:

- Mesa Verde Alternative Substation location
- Wiley Well Alternative Substation location.

In addition to the different substation locations, both of these alternatives could be used with a different transmission alignment (Mesa Verde Sub-Alignment) and access road. The location for the Wiley Well Substation Alternative was retained for full analysis in Appendix A of this PSA. The Mesa Verde Substation Alternative and the Mesa Verde Sub-Alignment were both eliminated from full consideration because they would likely have greater impacts than the project as proposed; this rationale is more fully discussed in Appendix B.

Alternatives Identified by the City of Blythe

In the November scoping hearing, a comment was received from Butch Hull of the City of Blythe expressing concern regarding the proposed transmission line route and its proximity to the Blythe Airport near BEP and Hobsonway. Staff is evaluating this minor route modification in the technical sections in this PSA.

Alternatives Identified by Staff

Based on the screening criteria defined above, the following six additional alternatives were identified by staff:

- Buck to Julian Hinds with Reconductoring Alternative
- Larger Capacity Line Alternative
- DPV1/DPV2 Alternative
- Eliminate Midpoint Substation Alternative

- Direct Current Transmission Alternative
- Underground Construction Alternative

The Buck to Julian Hinds with Reconductoring Alternative and the Larger Capacity Line Alternative were both selected for further evaluation in this PSA (see Appendix A). The other four alternatives are discussed in Appendix B, Alternatives Eliminated from Full Consideration.

ALTERNATIVES EVALUATED IN DETAIL

After study of the alternatives suggested by the sources described above, the following six alternatives have been retained for detailed analysis. Detailed descriptions of each alternative and environmental and engineering analysis are presented in Appendix A of this PSA:

- **Eagle** Mountain **Alternative**. Construction of a new 71-mile transmission line parallel and adjacent to the SCE Blythe-Eagle Mountain 161 kV line and the Eagle Mountain-Julian Hinds 230 kV for its entire length. An alternative variation is also considered, which would include replacement and upgrades to the existing lines.
- Desert **Southwest Transmission Project (DSWTP) Alternative.** Construction of a new 118-mile 230 kV or 500 kV line between SCE's Devers Substation and Buck Boulevard Substation or a new Hobsonway Substation in the vicinity of Buck Boulevard, as proposed in a EIS/EIR published by Imperial Irrigation District and BLM in March 2003. An alternative variation was also considered, which would be similar to DSWTP, but would be built by Blythe Energy and would terminate at either Devers or Mirage Substations.
- Devers**-Palo Verde 500 kV No. 2 (DPV2) Project Alternative**. Construction of a new 500 kV line from Harquahala (AZ) to Devers Substation (CA) paralleling SCE's existing DPV1 ROW, as proposed by SCE. The Buck Boulevard Substation to Midpoint Substation transmission line component of the proposed BEPTL project would still need to be constructed.
- Buck **to Julian Hinds with Reconductoring Alternative**. Construction of a new line between Buck Boulevard Substation and Julian Hinds Substation (as proposed). Reconductor between Julian Hinds Substation and Mirage or Devers Substations. The Buck Boulevard Substation to Midpoint Substation transmission line and substation construction components of the proposed project would be eliminated.
- Install **Larger Capacity Line Alternative**. Construction of the proposed project, but for double-circuit 230 kV transmission towers and lines (Option A) instead of single-circuit; or construction of the proposed project to accommodate 500 kV, but initially energized at 230 kV (Option B).
- **Wiley Well Substation Alternative.** This alternative substation location would be to the east of Wiley Well Road north of the existing DPV1 and proposed DPV2 corridors along the Proposed Project corridor. This substation alternative could be used with either the proposed transmission line route or with the Mesa Verde Sub-Alignment.

Please see **ALTERNATIVES Figure 1** for a map of the alternatives retained for full analysis.

SUMMARY COMPARISON OF ALTERNATIVES

ALTERNATIVES Table 2 presents a summary of the comparative impacts of the five transmission line alternatives and the substation alternative that were retained for full analysis with the proposed project. This table states how the impacts of each alternative in each issue area compare to those of the proposed project.

ALTERNATIVES Table 2
Comparison of Impacts of Alternatives to the Proposed Blythe Transmission Project

	Transmission Line Alternatives: Compared with Buck Boulevard to Julian Hinds Route					Substation Alternative: Compared to Midpoint
Issue Area	**Eagle Mountain Alternative**	**DSWTP Alternative**	**DPV2 Alternative**	**Buck to Julian Hinds with Reconductoring Alternative**	**Install Larger Capacity Line**	**Wiley Well Substation Alternative**
Environmental Assessment						
Air Quality	Similar impacts	Greater impacts	Greater impacts	Less impacts	Similar impacts	Slightly greater impacts
Biological Resources	Less impacts	Greater impacts	Greater impacts	Less impacts	Similar impacts	Greater impacts
Cultural Resources	Inadequate data	Greater impacts	Greater impacts	Inadequate data	Similar impacts	Inadequate data
Hazardous Materials	Similar	Greater impacts	Greater impacts	Less impacts	Similar impacts	Similar impacts
Land Use	Greater impacts	Greater impacts	Greater impacts	Similar impacts	Less impacts	Slightly greater impacts
Noise and Vibration	Similar impacts	Greater impacts	Greater impacts	Similar impacts	Similar impacts	Similar impacts
Public Health	Similar impacts	Slightly greater impacts	Greater impacts	Similar impacts	Similar impacts	Similar impacts
Socioeconomics	Similar impacts	Similar impacts	Greater impacts	Similar impacts	Similar impacts	Similar impacts
Soil and Water	Slightly greater impacts	Greater impacts	*Greater impacts*	Greater impacts	Similar impacts	Similar impacts

	Transmission Line Alternatives: Compared with Buck Boulevard to Julian Hinds Route					Substation Alternative: Compared to Midpoint
Issue Area	**Eagle Mountain Alternative**	**DSWTP Alternative**	**DPV2 Alternative**	**Buck to Julian Hinds with Reconductoring Alternative**	**Install Larger Capacity Line**	**Wiley Well Substation Alternative**
Traffic and Transportation	Similar impacts	Greater impacts	*Greater impacts*	Greater impacts	Similar impacts	Similar impacts
Transmission Line Safety and Nuisance	Similar impacts	Greater impacts	Greater impacts	Greater impacts	Greater impacts	Slightly greater impacts
Visual Resources	Greater impacts	Greater impacts	Greater impacts	Slightly less impacts	Less impacts	Greater impacts
Waste Management	Similar impacts	Similar impacts	Similar impacts	Less impacts	Similar impacts	Similar impacts
Worker Safety and Fire Protection	Similar impacts	Similar impacts	Similar impacts	Similar impacts	Similar impacts	Similar impacts
Engineering Assessment						
Geology, Mineral Resources, and Paleontology	Similar impacts	Greater impacts	Greater impacts	Slightly less impacts	Similar impacts	Similar impacts
Transmission System Engineering	Similar impacts	Less impacts	Slightly less	Less impacts	Less impacts	Similar impacts

CONCLUSIONS

The areas with most potential for significant impacts are biological resources, cultural resources, and land use. In addition, assessment of the transmission system and cumulative impacts is important. For all areas considered in this PSA, staff is recommending measures that would mitigate impacts to a less than significant level or is waiting for clarification of unresolved issues. Following is a summary of the advantages and disadvantages of the six alternatives and the No Project Alternative compared to the proposed project based on **ALTERNATIVES Table 2.**

Of the six alternatives evaluated, the DPV2 Alternative, because of its greater length, has the potential for greatest impacts and would likely have greater impacts in comparison with the proposed BEPTL in all of the issue areas except waste management, and worker safety and fire protection, where impacts would be similar. Conclusions for cultural resources and transmission system engineering (TSE) have not been determined due to inadequate information available. However preliminary TSE results indicate that the DPV2 Alternative would be slightly preferred. The greater impacts of the DPV2 Alternative are due primarily to its much longer route and construction duration, as well as the construction of a 500 kV line and larger lattice towers. For similar reasons, the DSWTP Alternative, which would extend 51 additional miles west of Julian Hinds to connect to the Devers Substation, would also have greater impacts than the proposed BEPTL. The DSWTP, however, would be strongly preferred with regard to TSE based on the preliminary SIS results and its compatibility with the purpose of the designated Utility Planning Corridor.

Both the DPV2 Alternative and the DSWTP Alternative (if built at 500 kV) offer the potential for reduction of cumulative impacts because a single 500 kV transmission line would likely serve all of the currently identified transmission needs. The construction of either of these alternatives may prevent the short-term need for additional transmission lines to be constructed within this corridor, thereby reducing impacts to biological, cultural, and visual resources and be more compatible with the purpose of the Corridor.

The impacts of the Wiley Well Substation Alternative would largely be similar to those of the proposed Midpoint Substation, but Wiley Well Substation would be slightly less preferred for land use, and transmission line safety and nuisance, and less preferred for biological resources and visual resources mostly because its location would be less isolated.

The Buck to Julian Hinds with Reconductoring Alternative would likely have the least environmental impacts, when compared to the other alternatives or to the proposed project. The impacts from reconductoring an additional 42 miles of line between Julian Hinds to Mirage/Devers Substations would be offset by the elimination of construction of the new proposed Midpoint Substation and 6.7 miles of double-circuit transmission line (a new single-circuit line and 6.7 miles of towers would still be required). Impacts to air quality, biological resources, hazardous materials, waste management, visual resources, TSE, and geologic resources would all be reduced with the Buck to Julian

Hinds with Reconductoring Alternative, but construction of this alternative would result in greater impacts to traffic and transportation, soil and water, and transmission line safety and nuisance.

The Larger Capacity Line Alternative would have fewer impacts than the proposed project overall and specifically in visual resources and TSE. It would be less preferred in Transmission Line Safety and Nuisance due to its potential higher voltage (500 kV). Overall this alternative would potentially reduce cumulative impacts from other reasonably foreseeable projects (e.g., DSWTP and DPV2) and would be consistent with BLM's stated need to minimize the duplication or proliferation of similar facilities.

The No Project Alternative, in which the DSWTP might be constructed in the absence of the BEPTL project (described in Appendix A), may reduce cumulative impacts from the construction of multiple transmission projects in the same corridor. It is also noted that the DSWTP could not only accommodate both BEP and BEP II, but it also could form half of the proposed DPV2 Project, thus meeting the basic needs of BEP, BEP II and the need for a second major intertie to Arizona. However, overall, the No Project Alternative, in the form of the DSWTP Alternative, would result in greater environmental impacts than the proposed project due to its substantially greater length. Because the DSWTP may be constructed on a slower schedule than that proposed by Blythe Energy, the No Project scenario could ; delay the interconnection of BEP with the CAISO system and slow its ability to transmit increased energy generated at the Blythe Power Plant directly into California markets, which are objectives of the proposed BEPTL.

APPENDIX A: ALTERNATIVES EVALUATED IN DETAIL

This appendix presents the detailed analysis of alternatives to the Blythe Energy Project Transmission Line Modification (BEPTL), to the extent that detailed information is available on the selected alternatives. These alternatives were selected based on CEQA Guidelines and NEPA requirements, using the process described in the body of the Alternatives section.

Six alternatives are evaluated in this section, including five transmission line alternatives and one substation location alternative. In addition, the No Project Alternative (called No Action under NEPA) is evaluated as required by CEQA/NEPA. The alternatives and the page numbers on which they are addressed are:

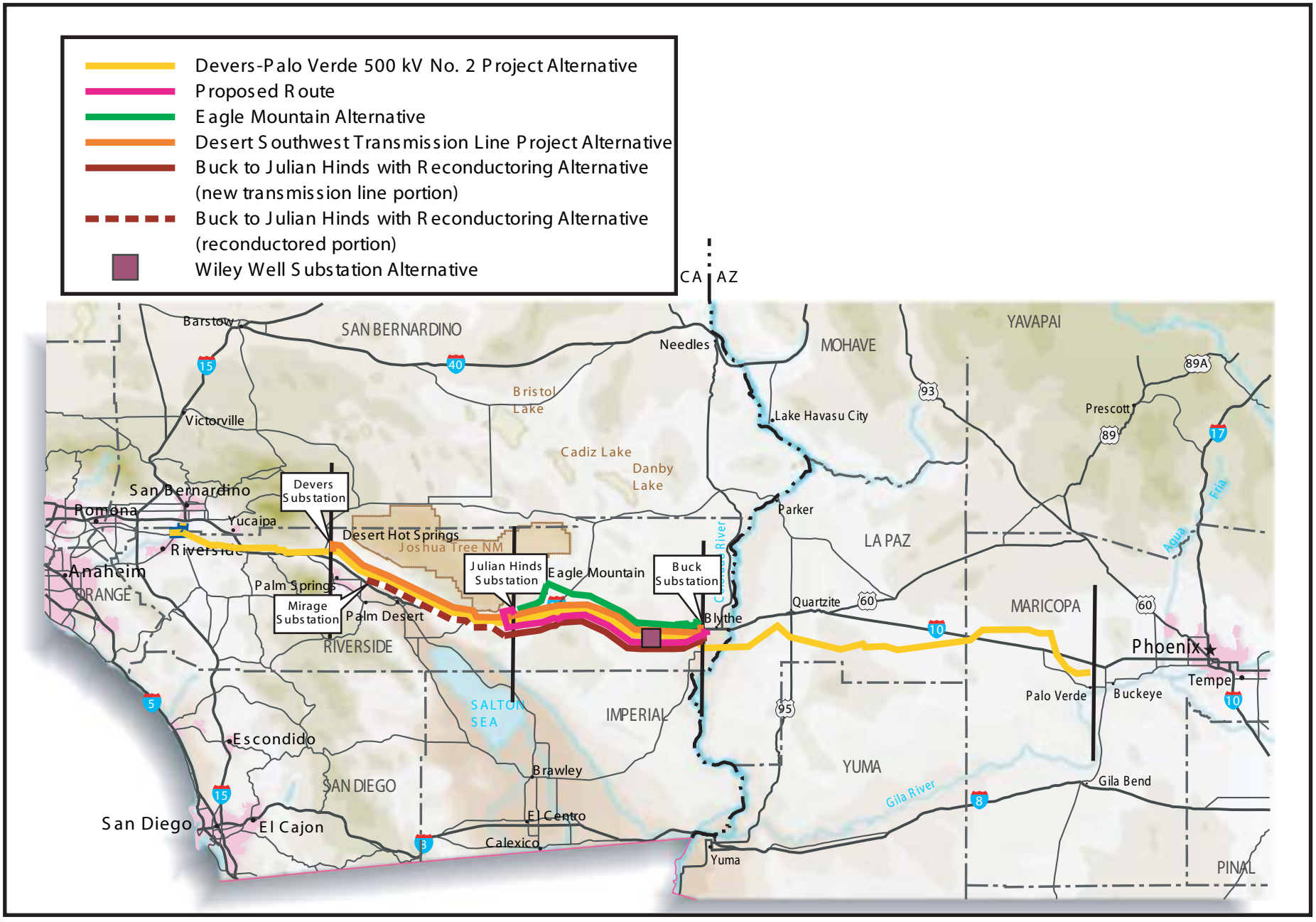
- Eagle Mountain Alternative (page Appendix A, 6-10)
- Desert Southwest Transmission Line Alternative (page Appendix A, 6-24)
- Devers-Palo Verde 500 kV No. 2 Alternative (page Appendix A, 6-41)
- Buck to Julian Hinds with Reconductoring Alternative (page Appendix A, 6-69)
- Larger Capacity Line Alternative (page Appendix A, 6-80)
- Wiley Well Substation Alternative (page Appendix A, 6-86)
- No Project Alternative (page Appendix, 6-92).

Each alternative is described below, followed by analysis of the environmental impacts and engineering constraints of that alternative. **ALTERNATIVES Figure 1** shows the location of all of the alternatives that are evaluated. **ALTERNATIVES Figure 2** shows the alternative in the area between Palo Verde (Arizona) and Blythe, and **ALTERNATIVES Figure 3** shows the alternatives between Blythe and Julian Hinds Substation, and **ALTERNATIVES Figure 4** shows the area between Julian Hinds and Devers Substations. **ALTERNATIVES Figures 5, 6, and 7** illustrate the upgrade portions of the Devers-Palo Verde 500 kV No. 2 Alternative, and **ALTERNATIVES Figure 8** illustrates the location of the Wiley Well Substation Alternative.

The majority of the alternatives analysis and discussion is based on information found in the Applicant's Petition for Post-Certification Amendment (99-AFC-8, BLYTHE 2004a), the Desert Southwest Transmission Project Draft EIS/EIR prepared by the BLM and Imperial Irrigation District (IID) (IID & BLM 2003), which covers a similar geographic area, information provided by Blythe Energy in response to data requests, and through site reconnaissance. As a result, the level of detail for analysis of specific alternatives varies.

ALTERNATIVES - FIGURE 1

Blythe Energy Transmission Line Project - Alternatives Map

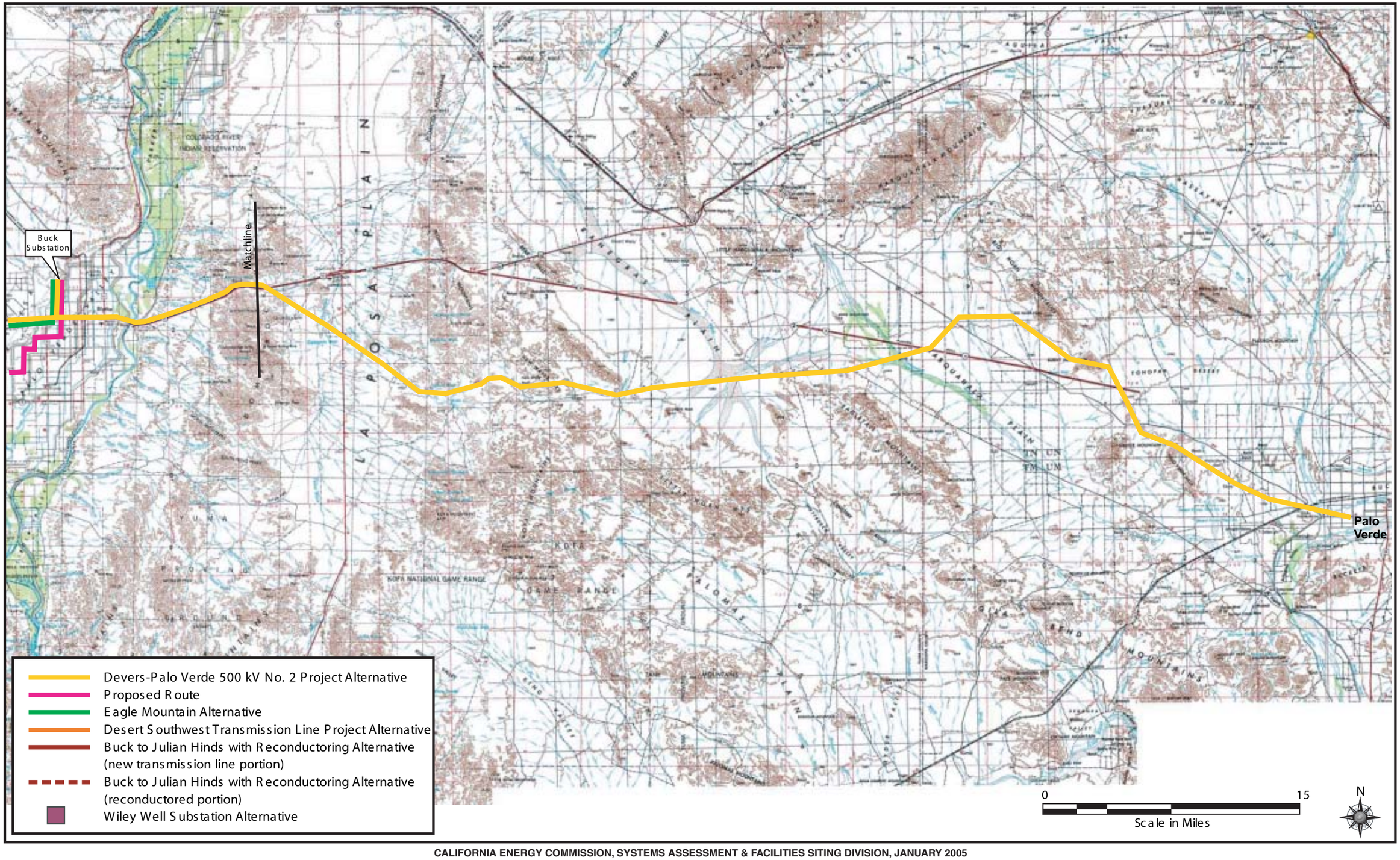


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Aspen Environmental

ALTERNATIVES - FIGURE 2

Blythe Energy Transmission Line Project - Palo Verde to Blythe/Buck Substation



ALTERNATIVES

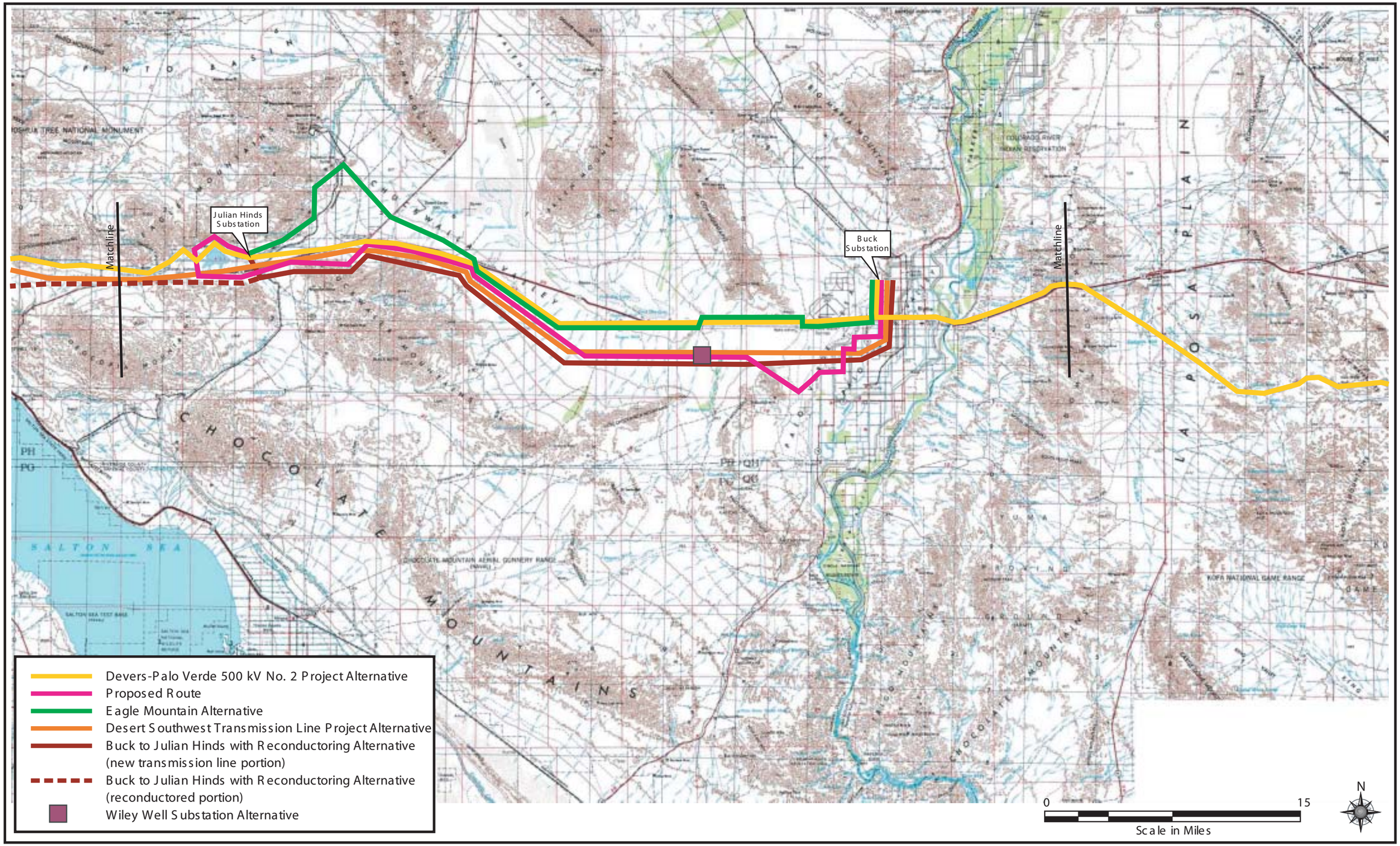
JANUARY 2005

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Aspen Environmental

ALTERNATIVES - FIGURE 3

Blythe Energy Transmission Line Project - Blythe/Buck Substation to Julian Hinds Substation



ALTERNATIVES

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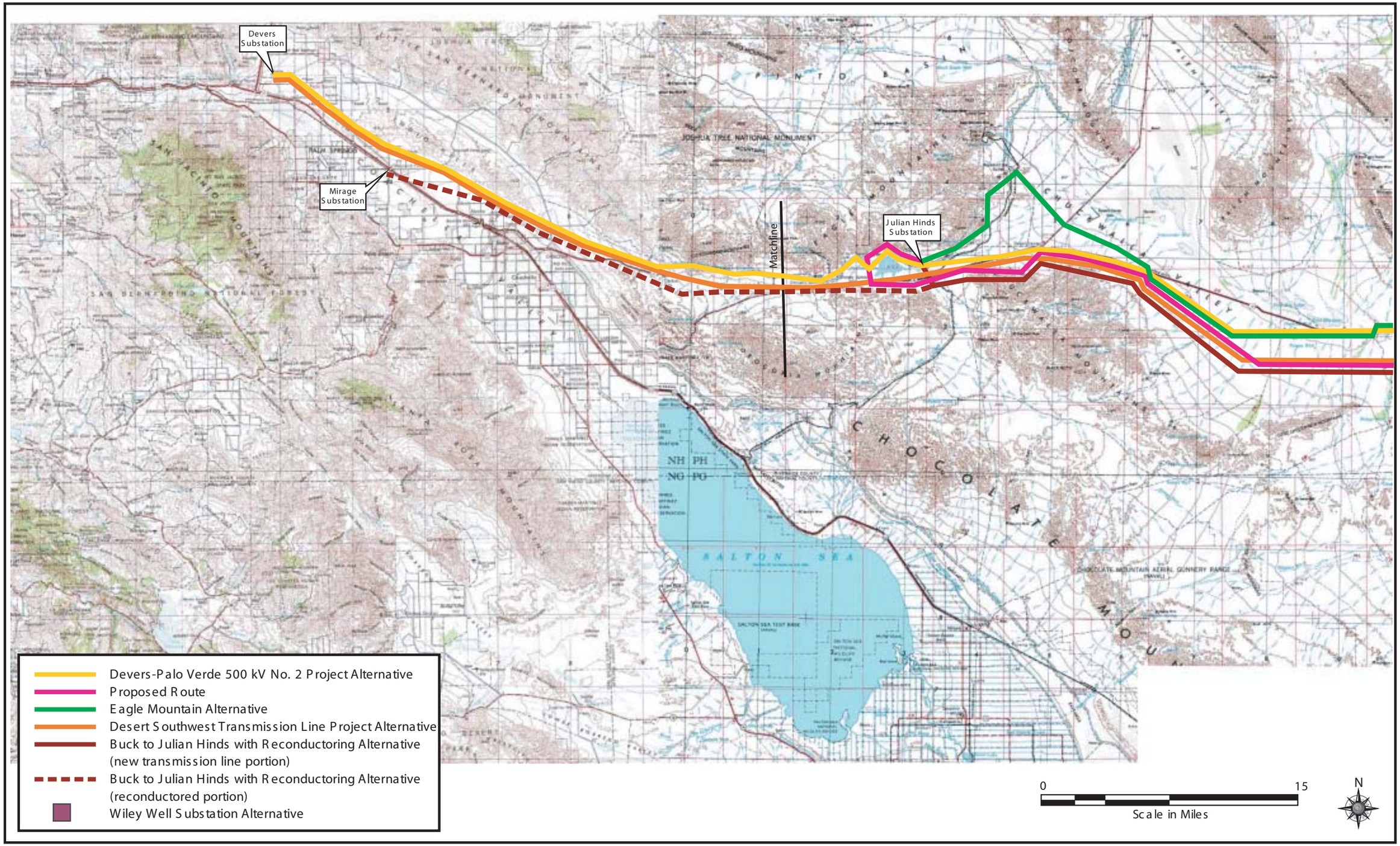
SOURCE: Aspen Environmental

ALTERNATIVES - FIGURE 4

Blythe Energy Transmission Line Project - Julian Hinds Substation to Devers Substation



ALTERNATIVES

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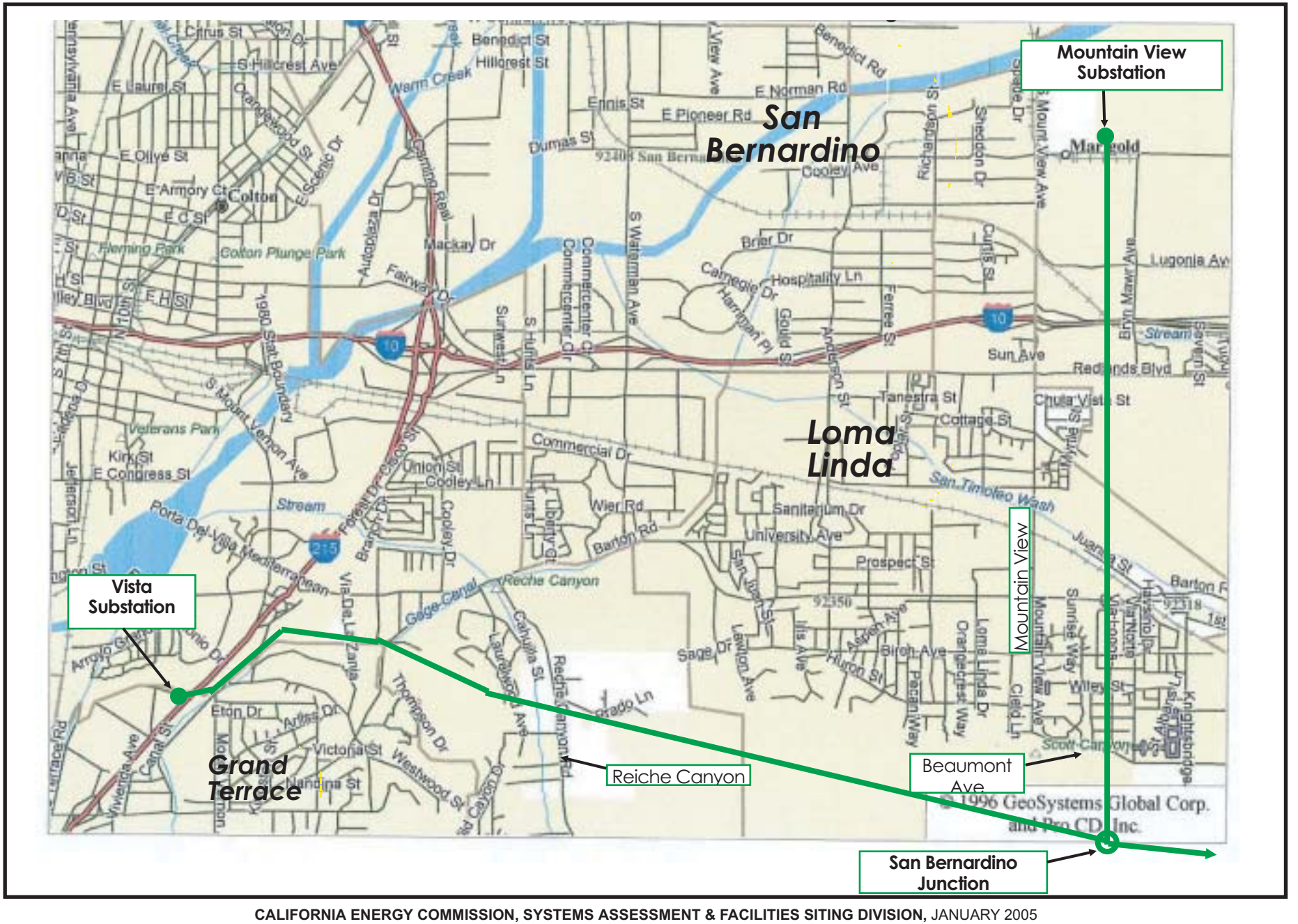
SOURCE: Aspen Environmental

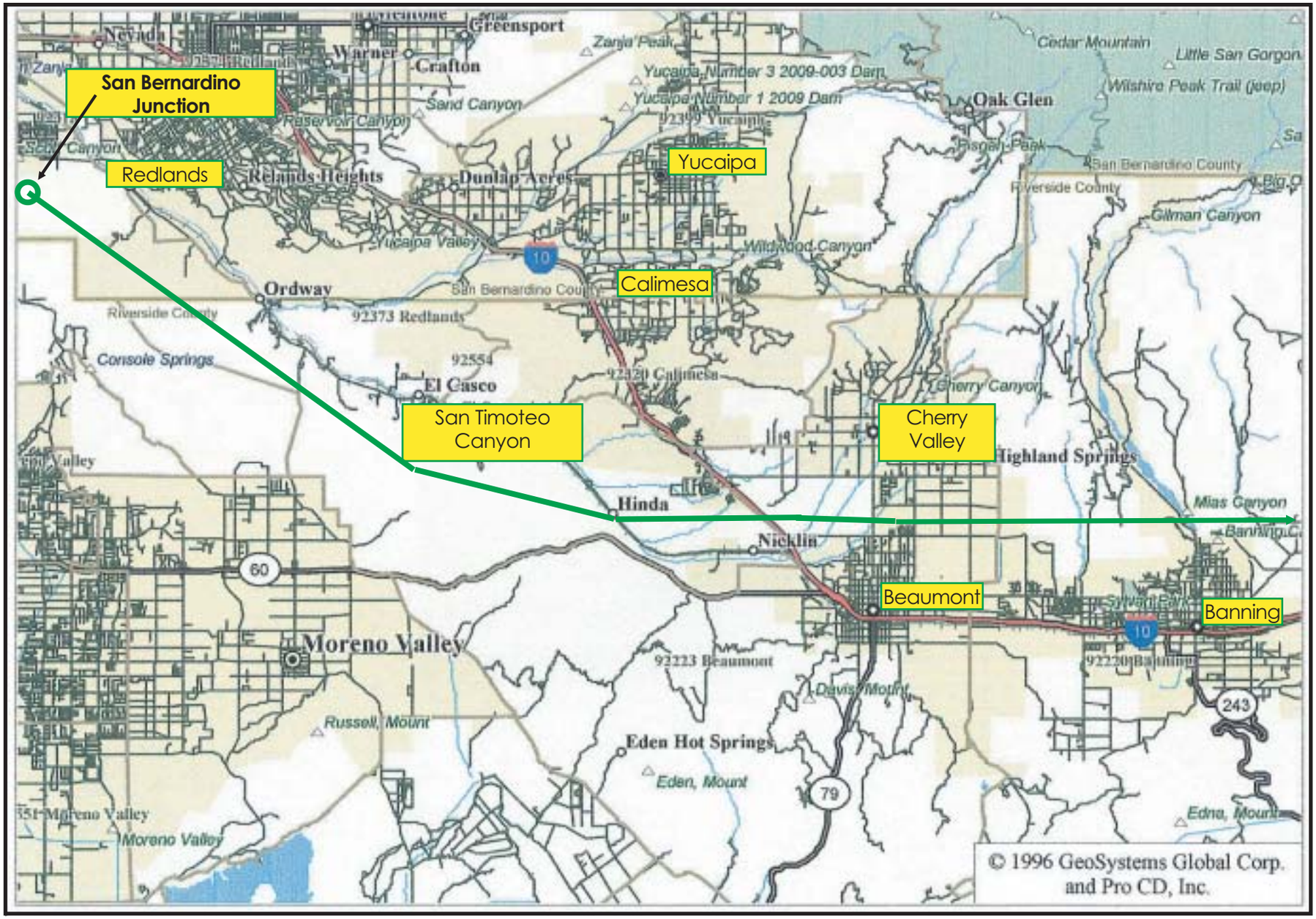
ALTERNATIVES - FIGURE 5

Blythe Energy Transmission Line Project - Devers-Palo Verde No. 2 from San Bernardino Junction to Mountain View and Vista Substations - All 230 kV Reconductoring


Mountain View Substation
San Bernardino
Loma Linda
Vista Substation
Grand Terrace
Mountain View
Reiche Canyon
Beaumont Ave
San Bernardino Junction
Colton
Marigold
Redlands Blvd
Sun Ave
Mountain View Ave
Barton Rd
University Ave
Prospect St
Commercial Dr
Cooley Ln
Mackay Dr
Fairway Dr
Dumas St
Ennis St
E Pioneer Rd
E Norman Rd
Benedict Rd
Hillcrest St
S Hillcrest Ave
Warm Creek
Stream
San Timoteo Wash
Gage Canal
Reche Canyon
Eton Dr
Victoria St
Nandina St
Westwood St
Thompson Dr
Vista Del La Tierra
Viverida Ave
Canal St
Porta Del Villa Mediterranean
Veterans Park
Kirk St
E Congress St
Colton Plunge Park
Fleming Park
E Olive St
E Armory Ct
E C St
E H St
Citrus St
E Laurel St
Tanestra St
Cottage St
Chula Vista St
Lugonia Av
Brier Dr
Hospitality Ln
Carnegie Dr
Harriman Pl
Sanitarium Dr
Wier Rd
Sage Dr
Birch Ave
Huron St
Aspen Ave
Iris Ave
Lawton Ave
Pecan Way
Orangecrest Way
Loma Linda Dr
Claid Ln
Juanita St
Sunrise Way
Wiley St
Scott Canyon
Knightsridge
Bryn Mawr Ave
Seven St
Richardson St
Sheldon Dr
Curtis St
Ferree St
Gould St
Anderson St
Sunwest Ln
S Hunts Ln
Commercenter Cir
S Waterman Ave
View Ave
Autoplaza Dr
Camino Real
Branch Dr
Forest Dr
Cooley Dr
Union St
Liberty St
Cahuilla St
Laurelwood Ave
Reche Canyon Rd
Arrow Gate
Arlington Dr
Arlington Ave
Mountain View Ave
Sunset Ave
Vista Del La Tierra
Vista Del Monte
Hayenhurst Ave
Knightsridge
Stream
Sycamore St
Sycamore Ln
Jefferson Ln
Terrace Rd
Canal St
Viverida Ave
Mountain View Ave
Mount Vernon Ave
S Mount Vernon Ave
Stat Boundary
1980
Colton Ave
Cypress St
Pepper St
Palm St
Olive St
Laurel St
Citrus St

ALTERNATIVES - FIGURE 6

Blythe Energy Transmission Line Project - Devers-Palo Verde No. 2 - 230 kV Upgrade (New Towers) - West

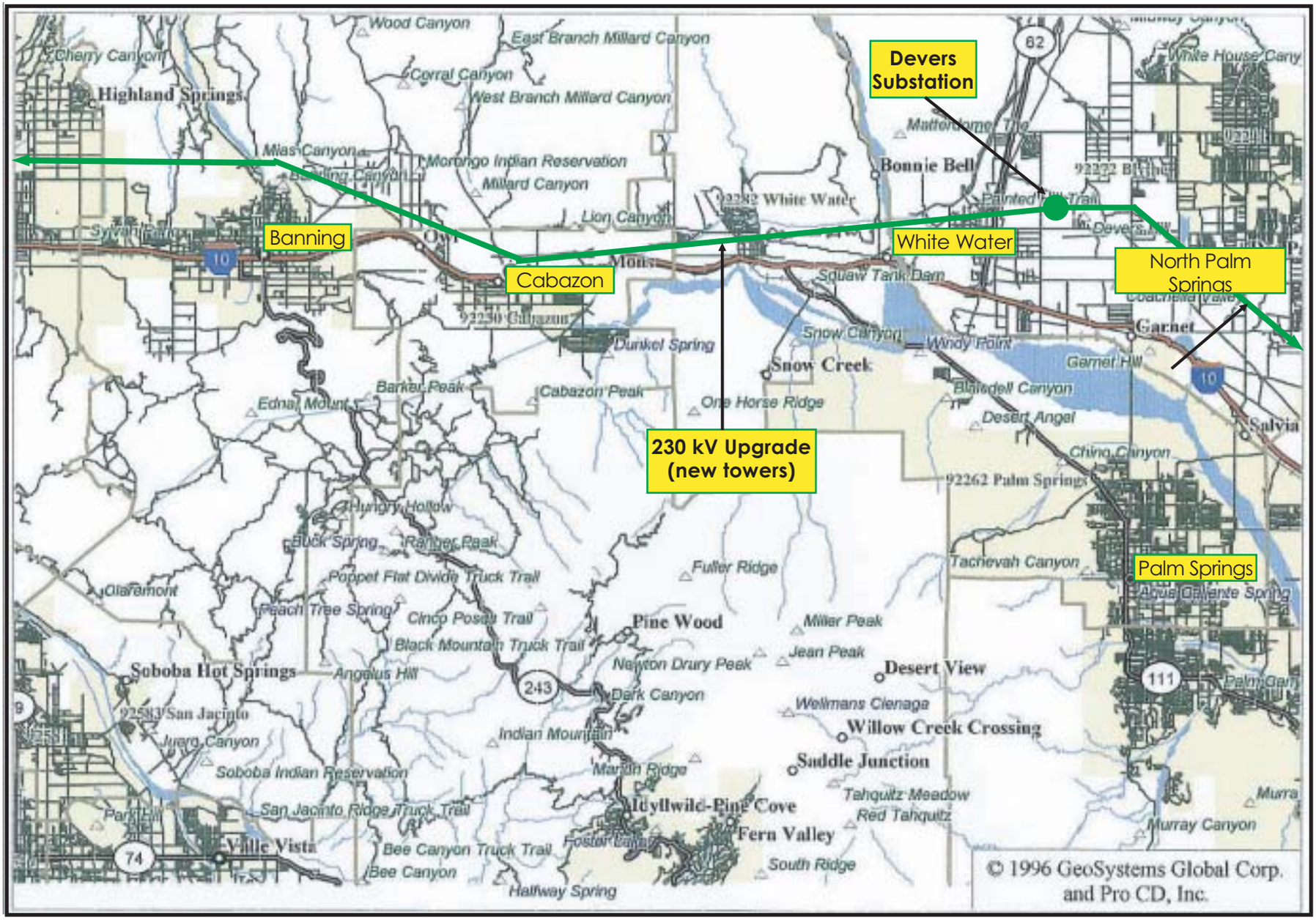


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Aspen Environmental

ALTERNATIVES - FIGURE 7

Blythe Energy Transmission Line Project - Devers-Palo Verde No. 2 - 230 kV Upgrade - East

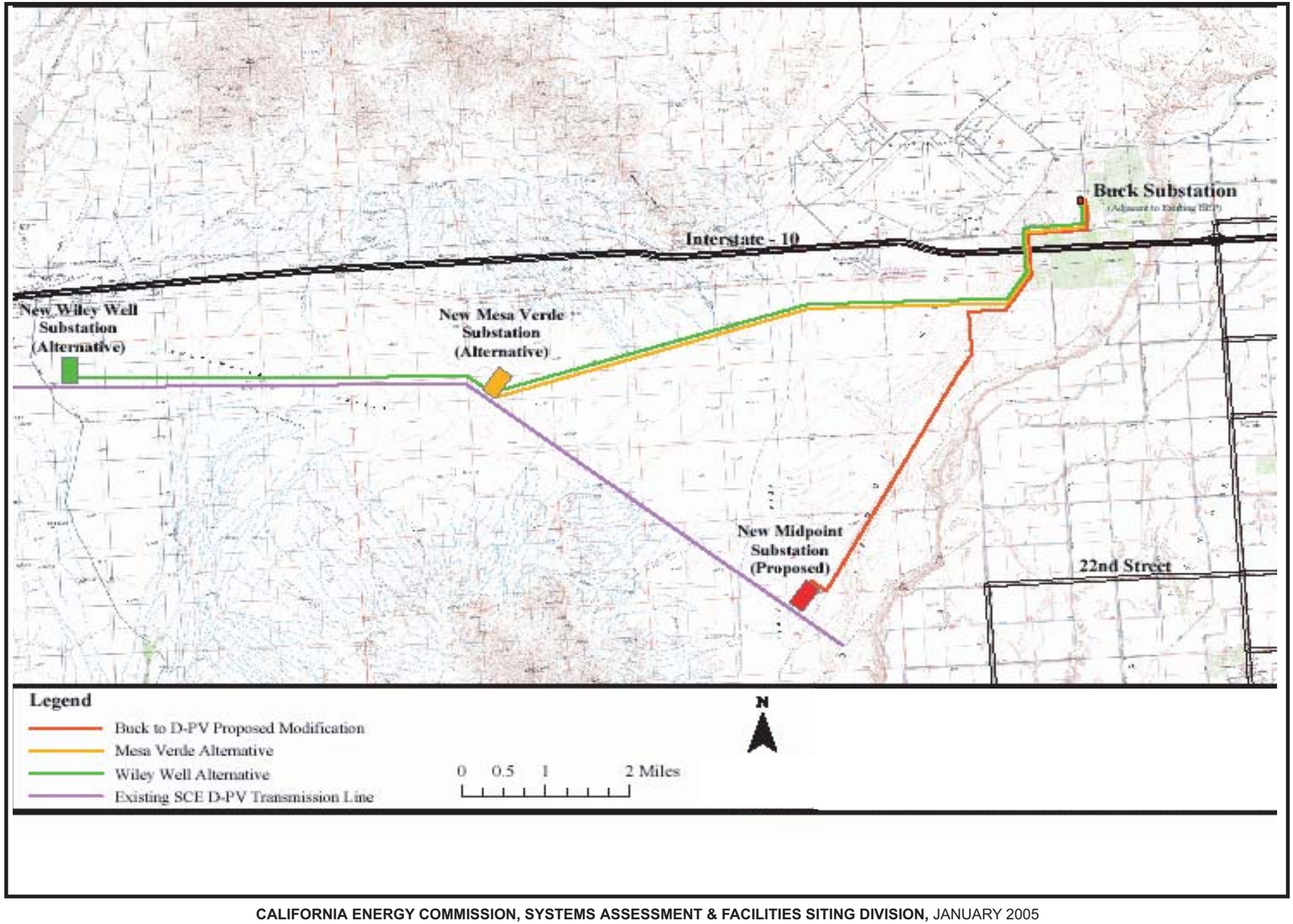


CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Aspen Environmental

ALTERNATIVES - FIGURE 8

Blythe Energy Transmission Line Project - Wiley Well Substation Alternative



CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, JANUARY 2005

SOURCE: Aspen Environmental

EAGLE MOUNTAIN ALTERNATIVE

ALTERNATIVE DESCRIPTION

The 71-mile Eagle Mountain Alternative would be parallel and adjacent to the Southern California Edison (SCE) Blythe-Eagle Mountain 161 kV transmission line for the 54 miles between the Blythe and Eagle Mountain Substations, and then would follow the Metropolitan Water District (MWD) Eagle Mountain-Julian Hinds 230 kV transmission line for its entire length (17 miles between those two substations). The alternative route is shown in **ALTERNATIVES Figure 2**.

The Eagle Mountain Alternative would leave Buck Boulevard Substation following the proposed transmission line route, crossing Hobsonway and Interstate 10 (I-10) to the south and traveling along the western edge of existing orchards. There is one residence located approximately 0.25-mile west of the transmission line right-of-way (ROW) approximately 0.5-mile west of the existing Blythe Energy Project (BEP) power plant site.

At the northern boundary of the southernmost orchard property where the proposed route would turn to the west and then to the south, the Eagle Mountain Alternative would continue west, parallel to I-10. It would continue in this westerly direction for four miles until it would cross to the northern side of I-10. The route would continue to parallel I-10 on its northern side for approximately 11 miles to a point just east of the Ford Dry Lake exit where it would cross to the southern side of I-10 by continuing due west while I-10 turns slightly to the northwest. By following this route, the Eagle Mountain Alternative would avoid the Chuckwalla Valley Dune Thicket Area of Critical Environmental Concern (ACEC), which is a 2,273-acre area managed for wildlife habitat south of I-10 that the proposed project would pass through for 1.2 miles.

Once south of I-10, over the course of 7.5 miles the Eagle Mountain Alternative would slowly converge with the proposed project/DPV corridor, roughly paralleling Chuckwalla Road to that point. As Chuckwalla Road turns to the northwest, the Blythe-Eagle Mountain and proposed project/DPV corridors would run adjacent to each other and Chuckwalla Road for approximately 7.5 miles to the intersection with Corn Springs Road.

At that point the two corridors would diverge and the Eagle Mountain Alternative would cross to the north side of I-10 in a northwestern direction, diverging from I-10 and to the north of Desert Center for approximately 20 miles toward Eagle Mountain Substation. The route would cross Highway 177 (Desert Center-Rice Highway) and R2 (Kaiser Road) to the north of Victory Pass (elevation 1,253) on Eagle Mountain Road and into the Eagle Mountain Substation, which is adjacent to the MWD Eagle Mountain Pumping Plant and near the southeastern boundary of Joshua Tree National Park.

Exiting south out of Eagle Mountain Substation, the Eagle-Mountain Alternative route would slowly curve to the west following the southern boundary of Joshua Tree National

Park and the southern edge of the Eagle Mountains for approximately 17 miles into MWD's Julian Hinds Substation adjacent to Julian Hinds Pumping Station off of Hayfield Road.

The community of Hayfield, located adjacent to the Julian Hinds Substation, has approximately eight homes and various recreational structures. The community was established for the employees and their families who are employed to maintain the water pumping station that provides water to the Los Angeles basin. An existing transmission line is approximately 1,000 feet north of the existing community, and the Eagle-Mountain Alternative transmission line would be placed within a 100-foot wide dedicated ROW adjacent to the existing transmission corridor, closer to the residences.

Rationale for Consideration

The Eagle Mountain Alternative is being considered for the following reasons:

- It would cross approximately 31.7 miles of desert tortoise habitat compared to 52 miles for the proposed route.
- It would avoid the Alligator Rock ACEC (cultural resources) and visual impacts associated with that protected area.
- It would use an existing transmission corridor
- It would avoid use of the major existing east-west DPV corridor for a relatively low-capacity (230 kV single-circuit) transmission line, retaining space in that corridor for a line that would carry more electricity.

Eagle Mountain Alternative Variation

A variation to the Eagle Mountain Alternative would be to replace or upgrade the existing 161 kV line from the Blythe Substation to the Eagle Mountain Substation and from Eagle Mountain to Julian Hinds with a 230 kV line along the same alternative route described above, a distance of 71 miles, rather than adding a new line adjacent to the existing line. BLM's land use plan does not address upgrades of existing lines located outside of corridors. Therefore, a plan amendment may still be required. However established planning/siting principles suggest that upgrades to existing transmission lines should be considered where feasible. While not in a designated corridor, this modification would meet BLM's objectives of minimizing impacts by consolidating transmission lines within an existing corridor, and also meet general planning/siting principles. Due to tower and line consolidation, this variation would lessen permanent visual resources impacts over the proposed project and the Eagle Mountain Alternative.

ENVIRONMENTAL AND ENGINEERING ASSESSMENT OF THE EAGLE MOUNTAIN ALTERNATIVE

Air Quality

Construction emissions associated with the project would be created by on-site and off-site mobile sources. On-site construction emissions typically consist of exhaust emissions from heavy-duty diesel- and gasoline-powered construction equipment, as well as fugitive

particulate matter from soil disturbed during ground disturbing operations (e.g., grading, excavating, etc.).

Off-site exhaust emissions during construction would result from workers commuting to and from the job site, as well as from trucks delivering material and equipment to the staging area(s).

Each local air quality district in California establishes its own significance criteria for environmental review of projects based on the specific conditions within each air basin. Similar to the proposed transmission line, emissions from the Eagle Mountain Alternative would need to be controlled to satisfy the air permitting requirements of the Mojave Desert Air Quality Management District (MDAQMD) and the South Coast Air Quality Management District (SCAQMD).

Air pollution emissions from the Eagle Mountain Alternative would be short-term and would occur during construction only. Construction related emissions that would reduce local ambient air quality would consist of CO, NO_x, SO_2, and PM10 and would be attributed to exhaust from construction equipment; fugitive dust from grading, earth moving, and equipment traveling on paved and unpaved roads; and construction crew vehicle traffic.

Implementation of standard construction mitigation measures to reduce exhaust emissions, such as properly tuning and maintaining heavy duty off road diesel equipment and the utilization of water and chemical dust suppression would reduce these impacts to less than significant levels. Construction and operation of the Eagle Mountain Alternative would be subject to permit requirements and it would require Energy Commission mitigation, similar to that of the proposed project, to avoid significant air quality impacts. Mitigated construction emissions would be similar to those of the proposed project.

The Eagle Mountain Alternative Variation would have greater impacts than the alternative itself, due the additional construction required to remove existing towers after the new line were constructed. However, like the proposed project and the alternative itself, impacts would be less than significant after implementation of required mitigation.

Biological Resources

Both the Eagle Mountain Alternative and the proposed project would be constructed adjacent to existing transmission lines and in largely similar desert habitat. The habitat is described in the Biological Resources section of this PSA.

In order to accurately assess impacts from construction of the Eagle Mountain Alternative, protocol surveys for sensitive species would need to be completed and appropriate consultation completed with the USFWS and CDFG.

According to Blythe Energy (BLYTHE, 2004a), the Eagle Mountain Alternative would cross approximately 31.7 miles of USFWS critical habitat for the desert tortoise, compared to 52 miles for the proposed Buck Boulevard to Julian Hinds route, even though the alternative is four miles longer than the proposed route. Therefore, the Eagle

Mountain Alternative would likely have less impact to desert tortoise habitat than the proposed route. No data is available on other potential biological impacts to sensitive plant and wildlife species.

The alternative variation would require construction in a wider ROW due to the requirement that the existing towers be removed after the new line was installed. Therefore, this variation would have greater impacts to desert tortoise habitat than the Eagle Mountain Alternative itself. However, despite its wider ROW requirements and disturbance, the alternative variation would be located in less valuable desert tortoise habitat than the proposed project, which would also have greater impacts than the Eagle Mountain Alternative. Thus, the impacts of the alternative variation may be similar to those of the proposed project; however, without access to recent data on other plant and animal species, further conclusions are not possible.

Cultural Resources

This alignment would avoid the Alligator Rock ACEC that would be crossed by the proposed route. However, this alternative would pass through three areas that are considered to have high sensitivity for cultural resources (see Map VI-1 in Volume 2 Appendix D-1 from BLYTHE, 2004a). These three sensitive areas are near southern portion of McCoy Mountain, south of Ford Dry Lake, and east of Julian-Hinds Substation.

In order to fully assess potential impacts to cultural resources, a records search and information obtained by cultural resources survey of this route would supply the necessary information, but this could not be completed for this analysis. In addition, should this route be selected Native American consultation would need to be conducted to identify all the cultural resources including Traditional Cultural Properties (TCPs). Cultural resources work completed for the project suggested alternative Blythe-Eagle Mountain 230 kV, examined a four hundred foot corridor. Forty-one cultural resources were identified within that corridor, consisting of three trail segments, two temporary encampments and one rock ring feature, two ceramic scatters, four lithic scatters and two cobble quarry workshops, one rock art site and one rock art district, ten historic foundations or features, two historic mining prospects, 12 historic trash deposits, and one prehistoric isolated find (BLYTHE, 2004a). In theory, upgrading or replacing an existing line would probably cause less impact to cultural resources than installation of a new line. (Blythe 2004a, Appendix D). However, since the area assessed for cultural resources was not the same as the proposed alternative route, it is not possible to fully assess impacts to cultural resources from this alternative and compare them to those of the proposed project.

Hazardous Materials

Potential sources of existing hazardous materials within the ROW would be (1) pesticide use from nearby agricultural activities, or (2) historical or illegal disposal of hazardous materials within the project area. However, existing and previous land uses within the area of the Eagle Mountain Alternative do not indicate a high likelihood that hazardous materials would be encountered within the alignments.

The use of hazardous materials for construction, operation, and maintenance of this alternative transmission line could create potential exposure for workers and the public. To mitigate potential impacts, the project would comply with all pertinent LORS that would define procedures for vehicle refueling and servicing, transportation and storage of hazardous materials, and disposal of hazardous wastes. In addition, the use of standard Conditions of Certification (COCs) would ensure that impacts were less than significant.

The project would be expected to generate small amounts of solid waste during construction of transmission towers and substation modifications. Waste disposal is discussed under Waste Management below. Overall, the Eagle Mountain Alternative is expected to create impacts on public health and safety and hazardous materials similar to those of the proposed project.

The Eagle Mountain Alternative variation would have slightly greater potential for impacts from hazardous materials, because it would require removal of the existing towers. This additional construction and excavation could result in encountering of historic contamination. Compliance with LORS and COCs would ensure that impacts were less than significant.

Land Use

The Eagle Mountain Alternative would be located in open space adjacent to an existing transmission line for its entire route. From the Buck Boulevard Substation to the Eagle Mountain Substation, the alternative route would follow the existing SCE Blythe-Eagle Mountain 161 kV transmission line for the 54 miles between the Blythe and Eagle Mountain Substations, and then would follow the Metropolitan Water District (MWD) Eagle Mountain-Julian Hinds 230 kV transmission for the remainder of the 71-mile route. There are no residences adjacent to the alternative route. The residences in the community of Hayfield would be slightly farther from this alternative than the proposed route because the Eagle Mountain Alternative enters Julian Hinds substation from the east.

Like the proposed project, the construction and presence of the Eagle Mountain transmission line has the potential to reduce the quality of wilderness and recreation experiences. There are nearly 20 recreation areas in the vicinity of the Eagle Mountain Alternative managed either individually or collectively by the following entities: BLM, National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Parks and Recreation, California Department of State Parks, the Center for Natural Lands Management, and the Nature Conservancy. Wilderness Areas in the vicinity include: Palen-McCoy Wilderness, Little Chuckwalla Mountains Wilderness, Orocopia Mountain Wilderness, Mecca Hills Wilderness, Indian Pass Wilderness, Chuckwalla Mountains Wilderness, Palo Verde Mountains Wilderness, and North Algodones Dunes Wilderness.

The Eagle Mountain Alternative would be adjacent to the Joshua Tree National Park for approximately 22 miles and would be visible from several areas in the eastern part of the park. This visual impact would be less than significant, however, because the

transmission line would be located within an existing utility corridor and would parallel other transmission lines and utilities.

In addition, construction of the Eagle Mountain Alternative may reduce access and visitation to certain wilderness and recreation areas during construction. However, any construction activity adjacent to these roads would not block or restrict access to recreation areas and would be short-term in nature. As a result, impacts to accessing recreation areas are expected to be less than significant.

Approximately 11 miles of this alternative route would be located outside the established BLM utility corridor (in the area north of Desert Center). In the California Desert Conservation Area (CDCA) Plan, utility corridors were established to confine new transmission lines to established corridors, where possible. Therefore, construction and operation of a new transmission line along this portion of the alternative alignment would require an amendment to the CDCA Plan. Because there is an existing line in the corridor and substantial issues would not likely arise, a plan amendment would not create a significant regulatory feasibility problem for this alternative.

Overall, the Eagle Mountain Alternative would be consistent with applicable land use plans and policies of the federal, state, and local governments with jurisdiction over the land in the project area. The line would not be within an established BLM utility corridor for its entire length as the proposed project would be, so it would require an amendment to the CDCA Plan. In addition, the alternative route would pass at a similar distance or slightly farther from the same residences affected by the proposed project near BEP and Julian Hinds Substation. Similar to the proposed project during this segment, the alternative line would pass through agricultural lands (undeveloped and abandoned orchard and jojoba) for its first 2.9 miles. Therefore, land use impacts of the Eagle Mountain Alternative would be greater than those of the proposed project.

Overall, the land use impacts of the Eagle Mountain Alternative Variation would be slightly less than those of the alternative itself because the consolidation of lines would meet BLM's stated need to minimize the duplication or proliferation of multiple similar facilities.

Noise and Vibration

The Eagle Mountain Alternative would be located almost entirely in areas that have no permanent residents, except for the small employee community of Hayfield near Julian Hinds Pumping Station and Substation. However, there is recreational use of BLM lands along the ROW.

There are few activities that would generate substantial sustained noise events. Existing noise in the area of the Eagle Mountain Alternative would include:

- Traffic on major roadways (I-10, R2, SR-177) and secondary/feeder roadways
- Off-highway vehicle (OHV) recreational activities at various locations along the ROW

- Corona noise (humming or crackling) and other sounds associated with transmission line/substation operation.
- Vehicles and equipment used for operation and maintenance of electrical facilities

Noise generated during construction of the project could result in temporary increases in noise levels to sensitive receptors, such as the few residences and recreational users, who are short-term and mobile. However, COCs would require noise reduction near sensitive receptors. With this mitigation, and because construction activities would be temporary and of short duration, noise impacts from the Eagle Mountain Alternative are expected to be less than significant.

Blasting is not anticipated, though it may be necessary at occasional locations. If blasting did occur, it would be of short duration and would be considered as having a less than significant impact on sensitive receptors. Even if blasting were required near the community of Hayfield, mitigation would include restrictions on use of blasting only as a last resort, and during restricted times, which would reduce impacts to less than significant and would be similar to the proposed project.

Operational noise from the transmission facilities would be below regulatory limits, and noise from maintenance activities would be low and of short duration. Operational noise impacts would be similar to those of the proposed project; both would be less than significant.

The Eagle Mountain Alternative Variation would have greater construction noise impacts than the alternative itself due to more extensive construction activity and a longer construction duration associated with removal of the existing towers. Impacts would remain less than significant.

Socioeconomics

Socioeconomic impacts include impacts on the population, employment, and housing of communities along the alternative route. These impacts can be caused by use of non-local construction workers, and by the potential for project-induced population growth. The alternative project may create the following various types of socioeconomic impacts:

- Population **In-migration and Employment Impacts.** Population in-migration to the communities in the study area caused by local expenditures and temporary construction employment due to the proposed project.
- Temporary **Housing Impacts.** Short-term impacts on temporary housing from non-local workers who commute to the project construction area from outside the study area.
- Business **Impacts**. Impacts to businesses adjacent to the project route due to construction activities. These disruption impacts are discussed under air quality, traffic, and noise.

The Eagle Mountain Alternative would generally have the same socioeconomic setting as the proposed project and would not have a significant effect on employment in the overall project area. The number of project-related positions created would be negligible relative to the overall number of construction jobs in eastern Riverside County.

The construction of the project would temporarily increase the population in the project area. Similar to the proposed project, the workforce would reach its peak at approximately 162 individuals with an average of approximately 60 workers. However, the impacts from a temporary increase were not expected to be significant because the population increase would be short-term, not requiring additional government services, and there is adequate short-term housing in the area so there would be no effect on housing availability.

The project would also contribute to a positive short-term impact on the local economy and on the fiscal resources of local governments in Riverside County. Specifically, Riverside County and the Chuckwalla Valley would gain some economic benefit from construction expenditures. However, the Eagle Mountain Alternative would not place a significant demand on public services or facilities.

The Eagle Mountain Alternative would not be expected to have a disproportionately adverse environmental justice impact on minority, low-income, or American Indian populations, since the project would not have any significant impacts that would affect local populations. Overall, socioeconomic impacts would be similar to the proposed project.

The alternative variation would have similar socioeconomic impacts to those of the Eagle Mountain Alternative.

Soil and Water

Similar to the proposed project, the Eagle Mountain Alternative would be located within the Mojave Desert and within the Colorado, Chuckwalla, and Hayfield hydrologic basins.

Within these basins the transmission line would cross dry desert washes. There are no permanent water bodies or perennial streams along the Eagle Mountain Alternative route. Impacts on dry washes would be limited to temporary alteration of bed and banks (where they would intersect new access and spur roads) and increased sediment load during initial storm events following construction.

Groundwater throughout the project area is too deep to be affected by project construction or operation. The use or storage of hazardous material or fueling or lubrication of construction equipment would be prohibited within 200 feet of a well or spring. Potential impacts to groundwater from construction would be similar to the proposed project and less than significant.

Permanent and temporary soil disturbance would result from construction activities associated with access roads, spur roads, pole sites, pull sites, staging/laydown areas,

tension sites, temporary guard structures, and grading/earthwork associated with substation modifications. Implementation of COCs would ensure that soil impacts would be less than significant at the two substation sites and along the Eagle Mountain Alternative route. Operational impacts to soil and water resources would also be less than significant.

While impacts to soil and water resources would be similar to those of the proposed project, the additional four miles of construction required for the Eagle Mountain Alternative would create overall more impacts than for the proposed project.

The alternative variation would have slightly greater impacts than the Eagle Mountain Alternative itself, because there would be additional ground disturbance resulting from removal of the existing towers. However, impacts could still be reduced to less than significant levels with implementation of COCs.

Traffic and Transportation

All roadways in the Eagle Mountain Alternative area have relatively low traffic volumes (compared with their design capacities) with a rating of level of service (LOS) A (no congestion). Interstate 10 provides major access to the alternative route along with a few secondary roads (e.g., SR-177, Chuckwalla Road, Eagle Mountain Road, Hayfield Road, and Hobsonway, etc.).

There are three airports located within the vicinity of the Eagle Mountain Alternative. The Blythe Airport is located in the northeast portion of the project area, approximately 1.2 miles west of Buck Boulevard Substation. Desert Center Airport has two runways and is located less than one mile north of the Eagle Mountain Alternative route. One minor airport, the Julian Hinds Pump Plant Airstrip, which does not have a control tower, is located 0.5 miles southwest of the Julian Hinds Substation. The Eagle Mountain Alternative would not be expected to effect the operation of airport facilities.

There are two railways in the project vicinity, the Arizona & California (A&C) Railroad near the center of Blythe and the Eagle Mountain Railroad line, which roughly parallels the Eagle Mountain Alternative to the south from Eagle Mountain Substation to Red Cloud Road. The transmission line would cross the Eagle Mountain Railroad just east of the Eagle Mountain Substation. The railroad line is intended in the future to accommodate transport of non-hazardous solid waste to the Eagle Mountain Landfill. Since the transmission line would cross the railroad line overhead, the alternative project would have no effect on rail operations.

Due to the number of vehicle trips for personnel and equipment movement during construction and operation, traffic volumes on area roadways would be expected to increase during construction. Vehicle trips generated for construction of the Eagle Mountain Alternative would be similar to the Buck Boulevard to Julian Hinds component of the proposed project with 59 (average) to 129 (peak) daily round trips. This impact is considered to be less than significant because of the limited traffic volumes on all roadways and the relatively low number of construction-related trips per day.

Construction activities are not expected to create traffic delays or unsafe conditions for motorists. Potential impacts would be reduced through the use of temporary guard structures, short detour routes, and other traffic controls when necessary.

Large construction vehicles could exceed the design weight capacities on local roadways, thereby damaging these roads (or their bridges or culverts). Although this impact is not found to be significant, mitigation is suggested that would require repair of any road damage either during or following construction.

Construction and operation of the Eagle Mountain Alternative would comply with all LORS pertinent to traffic and transportation. This alternative would have a slightly greater impact on traffic and transportation due to the closer proximity to the Eagle Mountain Railroad and the Desert Center Airport, and a longer construction duration of traffic impacts from four additional miles of transmission line. However, impacts remain less than significant.

The alternative variation would have similar impacts to those of the Eagle Mountain Alternative.

Transmission Line Safety & Nuisance

Induced Current and Shock. The project may cause an incremental increase in the risk of electric shock within the transmission line ROW; however, because the line would be in an existing corridor it would not create a new risk. In order to reduce these impacts to less than significant levels, suggested mitigation includes grounding nearby fences, and consulting with agricultural land managers to ensure that irrigation practices do not create a potential for water stream contact with overhead transmission lines. The first 2.9 miles of both the proposed project and this alternative would cross agricultural lands; however, the lands are undeveloped or abandoned orchards/jojoba. The Eagle Mountain Alternative would have a similar risk of electric shock to that of the proposed project.

Effects on Pacemakers. An energized transmission line also creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the Eagle Mountain Alternative would be similar to the proposed project and would not cause a significant change to the baseline conditions within the existing transmission line corridor.

Blasting. Transportation and the use of blasting materials (if necessary) would be expected to create an increased risk of injury to workers and the public. The use of a licensed contractor with a valid California “Blaster License” pursuant to Cal-OSHA Article 8, Section 1550-1580 would mitigate risks to less-than-significant levels. Impacts between the proposed project and any alternative would be similar.

Magnetic Fields. This alternative could increase magnetic field levels within and in areas immediately adjacent to the ROW. The Petition states that increases in magnetic field were found to occur within 300 feet of the centerline, but that one permanent residence with long-term exposure potential occurs (BLYTHE, 2004a). The increased magnetic field levels would be less than significant at the location. This residence is located on the south side of Hobsonway, approximately 900 feet from the transmission line for both the proposed project and this alternative. As there would not be other residences or activity within this area, impacts from magnetic field levels are considered less than significant and would be similar to the proposed project.

The alternative variation may result in an increased magnetic field or a reduction in the magnetic field around the new combined transmission line because the two circuits could cancel each other's effects. However, this would require modeling based on current and load flow in both circuits to determine the effects and to allow comparison with the proposed project. Overall, the alternative variation would have similar impacts to those of the Eagle Mountain Alternative.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line safety hazards or nuisances. However, the Eagle Mountain Alternative line would be approximately four miles longer than the proposed project, showing the proposed project line as preferable in terms of the total length of the source of line fields to which individuals might be exposed.

Visual Resources

The Eagle Mountain Alternative would require construction of an additional transmission line adjacent to an existing line. The presence of the existing line creates a degraded visual setting; however this setting would be further degraded with the addition of a second set of towers, especially given the proposed concrete pole design that is different from the existing tower structures.

Similar to the proposed BEPTL project, this alternative would be located almost entirely on BLM land and would thus be subject to the BLM Visual Resources Management (VRM) classification. The VRM classification is determined by an established inventory and overlay method that consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes, each with a set of management objectives. The contrast analysis includes pre- and post-project comparisons for land and water forms, vegetation, and structures. Impacts from this alternative would be based on this system.

BLM does not have established VRM classifications for its lands covered by the Eagle Mountain Alternative. "Interim VRM Classifications" were presented in the DSWTP EIS/EIR and the final assessment of visual sensitivity for the proposed project was based on direction provided in the BLM Manual Handbook (BLM, 1981) and the Applicant's professional judgment. Therefore, these "Interim VRM Classifications" may need to be refined to more accurately reflect the landscape variability that occurs

throughout the I-10 corridor before thorough analysis on this alternative can be performed and consistency with the applicable VRM objectives can be determined.

The alternative route would cross I-10 at four locations (compared to two with the proposed project), and approximately 25 miles of the alignment would be in close proximity (300 to 500 feet) of I-10. Additionally, the Eagle Mountain alignment would be immediately adjacent to the Joshua Tree National Park (NP) boundary for approximately 22 miles and would be visible from several areas in the eastern portion of the National Park.

Due to the visual impacts created at the four crossings of I-10 and the length of alignment close to I-10, as well as the visibility of the alternative route to viewers within the National Park, this alignment would have substantially greater visual impacts than the proposed route alignment.

The alternative variation would have less visual impacts than the Eagle Mountain Alternative itself, because this variation would result in only one set of towers in the corridor rather than the two that would exist with the alternative. Despite the route's increased visibility from I-10 and from Joshua Tree NP, when consolidated to a single set of towers, the Eagle Mountain Alternative variation would have similar impacts to the proposed project, which would be on a new additional set of towers.

Waste Management

The primary waste generated during transmission line construction would be solid non-hazardous waste (e.g., metal, wood, packing materials, plastics, and cardboard). Some non-hazardous liquid waste, solid hazardous waste (e.g., welding materials, dried paint, joint sealing compounds), and liquid hazardous waste (e.g., cleaning solvents and chemicals) would also be generated during construction.

The Blythe Sanitary Landfill is a permitted Class III (non-hazardous) facility about seven miles north of Blythe. It is projected to remain operational until 2073 and accepts an average daily load of about 50 tons/day. The volume of non-hazardous waste expected to be generated from construction and operation of this alternative would be similar to that of the proposed transmission line, and less than one percent of Blythe Landfill's annual capacity. This amount is not significant relative to the existing disposal capacity.

The following three Class I landfills in California are permitted to accept hazardous waste: Kettleman Hills in King County, Buttonwillow in Kern County, and Westmoreland in Imperial County. The generation of hazardous waste from this alternative would be a small fraction (less than one percent) of existing capacity and would not significantly impact the capacity or remaining life of any of the State's Class I landfills.

Similar to the proposed project, the applicant for the Eagle Mountain Alternative would need to implement a comprehensive program to manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes) and would comply with all LORS. The environmental impact of waste disposal would be less than significant, similar to the proposed project.

The alternative variation would have similar impacts to those of the Eagle Mountain Alternative.

Worker Safety & Fire Protection

The project area is located across three fire management categories according to the BLM's Field Office Fire Management Plan (BLM/CDFG, 2001): Category 2 (areas where fire is not desired, but natural burns may be permitted), Category 3 (areas where fire is desired but there may be social, political, or ecological constraints that must be considered), and Category 4 (areas where fire is desired and there are few to no constraints to its use). Category 2 areas are generally found in scattered agricultural lands and Categories 3 and 4 are found in local foothills and mountains.

The analysis found that project activities associated with construction, operation, and maintenance would increase the potential for accidental fire ignition. The implementation of a Fire Prevention and Response Plan would be expected to mitigate the risks of fire ignition.

In addition, the energized transmission line is expected to increase the potential for accidental fire ignition. However, the occurrence of accidental ignition would result from a series of unlikely events, and therefore impacts to fire hazards are expected to be adverse but not significant.

Transportation and the use of blasting materials, if required, would be expected to create an increased risk of injury to workers and the public. The use of a licensed contractor with a valid California "Blaster License" pursuant to Cal-OSHA Article 8, Section 1550-1580 would mitigate risks to less-than-significant levels.

Worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, this alternative would have a similar impact in the areas of worker safety and fire protection than the proposed Blythe Transmission Line.

The alternative variation would have similar impacts related to worker safety and fire protection to those of the Eagle Mountain Alternative.

Geology, Mineral Resources, and Paleontology

The Eagle Mountain Alternative lies primarily on alluvial-filled areas within the Palo Verde Mesa, Chuckwalla, and Orocopia Valley basins. Although the transmission line route is generally flat, some steeper terrain exists along the route near the Eagle Mountains.

There is no recent seismic activity in the Palo Verde Valley or Mesa area. Earth movement has been felt in the Palo Verde region from earthquake activities outside of the area, but significant earthquake damage in the region has not occurred. To the west, the most recent seismic activity in the Julian Hinds vicinity was the magnitude 6.0 North Palm Springs Earthquake occurring along the Banning Fault and the Garnet Hill Fault. This earthquake resulted in significant damage to the Devers Substation, but

subsequent upgrades were added that meet UBC Seismic Zone 4 design criteria (IID & BLM 2003). Seismic activity could pose a risk to the project area and could damage project facilities. Suggested mitigation includes avoiding sites within known fault zones, and to construct facilities to withstand projected ground shaking. In addition, both the proposed project and the Eagle Mountain Alternative would be designed in accordance with UBC Seismic Zone 3 requirements that would minimize the exposure of people to the risks associated with large seismic events to less than significant.

Hazards from unstable slopes and seismic hazards could affect roads used for construction. Also, some tower sites would be subject to geotechnical hazards that would need to be corrected prior to construction. However, impacts to roads or the local environment from excavations and fill were considered less than significant. Site-specific geologic conditions have yet to be determined and may create a significant disturbance on project facilities. The transmission line for both the proposed project and the Eagle Mountain Alternative would be designed in accordance with CBC (CCR Title 24) and impacts would be similar and less than significant.

Mineral Resources. Although there are a number of mines in the area of the Eagle Mountain Alternative, such as the Eagle Mountain Mine, the transmission line would not obstruct access to mineral resources or to transportation routes to mines. Therefore, the Eagle Mountain Alternative would not create impacts to mines or mineral resources and, in fact, could bring necessary power closer to potential mine sites.

Paleontology. The Buck Boulevard Substation site is on the Palo Verde Mesa and is underlain by one mappable lithologic unit consisting of Pleistocene age older alluvium (Qc) of Jennings (1967) and subsequently revised and placed in the Chemehuevi Formation by Bell, Ku, and Kukla (1978) and Agenbroad, Mead, and Reynolds (1992) (BLYTHE, 2004a). The paleontological resources of a sedimentary formation may include preserved hard parts of organisms, impressions of leaves and soft parts, tracks, burrows, coprolites, seeds, pollen or other microfossils. Pleistocene older alluvium is considered to have a moderate potential to contain fossils (FERC 2002, as cited in BLYTHE 2004a). This portion of the project would be identical for the proposed project and the Eagle Mountain Alternative. Excavation in conjunction with construction of the transmission line alternative has the potential to adversely impact significant paleontologic resources. In order to fully assess potential impacts to paleontological resources, a search of the survey of the route would be required, but this could not be completed for this analysis. Therefore, it is not possible to fully assess impacts to paleontological resources from this alternative and compare them to those of the proposed project. In general, in order to mitigate potential impacts, a qualified vertebrate paleontologist would develop a program that includes pre-construction surveys; monitoring; preparation, identification, and curation of recovered specimens; and preparation of a report of findings.

Conclusions. Overall impacts to geology, mineral resources, and paleontology of the Eagle Mountain Alternative would most likely be less than significant and similar to the proposed project with the implementation of proper engineering design, mitigation measures, and Best Management Practices implemented for the proposed project.

The alternative variation would have similar impacts related to geology, mineral resources, and paleontology to those of the Eagle Mountain Alternative discussed above.

Transmission System Engineering

The Eagle Mountain Alternative would result in construction of a new single-circuit 230 kV transmission line from the Buck Boulevard Substation to the Julian Hinds Substation, creating a similar regional transmission effect as that of the proposed project. The System Impact Studies now in progress will define potential downstream transmission effects of both routes.

The design and construction of the project shall be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

DESERT SOUTHWEST TRANSMISSION PROJECT ALTERNATIVE

ALTERNATIVE DESCRIPTION

The Desert Southwest Transmission Line Project (DSWTP) Draft EIS/EIR published by the Imperial Irrigation District (IID) and BLM in March 2003 analyzes a proposed new 118-mile 230 kV or 500 kV line between SCE's Devers Substation, approximately 10 miles north of Palm Springs, and the Buck Boulevard Substation. The optimum operating voltage would be based on the results of system studies that are underway, but existing studies indicate that a 500 kV option would perform better than a 230 kV option and could accommodate both BEP and BEP II with mitigation of system reliability criteria violations.

The 230 kV transmission line option would utilize steel lattice structures for much of its alignment; however, single-steel pole structures would be used in agricultural areas to minimize disturbance of agricultural land. The 500 kV transmission line option under consideration would use steel lattice structures along its entire route.

The original DSWTP application showed that the transmission line would terminate at Hobsonway Substation, a new substation on the north side of Hobsonway west of the Blythe Power Plant. However, in this alternatives analysis, it is assumed that the line could also terminate at the existing Buck Boulevard Substation east of Blythe Power Plant on Blythe Energy property (like the proposed project)1.

As shown on **ALTERNATIVES Figures 3 and 4,** the DSWTP transmission line alignment would follow a generally east/west alignment from the new substation/switching station to the Devers Substation.

1 The Buck Boulevard Substation is presently owned by Western, but it is located within the basic fenceline of the BEP project.

Much of this alternative route would be in the same corridor as both the Proposed Project and SCE's DPV 500 kV No. 1 transmission line.

The DSWTP Alternative would differ from the proposed route in the following two locations:

- The DSWTP Alternative would follow the Mesa Verde Sub-Alignment Alternative illustrated by Blythe Energy in its Petition (see **ALTERNATIVES Figure 8**; for a description of this route segment, see Appendix B, Alternative Eliminated From Full Consideration). This route segment would be north of the proposed transmission line route and south of I-10, generally parallel to the I-10. The DSWTP/Mesa Verde Sub-Alignment would diverge from the proposed route approximately 2.5 miles south of Blythe Power Plant at the northern boundary of the southernmost orchard where the proposed route turns to the west then south around the orchard property. The sub-alignment would continue west through desert open space, north of the DPV corridor. This segment would be approximately 3.25 miles shorter than the proposed Buck Boulevard-Julian Hinds transmission line route. At the point where the proposed project turns from a northwest to a west direction, the two routes rejoin one another and parallel I-10 to the west.
- Like the proposed project, the DSWTP would remain to the north of the DPV corridor adjacent to I-10 by Desert Center in order to avoid Alligator Rock ACEC (7,726 acre area of archaeological significance). However, when the proposed project would turn southwest to rejoin the DPV corridor 4.7 miles later, the DSWTP would continue west adjacent to and paralleling I-10. The two routes rejoin one another when the proposed project rejoins the I-10 corridor east of Red Cloud Road.
- At Hayfield Road the DSWTP would continue east on the south side of I-10 towards Devers Substation, whereas the proposed transmission line would cross I-10 and parallel Hayfield Road to the north for approximately 4.75 miles into Julian Hinds Substation.

The remainder of the DSWTP would parallel the DPV corridor (see also the description of the DPV2 Alternative below) and I-10. Approximately 2.5 miles east of the Cactus City rest area, DSWTP Alternative and DPV would cross to the north side of I-10 and would continue west-northwest into Devers Substation, 10 miles north of Palm Springs.

Because the DSWTP transmission line would be located along existing SCE DPV transmission line ROW for much of its alignment, the alternative project would utilize existing access roads, requiring a limited amount of new access road construction. Substation/switching station construction would be necessary at a new facility on Hobsonway (if used), approximately 4.5 miles west of Blythe, and substation equipment modifications would be necessary at the existing Devers Substation.

Rationale for Consideration

This alternative is being considered for the following reasons.

- It is a separately proposed project for which a Draft EIS/EIR has already been prepared. Because the DSWTP would carry electricity from the Buck Boulevard Substation to SCE's Devers Substation, it would serve the basic objectives of the BEPTL and eliminate the need for the BEPTL.
- At 500 kV (or double-circuit 230 kV), the DSWTP could likely accommodate generation from both BEP and BEP II, thus improving reliability and security.
- Provides potential major 500 kV hub for Desert Southwest transmission line expansion, because adding a 500 kV line from Buck Boulevard, Hobsonway, or the Midpoint Substation could provide a location for a second 500 kV line from Arizona (perhaps DPV2). The substation would be large, in an isolated area, and capable of terminating several 500 kV lines. It could be a natural endpoint for a future 500 kV line south to the Imperial Valley or the Devers Substation.
- At 500 kV, the DSWTP could be constructed as the western portion of the Devers-Palo Verde 500 kV No. 2 Project, eliminating separate impacts from that project and cumulative impacts of both projects together. In a letter from Gail Acheson (BLM) to Gary L. Palo (Blythe Energy) dated January 6, 2005, BLM states that the "BLM has a need, in the public interest, to optimize use of the utility corridor so as to best accommodate multiple existing and future projects, minimize adverse environmental impacts, and to minimize duplication or proliferation of similar facilities." This alternative would be consistent with that stated need.

In addition, one of the stated objectives of the DSWTP, as stated in the Draft EIS/EIR is as follows:

- Provide improved transmission access to new generation sources (e.g., the Griffith Energy Project, the South Point Energy Project, *and the Blythe Energy Project* [emphasis added]) to meet the increased demands for electrical power in IID's service area and to respond to transmission service and interconnect requests.

Buck to Mirage/Devers Alternative Variation

This alternative modification would be similar to the DSWTP and would include a longer new 230 kV double-circuit transmission line or a 500 kV line, extending from the Buck Boulevard Substation to either the SCE Mirage or Devers Substations. Although the majority of the transmission line route would be similar to that of the DSWTP, because Blythe Energy would build the project themselves under this alternative variation, they would retain control of the project, its schedule, and the transmission rights. The environmental impacts and conclusions of this alternative variation would be the same as the DSWTP Alternative for the Buck Boulevard to Devers variation, and, therefore, it is not specifically discussed in the analysis below. An endpoint at Mirage would also be similar to the DSWTP Alternative but would have slightly lesser impacts because the route would be approximately 14 miles shorter and would eliminate potential impacts between Mirage and Devers.

This variation of the Buck to Mirage/Devers Alternative is being considered for the same reasons as the DSWTP, defined above. However, for this variation the Applicant would be in control of the project (versus DSWTP), thus eliminating the project's uncertainty and maintaining site control.

ENVIRONMENTAL AND ENGINEERING ASSESSMENT FOR DSWTP ALTERNATIVE

Air Quality

The DSWTP Alternative would be located in the Mojave Desert region of southern California. Air basins affected by the DSWTP alternative include Mojave Desert Air Basin (MDAB) and the Salton Sea Air Basin (SSAB). Sources of emissions would be similar to those discussed for the proposed project and under the Eagle Mountain Alternative above. Existing air quality is generally impaired in the alternative area relative to California standards for both ozone and PM10. Ozone formation is influenced by regional meteorological conditions that transport significant amounts of ozone forming pollutants into the region from the Los Angeles Basin. Ambient PM10 concentrations exceeding both federal and state standards in the Coachella Valley project area are likely due to high levels of naturally produced particulate dust matter combined with regional man-made emissions. The CO and NO_2 ambient levels do not exceed federal or state standards. Segments of this alternative would be located within regions classified federally as attainment or unclassified attainment and designated by CARB as non-attainment (BLM & IID 2003).

Construction and operation of the proposed DSWTP Alternative would not require any air quality permits from SCAQMD or MDAQMD, but permits to operate would be required by the Imperial County Air Pollution Control District (ICAPCD) for each mobile air pollutant source that cannot move under its own power, such as air compressors. Air pollution emissions from the DSWTP project were determined in the EIS/EIR to be short-term and would occur during construction only (BLM & IID 2003). Construction related emissions would consist of CO, NO_x, SO_2, and PM10 and would be attributed to exhaust from construction equipment; fugitive dust from grading, earth moving, and equipment traveling on paved and unpaved roads; and construction crew vehicle traffic.

Emissions from construction of the DSWTP would exceed MDAQMD and/or SCAQMD significant thresholds for CO, NO_x, Volatile Organic Compounds, and PM10. The EIS/EIR summarizes the projected construction emissions (in pounds/day) relative to significant emission thresholds for MDAQMD and SCAQMD. The DSWTP project is also expected to exceed federal *de minimus* thresholds established by the General Conformity rule (BLM & IID 2003). Implementation of construction mitigation measures, such as properly tuning and maintaining heavy duty off road diesel equipment and the utilization of water and chemical dust suppression, would reduce exhaust emissions to less than significant levels.

Although the DSWTP would be required to meet all District rules and requirements of the Mojave Desert Air Quality Management District (MDAQMD), South Coast Air Quality Management District (SCAQMD), and ICAPCD, the alternative would generate more air

emissions because construction would extend along a longer route and for a greater duration, thereby creating greater air quality impacts than the proposed project. However, like the proposed project and the alternative itself, impacts would be less than significant after implementation of required mitigation.

Biological Resources

As with the proposed project route, this alternative would cross substantial desert tortoise habitat and areas with sensitive plant species. Much of this route would be within the Chuckwalla Desert Wildlife Management Area (DWMA) for west of BEP to west of the Cactus City Rest Area.

Reconnaissance level habitat assessments and focused protocol surveys were conducted for the DSWTP route between June 13 and June 25, 2002. These surveys included the plant communities/wildlife habitat type identification, incidental sensitive plant and wildlife species observations, and protocol surveys for special-status species including desert tortoise, flat-tailed horned lizard, and Coachella Valley fringe-toed lizard. Ten special-status species were observed during the 2002 surveys, including two listed species (the desert tortoise and the Coachella Valley fringe-toed lizard) and the following eight sensitive (e.g., non-listed) species: foxtail cactus (*Escobaria vivipera alversonii*), Colorado Desert fringe-toed lizard (*Uma notata*), chuckwalla (*Sauromalus obesus*), black-tailed gnatcatcher (*Polioptila melaneura*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanus ludovicianus*), prairie falcon (*Falco mexicanus*), and Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*) (BLM & IID 2003).

The EIS/EIR indicated that 38 special-status species may inhabit the DSWTP area ROW or areas immediately adjacent to the ROW. Special-status species expected to occur include:

- **Special-Status Plants**: Abram's Spurge, Algodones Dunes Sunflower, Ayenia, Coachella Valley Milkvetch, Cove's Cassia, Crown-of-Thorns, Crucifixion Thorn, Desert Sand Parsley, Fairyduster, Foxtail Cactus, Giant Spanish Needle, Glandular Ditaxis, Harwood's Milkvetch, Las Animas Colubrina, Little San Bernardino Mountains Gilia, Mesquite Nest Straw, Munz's Cholla, Orocopia Sage, Pierson's Milkvetch, Saguaro, Sand Food, Slender Woolly-heads, Spearleaf, Wiggins's Croton,
- **Special-Status Fish**: Razorback Sucker
- **Special-Status Birds**: American Peregrine Falcon, Black-tailed Gnatcatcher, Bendire's Thrasher, Brown-crested Flycatcher, Burrowing Owl, California Horned Lark, Crissal Thrasher, Elf Owl, Ferruginous Hawk, Gila Woodpecker, Gilded Northern Flicker, Golden Eagle, LeConte's Thrasher, Loggerhead Shrike, Merlin, Mountain Plover, Prairie Falcon, Southwestern Willow Flycatcher, Sonoran Yellow Warbler, Vermilion Flycatcher
- **Special-Status Reptiles**: Chuckwalla, **Coachella** Valley Fringe-toed Lizard, Colorado Desert Fringe-toed Lizard, Desert Tortoise, Desert Rosy Boa, Flat-tailed Horned Lizard, Red Diamond Rattlesnake

- **Special-Status Amphibians**: Couch's Spadefoot
- **Special-Status Insects**: Andrew's Dune Scarab Beetle
- **Special-Status Mammals**: Nelson's Bighorn Sheep, Coachella Valley Round-tailed Ground Squirrel, Palm Springs Pocket Mouse, Yuma Puma
- **Special-Status Bats:** California Leaf-nosed Bat, Cave Myotis, Greater Western Mastiff Bat, Townsend's Big-Eared Bat, Pallid Bat, Southern Yellow Bat, Pocketed Free-Tailed Bat, Spotted Bat, Western Small-Footed Myotis Bat

Impacts to Vegetation. The EIS/EIR found that construction and operation of the DSWTP would result in a loss of lands within the following vegetation communities: Sonoran Creosote Brush, Desert Dry Wash, Agricultural Land, Sonoran Desert Mixed Scrub, and Mojave Creosote Brush Scrub. Due to the large amount and general distribution of their habitats, this loss was considered less than significant. The EIS/EIR recommended mitigation measures to reduce vegetation disturbance during construction. The EIS/EIR also found that the project could result in the introduction and dispersal of noxious weeds, and recommended mitigation to prevent their spread. Because the proposed DSWTP could remove or disturb riparian communities, actions to incorporate riparian area avoidance and permit measures were suggested.

Impacts to Wildlife. The EIS/EIR found that the DSWTP could create temporary and permanent losses of wildlife habitat and habitat fragmentation, and could result in direct wildlife mortality and temporary displacement of wildlife. Specifically, raptor species may be at a greater risk during the life of the project as a result of electrocution and collision with conductors. The analysis recommends that the project design minimize electrocution and collision potential. It also recommends coordination with responsible resource agencies. Additional impacts to wildlife include increased disturbance of resident wildlife species through the construction of new access roads, and the disturbance of nesting raptors and migratory birds. In order to minimize these disturbances, suggested mitigation includes the use of construction activities that would minimize potential wildlife disturbance, the restriction of public access, and the use of pre-construction surveys.

Impacts to Special-Status Species. The EIS/EIR found that the IID project may potentially disturb special-status plants. This impact could be mitigated by surveying to avoid or salvage these plants. Construction and operation of the project could also have direct impacts on species such as the desert tortoise, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, desert rosy boa, Couch's spadefoot, burrowing owl, Loggerhead Shrike, LeConte's Thrasher, black-tailed gnatcatcher, prairie falcon, chuckwalla, and Coachella Valley round-tailed ground squirrel. The analysis recommends implementing measures that decrease the habitat loss and incidental take of these species.

Impacts to Waters of the U.S. The EIS/EIR found that the DSWTP may create short-term disturbances to "waters of the U.S.". Suggested mitigation to reduce these disturbances includes obtaining a Nationwide 12 Permit and restoring the body of water in order to encourage vegetation to reestablish to its pre-construction condition.

Conclusion. Overall, biological impacts would be less than significant with mitigation, however, because the route is approximately 51 miles longer there would be much greater biological resources impacts and the proposed project is preferred over the DSWTP Alternative.

Cultural Resources

Within the DSWTP Alternative area, there are historic sites attributed to early settlement of the area may include military camps, mining sites, house locations, and Colorado River Aqueduct construction camps. Much of this region was used as a desert training area during World War II and numerous military camps and training positions have been left behind. Historic roads and trails within the DSWTP area include the Bradshaw Trail and the Southern Pacific Railroad.

Five Native American groups principally associated with this area by occupation, resource use and oral history include the Cahuilla, Chemehuevi, Mohave, Halchidhoma, and Quechan. The EIS/EIR details the local history and cultural practices of each group.

The EIS/EIR uses existing archaeological and ethnographic survey reports to predict the number of historic sites that might be encountered, their distribution, and areas of high sensitivity. The EIS/EIR anticipates that some cumulative indirect impacts resulting from increased access or activity along the existing ROW may have occurred since the previous surveys, particularly along the I-10 corridor.

There are 194 archaeological sites that have been previously recorded within or in close proximity to the four project alternatives and two optional routes evaluated in the EIS/EIR. In addition, sites or locations within 1 to 2 miles of the proposed route have been identified by previous studies or the California State Native American Heritage Commission as either Traditional Cultural Properties (TCPs) or areas of special Native American concern.

The EIS/EIR found that the DSWTP could result in direct effects to prehistoric and historic archaeological sites. Unavoidable direct impacts to these resources could occur as a result of surface or subsurface disturbance and activities during transmission line construction, operation, and/or maintenance. The EIS/EIR requires the preparation of a Treatment Plan for avoiding and mitigating unavoidable direct adverse effects on resources eligible for National Register listing.

The EIS/EIR also finds that construction activities could result in the discovery of previously unknown prehistoric and historic resources. This report recommends that a cultural resource specialist should be available during construction to evaluate resources discovered. Additional cultural resources impacts from the DSWTP include: the potential to affect resources within sensitivity zones; and the impacts of construction activities, disturbance, and the placement of project-related facilities on TCPs. The EIS/EIR also recommends consultation with concerned Native American groups to determine if the archaeological sites have additional sensitivities as TCPs. The EIR/EIS concludes that, with implementation of mitigation, all impacts to cultural resources would

be less than significant. CEQA requires that the lead agency develop mitigation that will reduce impacts to cultural resources to below a level of significance.

A records search was completed for the Desert Southwest Transmission Line Alternative route and for an alternate route that runs slightly to the north of the Desert Southwest Transmission Line Alternative. The records search extended approximately one mile from the center line of both projects. Areas that had been previously surveyed were noted. Areas that had not been previously surveyed or that were not well documented were surveyed. Thirty-five cultural sites (both prehistoric and historic) have been recorded within this study area. There are Traditional Cultural Properties (TCPs) in the vicinity of Devers Substation, and along the route 15 TCPs have been confirmed by elders of several different tribes. Three zones of archaeological sensitivity were identified along this route. They were identified as the Alligator Rock Complex, Camp Young, and the Indio Hills Complex TCP. Final design of the project would avoid any sites that were determined eligible to the National Register of Historic Resources. The areas are identified as zones of archaeological sensitivity because they are large and contain numerous sites (Blythe 2004e, Desert Southwest Route Survey and Blythe 2004a, Appendix D).

Overall, cultural impacts to known and unknown resources would be less than significant with mitigation, however, because the route is approximately 51 miles longer there would be much greater cultural resources impacts and the proposed project is preferred over the DSWTP Alternative.

Hazardous Materials

There has been no indication that hazardous materials have been present within the DSWTP ROW. Potential contamination sources would be (1) pesticide use from nearby agricultural activities, or (2) historical or illegal disposal of hazardous materials within the project area.

The DSWTP Draft EIS/EIR found that the use of hazardous materials for construction, operation, and maintenance of the DSWTP project would create potential exposure for workers and the public. To mitigate potential impacts, the project would implement a Construction, Operation, and Monitoring (COM) Plan to be submitted to BLM that would define procedures for vehicle refueling and servicing, transportation and storage of hazardous materials, and disposal of hazardous wastes.

Construction of the DSWTP would be expected to generate solid waste, which would be disposed at a site listed in the COM Plan. This alternative would have a slightly higher likelihood of encountering hazardous materials during construction, because of its longer route. In addition, the greater line length would result in generation of more hazardous and non-hazardous waste during construction. In addition, this route crosses nearby rural and suburban residences in closer proximity, which would result in the transport and use of hazardous materials during construction closer to residences than with the proposed project.

Overall, the DSWTP Alternative, with appropriate mitigation, would not result in significant impacts as a result of hazardous materials.

Land Use

The transmission line would be located primarily in undeveloped open space along the established transmission line corridor. Sensitive land uses along the DSWTP corridor would consist primarily of residents and seasonal campers scattered throughout the project area. The DSWTP is located primarily in areas that have few permanent residents, except in the vicinity of North Palm Springs and Thousand Palms.

In the California Desert Conservation Area (CDCA) Plan, utility corridors were established to confine new transmission lines to established corridors, where possible. The DSWTP Alternative route would be located nearly entirely within the established BLM utility corridor, in the Northern and Eastern Colorado Planning Area and the Coachella Valley Planning Area, two of seven planning sub-areas for the CDCA. By replacing the proposed project, this alternative would also eliminate multiple transmission lines within the same corridor and the associated cumulative impacts, which is a stated goal of the BLM. Staff believes the BEPTL transmission modifications may be inconsistent with BLM's goals of optimizing the utility corridor.

The DSWTP would cross parcels designated as important farmlands in areas near Blythe and in isolated locations within the Western Coachella Valley. This includes two small Williamson Act parcels. The DSWTP EIR/EIS analysis finds that the project is compatible with agricultural uses and would not have a significant impact on important farmlands.

Like the proposed project, the construction and presence of the DSWTP transmission line has the potential to reduce the quality of wilderness and recreation experiences. Eight wilderness areas are located within five miles of the DSWTP project. The following are located one to five miles form the project site: Palen-McCoy Wilderness, Little Chuckwalla Mountains Wilderness, Orocopia Mountain Wilderness, Mecca Hills Wilderness, and Indian Pass Wilderness. The following wilderness areas are located within one mile of the project: Chuckwalla Mountains Wilderness, Palo Verde Mountains Wilderness, and North Algodones Dunes Wilderness. Although the line would not directly impact any of the wilderness areas, it would be visible from areas along their boundaries. The DSWTP EIR/EIS considers this to be a minimal visual impact because the transmission line would be located within an existing utility corridor and would parallel other transmission lines and utilities (BLM & IID 2003).

In addition, there are nearly 20 recreation areas in the vicinity of the DSWTP managed either individually or collectively by the following entities: BLM, National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Parks and Recreation, California Department of State Parks, the Center for Natural Lands Management, and the Nature Conservancy. Construction of the DSWTP may reduce access and visitation to wilderness and recreation areas during construction. However, any construction activity adjacent to these roads would not

block or restrict access to recreation areas and would be short-term in nature. As a result, impacts to accessing recreation areas are expected to be less than significant. Overall, the DSWTP project would be consistent with applicable land use plans and policies of the federal, state, and local governments with jurisdiction over the land in the project area (BLM & IID 2003). The DSWTP Alternative would include construction along a longer route, closer to residences (e.g., in North Palm Springs and Thousand Palms), and for a greater duration, thereby creating greater land use and recreational impacts than the proposed project. However, all impacts would still be less than significant.

Noise and Vibration

Sensitive land uses along the DSWTP corridor are described in the previous section, and would consist primarily of residents and seasonal campers scattered throughout the project area. The DSWTP is located primarily in areas that have few permanent residents, except in the vicinity of North Palm Springs and Thousand Palms. Few activities along the corridor generate substantial sustained noise events. Such activities would include:

- Traffic on major roadways (I-10, SR-78, SR-111) and secondary/feeder roadways.
- OHV **activities** at various locations along the ROW.
- Rural and **suburban** residential areas (North Palm Springs, Thousand Palms).
- Isolated **residential** areas, communities, and camping areas near project.
- **Agricultural** activities.
- "Humming" and other sounds associated with transmission line/substation operation.
- Vehicle and equipment used for operation and maintenance of electrical facilities.

Noise generated during construction of the project could result in temporary increases in noise levels to sensitive receptors. However, because construction activities would be temporary and of short duration, impacts are expected to be less than significant.

Blasting is not anticipated for the DSWTP project, though it may be necessary at occasional periods. If blasting were to occur, it would be of short duration and would be considered as having a less than significant impact on sensitive receptors. Mitigation would include using blasting only as a last resort, and during restricted times.

The EIS/EIR analysis finds that operation noise from project facilities would be below regulatory limits and that noise from maintenance activities would be low and of short duration. Therefore, no significant and unmitigable impacts are identified. However, due to the longer route and construction duration and the closer proximity to rural and suburban residences, noise impacts would be greater than for the proposed project.

Socioeconomics

Incorporated cities within the vicinity of the DSWTP Alternative include Blythe, Indio, Coachella, and Thousand Palms. The project would also pass through two parcels of

land owned by the Agua Caliente Band of Cahuilla Indians. Greater than 95 percent of the area population is Caucasian and/or Hispanic (BLM & IID 2003).
While there has been no recorded growth in the civilian labor force in Imperial County in recent years, there has been growth in non-farm wage and salary employment, and the unemployment rate has been declining (BLM & IID 2003). However, Riverside County's unemployment rates have consistently exceeded the State's rates, and Imperial County's annual average unemployment rate has consistently been the highest in the State.

According to the EIS/EIR, the DSWTP would not have a significant effect on employment in the overall project area. The number of project-related positions created would be negligible relative to the overall number of construction jobs in eastern Riverside County. The project would temporarily increase the population in the project area. However, the impacts from a temporary increase were not expected to be significant. The project was expected to also create an increased demand for housing in the Blythe, Coachella Valley, and/or Niland areas. This increase in demand was not expected to cause any significant negative short-term impacts to housing availability in the project area.

The project would contribute to a positive short-term impact on the local economy and on the fiscal resources of local governments in Riverside and Imperial Counties. Specifically, Riverside County and the Palo Verde Valley would gain some economic benefit from construction expenditures.

According to the EIS/EIR analysis, the DSWTP Alternative would not place a significant demand on public services or facilities.

The DSWTP Alternative was not expected to have a disproportionately adverse environmental justice impact on minority, low-income, or American Indian populations, since the project was not found to have any significant impacts that would affect local populations. Overall, socioeconomic impacts would be similar to the proposed project and less than significant.

Soil and Water

The following hydrologic basins are located in the DSWTP area: Chuckwalla, Orocopia, Coachella (Indio Subbasin), East Salton Sea Basin, Amos Valley, Arroyo Seco Valley, and Palo Verde Mesa. The predominant character of groundwater in the Colorado Desert is sodium sulfate or sodium chloride, with significant concentrations of calcium and bicarbonate in some areas. All of the groundwater basins within the DSWTP area were found to have localized problems with poor water quality due to sulfate, chloride, fluoride, or high total dissolved solids (BLM & IID 2003).

Construction activities could result in a discharge of hazardous materials (e.g., gasoline, diesel, oil, lubricants, paint solvents) into a watercourse or wash in addition to sediment discharge during construction. The EIS/EIR analysis recommends the implementation of a Stormwater Pollution Prevention Plan (SWPPP) to mitigate the impacts of potential sediment discharges. In addition, wells and springs adjacent to construction areas

could be disturbed or contaminated, which may be mitigated by limiting construction activities and the use of hazardous material near wells. Future tower locations located in areas subject to flood events could result in damage and risk of failure of project facilities. Towers should not be placed near watercourses or other high-risk flood areas. The Draft EIS/EIR finds that the use of water during construction would not have a significant impact on available resources (BLM & IID 2003).

The potential for increased soil compaction and rutting in the transmission line corridor was expected in only a limited or localized area of the project, and was therefore found to be a less than significant impact. Suggested mitigation includes restricting construction in or avoiding areas that are too wet.

The DSWTP Alternative would require reclamation of soils to prevent subsequent erosion. Success of such reclamation can be reduced in coarse to very coarse textured soils, soils with shallow depth to bedrock, and alkaline/saline soils. This impact is considered in the EIS/EIR to be less than significant with mitigation that would minimize vegetation removal and soil disturbance in areas with soil constraints.

The EIS/EIR finds that shrink and swell of expansive soils would have a less than significant impact on equipment foundations if expansive soils are excavated and replaced with backfill material. The analysis also concluded that future reclamation of disturbed areas would minimize soil erosion, resulting in a less than significant impact on erosion.

Overall, while the impacts of the DSWTP Alternative and the proposed project would be less than significant with mitigation, the potential impacts to soil and water resources from the DSWTP Alternative would be greater than for the proposed project due to 51 additional miles of tower and transmission line construction.

Traffic and Transportation

All roadways within the DSWTP area have relatively low traffic volumes (compared with their design capacities). Roadways located near the project area include: I-10, SR-78, SR-111, and SR-115. The western portion of the route near Devers Substation is slightly more congested because the area is more developed and more heavily populated.

There are seven airports located within the vicinity of the DSWTP project. The Blythe Airport is located in the northeast portion of the project area, approximately 1.2 miles west of the new substation/switching station on Hobsonway. Two minor airports include the Julian Hinds Pump Plant Airstrip and the Chiriaco Summit Airport, neither of which has a control tower. Three miles south of the DSWTP project is the Bermuda Dunes Airport. The Palm Springs International Airport is situated six miles south of the DSWTP project. Two airports are located southwest of the Midway Substation near Brawley and Calipatria in Imperial County: the Cliff Hatfield Memorial Airport (at Calipatria) and the Brawley Municipal-Airport. The project would not be expected to have any impact on the operation of airport facilities (BLM & IID 2003).

The UPRR railroad line is situated within the western portion of the DSWTP project area and runs along the eastern side of the Salton Sea and Coachella Valley beyond Indio in the north to Yuma, Arizona, and points east. The railroad is used extensively for transporting rail stock between California and points east.

Due to the number of vehicle trips for personnel and equipment movement during construction and operation, traffic volumes on area roadways would be expected to increase during the construction timeframe. This impact is considered in the EIS/EIR to be less than significant because of the limited traffic volumes on all roadways and the low number of construction-related trips per day.

Construction activities could create traffic delays and unsafe conditions for motorists, but the EIS/EIR determines that these impacts would be less than significant. The analysis suggests the use of temporary guard structures, short detour routes, and other traffic controls when necessary to reduce any potential impacts.

In addition, construction traffic may exceed the design weight capacities on local roadways, bridges, or culvert crossings, thereby damaging these roads or facilities. Although this impact was not found to be significant, mitigation would reduce this impact by requiring repair of any road damage either during or following construction.

Construction and operation of the DSWTP Alternative would comply with all LORS pertinent to traffic and transportation. This alternative would have a greater impact on traffic and transportation than the proposed transmission line because of the 51 additional miles of construction. Construction along the western portion of the route would be in more developed areas near Palm Springs, which could create greater traffic impacts during construction activity and temporary road closures because the area is more congested.

Transmission Line Safety & Nuisance

Induced Current and Shock. The project may cause an incremental increase in the risk of electric shock within the transmission line ROW; however, because the line would be in an existing corridor it would not create a new risk. In order to reduce these impacts to less than significant levels, suggested mitigation includes grounding nearby fences, and consulting with agricultural land managers to ensure that irrigation practices do not create a potential for water stream contact with overhead transmission lines. The first 2.9 miles of both the proposed project and this alternative would cross agricultural lands; however, the lands are undeveloped or abandoned orchards/jojoba. The DSWTP Alternative would have a similar risk of electric shock to that of the proposed project, but could be slightly greater with the construction of a 500 kV line

Effects on Pacemakers. An energized transmission line also creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the DSWTP Alternative would be similar to the proposed project and would not cause a

significant change to the baseline conditions within the existing transmission line corridor.

Blasting. Transportation and the use of blasting materials (if necessary) would be expected to create an increased risk of injury to workers and the public. The use of a licensed contractor with a valid California "Blaster License" pursuant to Cal-OSHA Article 8, Section 1550-1580 would mitigate risks to less-than-significant levels. Impacts between the proposed project and any alternative would be similar.

Magnetic Fields. Computer modeling software, including a program developed by Bonneville Power Administration, was used for the DSWTP EIS/EIR analysis to estimate existing electric and magnetic fields at points within the project area. The EIS/EIR used levels established by the American Conference of Governmental Industrial Hygienists (1999) and the International Commission on Non-Ionizing Radiation Protection (1998) as a benchmark for potentially significant impacts

The analysis found that the project could increase EMF levels within and in areas immediately adjacent to the ROW. Increases in EMF were found to occur within 300 feet of the centerline (IID & BLM 2003). As there would be few residences or other activity within this area, impacts from EMF levels are considered less than significant.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line safety hazards or nuisances. However, the length of the DSWTP Alternative line would be approximately 51 miles longer than the proposed project, resulting in the proposed project line as preferable in terms of the total length of the source of line fields to which individuals might be exposed.

Visual Resources

The 118-mile DSWTP Alternative transmission line would be located entirely within a BLM-designated utility corridor, and, as such, would be subject to the BLM VRM System. The alternative route is addressed in two segments in the following paragraphs.

Visual Setting of the Eastern End of DSWTP Alternative Corridor to Chuckwalla Mountains. The landforms in this area consist of flat valley bottoms, dry lake beds, and low rolling terrain with few interesting landscape features. Vegetation in this area is generally sparse and features little variety of contrast. Water features are not present in this region. Color variations in this area are subtle with little contrast. Adjacent scenery, comprised of distant mountain ranges, has little influence on the overall visual quality in this broad valley bottom setting. The scenery is quite common in this region. Finally, cultural modifications consisting of I-10 and various transmission lines, roads, and other linear features add variety, but are discordant with the natural landscape. This area of the alternative route from the eastern end of the DSWTP Alternative to the Chuckwalla Mountains was assigned an Interim VRM Classification of IV. The management objective for Class IV state that any contrast may attract attention and may be a dominant feature of the landscape in terms of scale, but should repeat the form, line, color, and texture of the characteristic landscape (IID & BLM 2003).

Visual Setting of the Central DSWTP Alternative Area from the Chuckwalla Mountains to the CVPA Planning Area. The landforms in this area consist of several mountain ranges that lie to the north and south of the I-10 corridor at varying distances. This landscape features desert mountain ranges, canyons, and buttes, featuring interesting geologic and erosional patterns. These mountain ranges are dominant in this landscape, but are not exceptional in character. Vegetation in this area exhibits some variety, but is comprised of just one or two major types or communities. Water features are not present in this region. Color variations in this area provide some variety, given the geology of the mountain ranges present; the color contrasts between soils, geology, and vegetation in this region are not a dominant scenic element. Adjacent scenery, comprised of adjacent mountain ranges, greatly enhances visual quality in this area. This scenery is quite common in the California Desert, and although it is distinctive, is not considered exceptional as viewed from the I-10 corridor. Finally, cultural modifications consisting of I-10 and various transmission lines, roads, and other linear features add variety, but are discordant with the natural landscape. This area of the alternative route from the Chuckwalla Mountains to the CVPA Planning Area is assigned an Interim VRM Classification of III in the EIS/EIR. The management objective for Class III states that changes to the basic elements caused by management activity may be evident but should remain subordinate to existing landscape (IID & BLM 2003).

There are very few rural residences and commercial businesses that would be sensitive to visual impacts associated with the DSWTP Alternative. There are areas utilized for designated and dispersed recreational uses in areas adjacent to the various project transmission routes. Special areas, consisting of designated wilderness areas, are located adjacent to, but outside of this alternative transmission line corridor.

There are a number of scenic roadways that traverse near the project area. Highway 62 is located west of the Devers Hill and Devers Substation and is designated as a State Scenic Highway. SR-111 is an eligible State Scenic Highway, but is not officially designated (U.S. DOT, State Scenic Highways 2002). The Bradshaw Trail is designated a National Scenic Byway (U.S. DOT, National Byways 2002) and a National Back County Byway by the BLM.

Visual Resources Impact Analysis. According to the DSWTP EIS/EIR, potential visual impacts during construction, such as from temporary spur roads and vegetation removal, would have only a short-term adverse visual impact, which would not be significant with mitigation, such as restoring both the original condition and grade to ground surfaces within the ROW; and revegetation of disturbed areas.

A total of nine Key Observation Points were analyzed, and the EIS/EIR finds that the visual contrast rating conforms with the BLM VRM classification. Therefore, the analysis found that the project would not conflict with BLM's VRM goals and objectives. The EIS/EIR finds that temporary and permanent visual impacts would be less than significant. Regardless, this alternative would be less preferred than the proposed BEPTL for visual resources because the DSWTP route would be substantially longer and the towers would be larger because the DSWTP would either be a double-circuit 230 kV or single-circuit 500 kV transmission line.

Waste Management

Similar to the proposed project and the Eagle Mountain Alternative discussion above, the project would need to implement a comprehensive program to manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes). The project would be required to comply with all LORS. The environmental impact of waste disposal would be less than significant, and similar to the proposed project.

Worker Safety & Fire Protection

Similar to the proposed project and the discussion for the Eagle Mountain Alternative above, worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, this alternative would have a similar impact in the areas of worker safety and fire protection to the proposed BEPTL.

Geology, Mineral Resources, and Paleontology

The DSWTP project would pass through the following hydrogeologic regions:

- **Palo Verde Mesa** consists of an alluvial-filled structural basin, ranging from a few feet in depth to more than 1,500 feet.
- The **Chuckwalla and Orocopia Valley basins** contain alluvial deposits formed from the fluvial erosion from surrounding mountains. The lithologies of these ranges consist of Mesozoic granite, Tertiary volcanics, Eocene marine deposits, Oligocene and Miocene non-marine sediments, Pre-Cretaceous metasedimentary, and Precambrian igneous and metamorphic rocks.
- The **Coachella Valley** consists of late Pleistocene and Holocene alluvial deposits from historical flooding of the Colorado River, and lacustrine deposits from the Salton Sea.
- The **Palo Verde Mountains** are composed of volcanic rocks and the claystone, siltstone, and sandstone of the Bouse Formation.
- The **Arroyo Seco Valley** is similar to other local basins.
- The **Chocolate Mountains** consist of Precambrian igneous and metamorphic complexes, Mesozoic granite rocks, Tertiary volcanic and intrusive rocks, and Plio-Pleistocene sedimentary deposits.
- The **Amos Valley** and the **East Salton Sea Basin** are composed of a sedimentary fill of sands and gravels, ranging up to 15,000 ft in thickness, and contain fault lines from the San Andreas Fault system.
- The **Algodones Dunes** consist of eolian sand deposits from the former Lake Cahuilla.

There has been no record of land subsidence in the northeastern portion of the DSWTP area on the Palo Verde Mesa. However, existing transmission lines passing south of the Chocolate Mountains have experienced a continuous natural subsidence near the Salton Sea.

According to the EIS/EIR, seismic activity could pose a significant risk in the DSWTP project area and could damage project facilities if they were not properly constructed. The western end of the DSWTP Alternative route would be in a zone of high peak accelerations for seismic activity. The eastern end of the alternative route is classified as Seismic Zone 3, while the remaining DSWTP area is classified as Zone 4. There are neither active nor potentially active faults in the Palo Verde Mesa area, and no Alquist-Priolo Earthquake Fault Zones. However, the DSWTP would cross two complex branches of the San Andreas Fault around the City of Palm Springs. Suggested mitigation in the Draft EIS/EIR includes avoiding tower sites within known fault zones, and construction of facilities using engineering strategies that would withstand projected ground shaking.

There is a 10-mile section of the DSWTP route that is characterized with a moderate to very high liquefaction potential, which is a located north of Indio. The remainder of the project area has a low liquefaction potential, except in areas of unconsolidated soil, which may pose a dry, liquefaction-like risk during an earthquake.

The majority of the DSWTP area would pass through valleys and mountain fringes where there is a low risk for landslides. The greatest landslide risk would occur along portions of the Palo Verde Mountains and the Chocolate Mountains.

The EIS/EIR found that hazards from unstable slopes and seismicity could affect roads used for construction. Also, some tower sites would be subject to geotechnical hazards that would need to be corrected prior to construction. However, impacts to roads or the local environment from excavations and fill were considered less than significant. Site-specific geologic conditions have yet to be determined and may create a significant disturbance on project facilities. The EIS/EIR suggested mitigation such as utilizing an engineering geologist to make recommendations for moving towers or roads, or identifying appropriate construction methods.

Mineral Resources. Although there are a number of mines in the DSWTP area, the Draft EIS/EIR states that the DSWTP would not create impacts to mines or mineral resources.

Paleontology. The EIS/EIR preparers reviewed the Regional Paleontologic Locality Inventory at the San Bernardino County Museum, and the EIS/EIR lists 66 previously recorded paleontologic resource localities that are within the general project area. However, many of these locations are outside of the area expected to be directly impacted by the project.

Excavation in conjunction with development of the DSWTP project has a high potential to adversely impact significant paleontologic resources. The EIS/EIR recommends that mitigation be implemented to prevent paleontologic impacts, including requiring that a

qualified vertebrate paleontologist develop a program that includes pre-construction surveys; monitoring; preparation, identification, and curation of recovered specimens; and preparation of a report of findings.

Conclusion. Although impacts would be less than significant, due to the alternatives greater length, there is a greater potential to impact geologic, mineral, or paleontological resources.

Transmission System Engineering

The DSWTP Alternative would result in construction of a new double-circuit 230 kV or single-circuit 500 kV transmission line from the Buck Boulevard Substation to the SCE Devers Substation. This alternative could accommodate both BEP and BEP II and potentially form the western portion of the proposed DPV2 line. From a long-range planning perspective, and optimization of the designated utility corridor and the state's interests, the DSWTP is strongly preferable to the proposed project, which has only moderate transmission capacity and would utilize important corridor space. However, absent negotiation with the DSWTP project sponsor, it would not be under the control of the applicant, which is a desirable, but not essential, goal. Should the BEPTL applicant negotiate with the DSWTP project proponent, conformity with the established planning/siting principle of "sharing" new transmission facilities would occur.

The design and construction of this alternative would have to be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

DEVERS-PALO VERDE 500 KV NO. 2 PROJECT ALTERNATIVE

ALTERNATIVE DESCRIPTION

The Devers-Palo Verde 500 kV No. 2 Project (DPV2) as proposed by Southern California Edison (SCE) includes a 230 mile new 500 kV line from the Harquahala Substation (in Arizona, near the Palo Verde nuclear power plant) to SCE's Devers Substation (in North Palm Springs, California). The project also includes upgrades to an additional 50 miles of 230 kV lines west of the Devers Substation. The 500 kV portion would be within or immediately adjacent to SCE's existing Devers-Palo Verde No. 1 (DPV) ROW.

This project is currently being evaluated by the CAISO and it is expected to be in the environmental permitting process with the California Public Utilities Commission (CPUC) as the CEQA lead agency and the U.S. BLM as the lead agency under NEPA starting in the first quarter of 2005.

This alternative would eliminate the need for the 67-mile Buck Boulevard to Julian Hinds component of the Proposed Project; however, the Buck Boulevard Substation to Midpoint Substation line would still need to be constructed in order for the Blythe generation to connect into the SCE transmission grid at the DPV corridor.

Because of the widely varying issues and local settings along the 277-mile corridor, the alternative transmission project is described in three distinct segments:

- New **500** kV transmission line: 230 miles from the Arizona Substations to Devers Substation.
- **Reconfigured** 230 kV line: 40 miles from Devers Substation to San Bernardino Junction at the western end of San Timoteo Canyon.
- **Reconductored** 230 kV line: two separate corridors, from San Bernardino Junction to SCE's San Bernardino Substation and from San Bernardino Junction to SCE's Vista Substation.

Each of the segments is described below.

Arizona Substations to Devers Substation (New 500 kV Line)

The new 500 kV transmission line would follow the existing DPV corridor from the Arizona substations to Blythe. The existing corridor in Arizona is several miles south of I-10 for much of the route and then crosses I-10 twice within the 50 miles west of the Palo Verde Nuclear Generating Station. Approximately 106 miles long, the Arizona segment is almost entirely on BLM land. There are no apparent developed areas along this segment, although the line would pass through the Kofa Wildlife Refuge.

The California portion of the new 500 kV line extends for approximately 120 miles, partially on federal Bureau of Land Management (BLM) land and partially on private land. The line would pass through agricultural lands south and east of Blythe. In this segment as in Arizona, SCE plans to install towers for a new 500 kV transmission line, located one-for-one adjacent to the existing 500 kV towers. The new towers would be about 300 feet from the existing ones and would use existing access roads extended to the new towers.

SCE already holds an easement from BLM for the DPV2 line (it was granted at the time of approving the existing DPV No. 1 500 kV line), but BLM requires that the NEPA documentation be updated since the endangered species situation has changed since the late 1980's when the original EIS was completed.

Devers Substation to San Bernardino Junction (Upgrade 230 kV Line)

This segment is approximately 40 miles long, and is within central and western Riverside County. In this segment, there are currently three sets of transmission towers: one double-circuit steel lattice 230 kV tower and two single-circuit towers (steel or wood; each with the phases arranged horizontally). SCE plans to remove the two single-circuit towers and replace them with a single double-circuit steel lattice tower that looks like the existing double-circuit lattice tower. As such, it is anticipated that the corridor would change from three towers to two towers, but the new tower would be taller than either of the two removed.

The upgrade segment would begin at the Devers Substation, less than one mile east of Highway 62 and just north of Dillon Road, and cross Highway 62 roughly one mile north of

I-10. The corridor continues west through wind farms, the Morongo Reservation, and the foothills of the San Bernardino Mountains. From Devers Substation to the outskirts of Banning, the transmission line would be primarily within open space with few nearby residences.

There are residential areas in this segment south of the corridor from the east end of Beaumont at Cherry Avenue (where a trailer park is adjacent to the south edge of the corridor). Passing about two miles north of central Beaumont and I-10, the corridor continues due west, and just north of Oak Valley Parkway. Through these new housing developments, the corridor is wide and well defined. Part of the corridor has been landscaped as a park. At about 10 miles from the west end of the canyon, the corridor passes through new housing developments between Cherry Valley and Beaumont, then crosses I-10, continues west-southwest, and crosses San Timoteo Canyon Road, Through much of San Timoteo Canyon, the corridor is not visible or barely visible on the ridgelines south of the canyon. After leaving the west end of the canyon, the lines diverge from each other at San Bernardino Junction, south of Loma Linda in inaccessible open space.

San Bernardino Junction to San Bernardino Substation and Vista Substation (Reconductor 230 kV Line)

This westernmost segment includes the most intensely developed portions of the DPV2 alternative route, and has portions in San Bernardino and Riverside Counties. In this segment, SCE proposes to reconductor the existing lines on existing 230 kV towers. Some tower upgrades, such as making the existing towers taller, may be needed in this segment.

San Bernardino Junction is the point at which the 230 kV transmission lines from Devers Substation separate to go to the two different substations. San Bernardino Junction itself is not visible from public streets, but is located in the hills south of Loma Linda.

San Bernardino Junction to San Bernardino Substation

The San Bernardino Substation is on the southeast side of the City of San Bernardino, several miles north of the I-10. It is in an open space/light industrial area, immediately east of the Mountainview Power Plant, where a new generating unit is under construction adjacent to the existing unit.

The existing transmission corridor from San Bernardino Junction to the substation is approximately four miles long, due north from the San Bernardino Junction. This segment mostly consists of two 230 kV lattice towers in a wide corridor of agricultural land. However, there are residences adjacent to the corridor in several areas: (a) new homes are being built immediately adjacent to the corridor near Mission Road; (b) north of Beaumont Avenue where the corridor has homes on both sides and a park has been recently constructed within the corridor, and (c) its southernmost segment between Beaumont Avenue and San Timoteo Wash.

San Bernardino Junction to Vista Substation

The transmission corridor from San Bernardino Junction to the Vista Substation is approximately five miles long. The Vista Substation is southwest of San Bernardino and due west of the San Bernardino Junction. Much of the corridor is in the hills south of Loma Linda and is not visible from public roads. The westernmost 1.5 miles, nearest the Vista Substation, goes through the City of Grand Terrace and passes several residences along Grand Terrace Road, east of Interstate 215 (I-215). The lines are also adjacent to an elementary school, church, and senior center along Grand Terrace Road, near Mt. Vernon Avenue. The lines cross I-215 at the substation. There are two residences northwest of the substation on Grand Terrace Road and a trailer park across from the substation entrance on Newport Avenue.

RATIONALE FOR CONSIDERATION

This alternative is being considered for the following reasons.

- This project would eliminate the need for the BEPTL because it would provide adequate **transmission** capacity from the Blythe area to SCE's major substations. The temporary and permanent impacts associated with 67 miles of tower construction and operation for the BEPTL would not be required.
- It would **reduce** corridor clutter by serving all transmission need in a single line, rather than requiring several lines.
- It would **meet** the basic project objective of allowing sale of all generated electricity into the CAISO system.
- It would **allow** for a significant increase of imported generation.
- It would likely provide capacity for the proposed BEP II as well as BEP I.

ENVIRONMENTAL AND ENGINEERING ASSESSMENT FOR DPV2 ALTERNATIVE

Air Quality

Construction emissions associated with the project would be created by on-site and off-site mobile sources. On-site construction emissions typically consist of exhaust emissions from heavy-duty diesel- and gasoline-powered construction equipment, as well as fugitive particulate matter from soil disturbed during ground disturbing operations (e.g., grading, excavating, etc.).

Off-site exhaust emissions during construction would result from workers commuting to and from the job site, as well as from trucks delivering material and equipment to the staging area(s). Helicopters may also be used to transport material and equipment to the construction sites and to assist during stringing activities.

Each local air quality district in California establishes its own significance criteria for environmental review of projects based on the specific conditions within each air basin. From east of Devers to the western end of the line at San Bernardino and Vista Substations, the DPV2 project would be completely within the South Coast Air Basin.

Like the proposed BEPTL project, the segment from Blythe to Devers is partially within South Coast and partially within the Mojave Desert Air Basin. The segment of the alternative route that is located east of Blythe would be within La Paz and Maricopa Counties, Arizona, where the project would be on federal BLM land, but the Maricopa County Environmental Services Department, Air Quality Division may retain an interest in managing sources of air pollution.

The DPV2 Alternative has the potential to create significant air emissions during construction activities, which are estimated to last for up to three years. However, with implementation of standard mitigation, air emissions would likely be controlled to levels where impacts would be less than significant. During project operation emissions generated by routine preventive maintenance and inspection activities would be minimal. Due to the much longer route and duration of construction, overall air quality impacts would be substantially greater with the DPV2 Alternative than for the proposed project. However, construction of this project could reduce cumulative impacts by eliminating the need for other projects in the same transmission corridor. Overall, like the proposed project and the alternative itself, impacts would be less than significant after implementation of required mitigation.

Biological Resources

The DPV2 Alternative would cross numerous drainages under the jurisdiction of the U.S. Army Corps of Engineers and CDFG, as well as habitat for a number of federal and State listed sensitive plant and wildlife species.

Eastern Substations to Blythe

This segment of the DPV2 Alternative transmission line would pass through the western portion of the Sonoran desert in Arizona. This area of the Sonoran desert is dominated by the Lower Colorado River Valley subdivision with the higher elevations containing the Arizona Upland subdivision. Although it is a dry, harsh environment, many well-adapted plant and animal species thrive in this region. A portion of the route is within Kofa National Wildlife Refuge, administered by the U.S. Fish and Wildlife Service. Federally listed threatened and endangered species in this area include many water reliant species, such as the desert pupfish, the bald eagle, the southwestern willow flycatcher, and the Yuma clapper rail. The Mexican spotted owl is also protected in the eastern end of this segment. However, with the exception of the Colorado River area, most of the DPV2 corridor does not contain riparian habitat communities needed for these species. Additionally, a large part of the corridor is under BLM administration; therefore, all BLM Sensitive Status Species would need to be addressed and mitigated for, including the Sonoran desert tortoise. Plant species protected under the Arizona Native Plant Law by the Arizona Department of Agriculture would also need to be mitigated for within the corridor.

Raptor electrocution and power line collisions in the Colorado River area may occur. Standard guidelines for avoiding such impacts are provided for the power industry in a publication entitled Suggested Practices for Raptor Protection on Power Lines. This publication was based on the results of research efforts by the Edison Electric Institute and the Raptor Research Foundation and was last updated in 1996. Although these

recommendations and publications are available, the problem has not been resolved and raptors are still dying due to electrocutions and collisions with power lines. However, mitigation measures as suggested by the Raptor Research Foundation and Edison Electric Institute would minimize the number of raptors killed until further research and technology has been developed. The implementations of these guidelines would help avoid harm to raptors, which are protected by the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act.

Blythe to Devers Substation

This segment crosses the desert scrub and wash plant communities of the Sonoran Desert supporting numerous sensitive plant and wildlife species including those mentioned above and others, which are the focus of the Coachella Valley California Desert Conservation Area (CDCA) Plan Amendment and the ongoing Coachella Valley Multiple Species Habitat Conservation Planning (HCP) effort. Mitigation measures would be necessary to protect biological resources, especially in the following protected areas:

- **Coachella Valley Preserve** (jointly owned and managed by the BLM, U.S. Fish and Wildlife Service, CDFG, and the Nature Conservancy). Coachella Valley Preserve was established by the original habitat conservation plan to provide habitat for the Coachella Valley fringe-toed lizard; and
- **Joshua Tree National Park** (administered by the National Park Service [NPS]). Joshua Tree National Park provides diverse habitat spanning both Colorado (Sonoran) and Mojave Deserts.

The majority of this segment is coincident with the project corridor analyzed in the DSWTP Draft EIS/EIR and in the Petition for the proposed BEPTL project.

Devers Substation to San Bernardino Junction

The western portion of this segment crosses steep to rolling hills along the southern rim of San Timoteo Canyon. The segment crosses numerous jurisdictional drainages most of which are primary or secondary tributaries to San Timoteo Creek. Some of the drainages support Riversidean alluvial fan sage scrub and habitat for San Bernardino Merriam's kangaroo rat. Upland vegetation communities for this portion of the segment include non-native grassland potentially supporting Stephens' kangaroo rat, Riversidean sage scrub potentially supporting California gnatcatcher on the lower slopes, and chaparral on the ridges and higher slopes. Much of this portion of the segment is in Riverside County and covered by the Western Riverside Multiple Species HCP.

Further east, the corridor crosses San Timoteo Creek. At or near the crossing, the creek may support San Bernardino kangaroo rats on the upper benches. The plant community in this reach of the creek is primarily cottonwood-willow riparian forest/southern willow scrub and may also support least Bell's vireo, southwestern willow flycatcher and other sensitive riparian-breeding birds. However, the alternative project would likely be able to avoid direct impacts (including equipment crossing other than at the existing bridge) and indirect impacts may be avoided by completing work on this segment outside the breeding season so focused surveys for least Bell's vireo and

other riparian-breeding birds may not be required at this location. Vegetation communities and wildlife habitat from the San Timoteo Creek crossing to the I-10 crossing are similar to those described above for the western portion of the segment.

North of I-10 in the Cherry Valley and Beaumont areas, the corridor crosses new residential areas and disked fields before traversing the rolling hills of the San Bernardino Mountain foothills which comprise mostly non-native grassland, some small patches of coastal sage scrub, and, on the higher ridges, chaparral. Generally speaking, the coastal sage scrub in this area is outside the recently known range of California gnatcatchers and the area is also outside the range of Stephens' kangaroo rat and the San Bernardino kangaroo rat. The corridor continues in these plant communities until reaching the desert washes and creosote bush scrub of the westernmost portion of the Colorado Desert. This portion of the segment crosses a number of large ephemeral drainages and desert washes and a mesquite grove on the Morongo reservation. This portion of the route ends in the westernmost portion of the Coachella Valley, in or near habitat for a number of sensitive species, including (but not limited to) Coachella Valley milkvetch, desert tortoise, and Coachella Valley fringe-toed lizard.

San Bernardino Junction to San Bernardino Substation and Vista Substation

Because this segment of the DPV2 Alternative would include only reconductoring and minimal tower upgrades, the work may be performed outside the breeding season for California gnatcatcher (March 15 to June 30) and so impacts would be less than significant. Several drainages under the jurisdiction of the Corps and CDFG occur in this segment.

San Bernardino Junction to San Bernardino Substation. The majority of this segment is surrounded by development and agriculture. The southernmost reach near the San Bernardino Junction comprises non-native grassland that may be suitable habitat for Stephens' kangaroo rat and some Riversidean sage scrub that represents marginal habitat for the California gnatcatcher. The northernmost portion of this segment, near the substation, is adjacent to the Santa Ana River. Although San Bernardino Merriam's kangaroo rat is known to exist in the riparian Santa Ana River habitat nearby, the habitat immediately surrounding the substation has been developed/disturbed, and the project is unlikely to affect habitat for this species.

San Bernardino Junction to Vista Substation. The eastern two thirds of this segment comprises a mix of chaparral on the higher ridges, including Riversidean sage scrub, which is potentially suitable of the California gnatcatcher on the lower slopes, and non-native grassland, which could support Stephens' kangaroo rat.

Conclusions

Overall this alternative would temporarily and permanently destroy a much greater area of biological habitat than the proposed project due to its greater length and its use of 500 kV lattice towers, which would have a larger footprint. In addition, the DPV2 Alternative would require a crossing of the Colorado River, in an area where there is raptor collision potential. However, the construction of the DPV2 Alternative could

reduce cumulative impacts resulting from construction of multiple lines within the DPV corridor.

Cultural Resources

The DPV2 Alternative would be subject to both CEQA and Section 106 of the National Historic Preservation Act. Generally speaking, Section 106 standards are more stringent than those of CEQA and Section 106 requires Native American consultation. Native American involvement in CEQA projects is necessary in order to identify all the cultural resources and to provide additional information regarding significance when cultural resources are evaluated. For Section 106, the California Office of Historic Preservation (SHPO) is the primary administrator of the regulation process. That is, as lead governmental agencies in the project, BLM and Western receive concurrence from SHPO regarding their proposed cultural resources management measures in order to achieve compliance with Section 106. Under CEQA, the lead state agency, in this case the CPUC (to whom SCE will submit its application), determines significance and is responsible for ensuring mitigation.

This section describes potential impacts and mitigation measures, but an accurate determination would require a complete records search and a survey of the alternative corridor in order to completely assess impacts on cultural resources. Ordinarily an alternatives level of analysis under CEQA would require a records search. If this route was to be built Native American consultation would be necessary to include affected tribes.

San Bernardino Substation and Vista Substation to San Bernardino Junction

The western and northernmost portion of this segment proceeds through residential developments and agricultural lands. Most homes along the transmission line were probably built less than 50 years ago and therefore would not be considered significant cultural resources. For both CEQA and Section 106 regulations, 50 years is the minimum age requirement for recommending a structure as an important resource. However, guidance from the OHP recommends that 45 years be used as the age for assessing cultural resources. There is also a provision in law for consideration of cultural resources that are less than 50 years of age and are exceptional. However, if structures older than 50 years are present along the project corridor, they would require documentation and subsequent architectural/historical evaluation. Although the project would not likely threaten the physical integrity of any structure, these structures should be evaluated to assess whether addition of new facilities would compromise the visual qualities and/or overall setting of the building. This approach applies to both CEQA and Section 106 compliance.

Agricultural lands may also contain historical elements (e.g., 19th and early 20th century homesteads, irrigation canals, etc.) and occasionally prehistoric remains, but in this area they have been subject to long-term ground disturbance and typically lack significant cultural resources. In addition, agricultural disturbance does not usually exceed a depth of four feet. Excavation that exceeds the depth of previous agricultural disturbance may impact intact archaeological sites. The eastern portion of this segment proceeds through the hills south of Loma Linda, where there is a much higher potential to encounter archaeological sites. If buildings along this route may be impacted by the project they

need to be evaluated for eligibility to the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR). Since this is a fairly developed area, there is a potential for impacts to historic built environment resources. In general reconductoring is preferable to installation of new poles and line because less ground disturbance is expected. If this route were chosen, a records search and cultural resources survey would be necessary to ensure avoidance or other mitigation, if necessary. During the permitting phase of the Mountainview Power Plant, numerous historic cultural resources were identified. It is not likely that reconductoring existing powerlines would impact these resources. However, if existing power lines are more than 45 years old they should be evaluated for eligibility to the NRHP or CRHR because reconductoring would be an impact.

San Bernardino Junction to Devers Substation

Significant architectural resources do not appear to be a concern in this segment, since the corridor passes through mainly recent residential/commercial areas or undeveloped lands. However, the age of built environment resources would need to be verified prior to dismissing the possibility of impacts. The presence of both prehistoric and historical resources may be likely in San Timoteo Canyon and other areas that lie near a water source. Areas in near San Timoteo Canyon may have been used as a World War II training ground and may contain historical material from that period.

If this line were to be permitted, a records search and cultural resources survey would be necessary to ensure that avoidance or mitigation was conducted if cultural resources were identified. It appears that there are numerous buildings along this route. Historic buildings and structures could be impacted by ground disturbance and construction activities. This route would pass through the Morongo Indian Reservation. If the Indians object to the route, this location might be a problem.

Devers Substation to Arizona Substations

As mentioned above, the segment passes through federal lands, and the presence of areas of religious or cultural significance to Native Americans becomes an important issue in this segment. The initial phase of consultation involves contacting the Native American Heritage Commission for the names of Native American representatives in the project area as well as the locations of Traditional Cultural Properties. These representatives will then be contacted (usually with letter correspondence followed by a phone call) and solicited for any comments or concerns they may have about the project. It is likely that several historical and prehistoric sites are located near the Colorado River.

The Arizona portion of the DPV2 Alternative would pass through the western desert of Arizona, an area claimed as a traditional use or an ancestral area by Native American tribes including the Mohave (Colorado River Indian Tribes), Fort Mohave, Prescott-Yavapai, the O'odham and Pee Posh (Salt River Pima-Maricopa Indian Community, Gila River Indian Community, Ak-Chin Indian Community, and the Tohono O'odham Nation), and the Hopi Tribe (per the Arizona State Historic Preservation Office). Documented human use of the area extends back some 11,000 years to the end of the Pleistocene and early Holocene. Paleoindian, Archaic, and Ceramic period peoples occupied and traversed the area, leaving behind an array of artifact and site types. The

proposed route passes through two Ceramic period culture areas, the western fringes of the Hohokam and the Yuman (Patayan). The majority of prehistoric Native American sites encountered will likely be associated with the Yuman occupation of the area. Site types encountered may include isolated artifact occurrences (e.g., pottery, stone tools, projectile points) and features (e.g., trail segments, cleared areas [sleeping circles], cairns) and sites of various sizes. The sites in the area typically consist of multiple cleared areas and associated artifacts (pottery, flaked stone, and ground stone). These occur in area of desert pavement. Also found in the area are intaglios, designs cleared in the desert pavement in the form of humans, animals, or geometric forms. It is also likely that historical period Euroamerican sites are present. The area was widely explored by miners and it served as a major transportation corridor (early Spanish explorers and Euroamericans). As such, historical trails, roads, and railroad corridors and associated features may also be encountered.

Conclusion

There is the potential for the DPV2 Alternative to create significant impacts to historic, Native American, and archaeological resources. After proper surveys and records searches are completed, appropriate mitigation measures would need to be developed. Once site locations are identified and evaluated for significance, it might be possible to plan for avoidance. Extensive cultural resources and Native American monitoring would need to be conducted to identify newly discovered sites during ground disturbance and construction. It is anticipated that mitigation would successfully reduce impacts to less than significant levels, but this cannot be stated with certainty since a complete assessment of resources has not been completed.

Hazardous Materials

Preexisting soil contamination could affect construction workers and the public during project construction. This is especially a concern for substation work and tower/pole locations where excavation may occur in urban, populated areas of the corridor (along the western portion) where historic or current uses may have resulted in soil contamination. If contamination exists, appropriate procedures must be implemented for protection of workers and groundwater quality. Because much of the project route would be through the rural or undeveloped areas, only very sparse commercial or industrial activities could contribute to soil or groundwater contamination. Limited potential for contamination could occur from current and historic pesticide and herbicide use along the alignment. In the urban and suburban areas, especially in San Bernardino County and central and western Riverside County, commercial (e.g., gas stations and dry cleaners) and light industrial uses may have resulted in localized soil and groundwater contamination.

A complete search of public records should be conducted to identify known areas of contamination. In addition, mitigation should be developed to define procedures that would be used if contaminated soils or groundwater were encountered during construction.

Mitigation measures would be developed to protect construction workers and the public. In particular, pre-construction research and testing of known or suspected

contamination sites would be essential to define conditions that may be encountered during construction. All hazardous materials used and stored during construction would need to be handled in an appropriate manner consistent with regulations. Usually, use of mitigation measures such as these would reduce potential for impacts to less than significant levels.

Land Use

Physical land use impacts would occur if construction activities and occasional activity for operation and maintenance of the project would disrupt access to some uses, especially residential, commercial, and recreational areas. There are also some portions of the DPV2 Alternative corridor that pass through agricultural land uses. In addition, there some areas along the project route where SCE would need to acquire additional property rights, which would further restrict existing land uses. Measures for land use impacts may also be identified in the analyses for other issue areas such as air quality, noise, visual resources, transportation, and public heath and safety. By replacing the proposed project, this alternative would also eliminate multiple transmission lines within the same corridor and their associated cumulative impacts, which is a stated goal of the BLM.

Eastern Substations (Arizona) to Blythe

This segment of the DPV2 Alternative would follow the existing DPV 500 kV No. 1 transmission line. **ALTERNATIVES Table 3** shows the affected jurisdictions and relevant plans from the Arizona switchyards (Hassayampa and Harquahala) to Blythe.

ALTERNATIVES Table 3.
Potentially Affected Jurisdictions/Communities between Arizona Switchyards (Hassayampa and Harquahala) and Blythe

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
Ehrenberg, La Paz County[1]		
La Paz County Comprehensive General Plan, amended 2004	Residential Commercial Highway-oriented development	Colorado River Trailer parks Campgrounds
Quartzsite, La Paz County[1]		
La Paz County Comprehensive General Plan, amended 2004	Residential Highway-oriented development	Trailer parks Campgrounds
Yuma Proving Ground, La Paz County & Yuma County		
YPG Installation Natural Resources Management Plan, 1979; YPG Annual Hazardous Waste Minimization Plan, 1992; YPG Storm Water Pollution Prevention Plan, 1993; YPG, Army Hazardous Waste Minimization and Pollution Prevention Plan, 1993; Arizona Pollution Prevention Plan for YPG, 1994; Storm Water Discharge from Associated Industrial Activities, Pollution Prevention Plan, YPG, 1994; YPG Environmental Management Plan, updated 1994; YPG Historic Preservation Plan, Phases 1, 2, & 3, 1995; NRCS & YPG, Draft Natural Resources Management Plan, 1995; YPG Spill Prevention, Control and Countermeasures Plan and Installation Spill Contingency Plan, 1997	Military Open space	Restricted area
Kofa National Wildlife Refuge, La Paz County and Yuma County		

ALTERNATIVES Table 3.
Potentially Affected Jurisdictions/Communities between Arizona Switchyards (Hassayampa and Harquahala) and Blythe

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
Kofa National Wildlife Refuge & Wilderness and New Water Mountains Wilderness Interagency Management Plan and Environmental Assessment, 1996	Recreational resource Open space	Wilderness area Campgrounds
Tonopah, Maricopa County[1]		
Maricopa County 2020 Eye to the Future, Comprehensive Plan, revised Aug. 2002; Tonopah/Arlington Area Plan, Sept. 2000	Recreational resources Commercial	Trailer park Schools
Wintersburg, Maricopa County[1]		
Maricopa County 2020 Eye to the Future, Comprehensive Plan, revised Aug. 2002; Tonopah/Arlington Area Plan, Sept. 2000	Highway-oriented development	Trailer park
Arlington, Maricopa County[1]		
Maricopa County 2020 Eye to the Future, Comprehensive Plan, revised Aug. 2002; Tonopah/Arlington Area Plan, Sept. 2000	Highway-oriented development	School
Palo Verde, Maricopa County[1]		
Maricopa County 2020 Eye to the Future, Comprehensive Plan, revised Aug. 2002; Tonopah/Arlington Area Plan, Sept. 2000	Highway-oriented development	Palo Verde Generating Station
Bureau of Land Management		
Lower Gila South Resource Management Plan, 1988	Public lands Recreational resources	Preserve

[1] Denotes unincorporated portions of the respective county.

There is a minimal amount of development along the corridor between the Arizona substations and Blythe. This segment is approximately 106 miles long, and is situated almost entirely on BLM lands. The route traverses unincorporated areas of La Paz and Maricopa Counties in Arizona. Local land use types are limited to the Yuma Proving Ground and the Kofa National Wildlife Refuge. Unlike the segments in California, sensitive land uses such as schools, churches, residences, or agriculture would not be in close proximity to the route.

In this segment, the majority of DPV2 Alternative impacts would be to recreational resources. The route would traverse very little urbanized land, but would cross the Colorado River and the Kofa National Wildlife Refuge (administered by the U.S. Fish and Wildlife Service), both of which are regionally significant recreational resources. In addition, the new 500 kV transmission line would potentially result in incompatibilities with certain land use types, such as habitat restoration areas and recreation areas (i.e., BLM campgrounds).

Although the DPV2 Alternative would be implemented within an existing transmission line ROW in this segment, the potential exists for significant impacts to recreational activities on the Colorado River and within the Kofa National Wildlife Refuge. Short-term construction-related impacts such as noise, dust, and access restrictions could affect the availability and quality of these recreational facilities, and new, larger transmission line structures in or near these recreational resources could cause a

permanent deterioration of the quality of the recreational opportunities. The recreational opportunities offered by the Kofa National Wildlife Refuge and lands along the Colorado River rely upon the natural beauty of the area. Mitigation measures that would be developed could include minimizing disruptive construction activities on weekends, providing adequate alternative access to the affected facilities, creating additional access points, or development of alternate recreational components in areas not affected by the DPV2 Alternative (e.g., additional trails outside the viewshed of the proposed project).

Blythe to Devers Substation

This segment would follow the existing DPV 500 kV No. 1 transmission line, with new towers being located approximately 300 feet away from existing towers.
ALTERNATIVES Table 4 shows the affected jurisdictions and relevant plans for the portion of the DPV2 Alternative route from Blythe to Devers Substation.

ALTERNATIVES Table 4.
Potentially Affected Jurisdictions/Communities between Devers Substation and Blythe

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
Bureau of Land Management, Riverside County		
California Desert Conservation Area Plan, 1980; California Desert Conservation Plan Amendment for the Coachella Valley, December 2002; Final Administrative Draft of the Coachella Valley Multiple Species Habitat Conservation Plan, Dec. 2003; Northern and Eastern Colorado Desert Coordinated Management Plan, 2002; The Santa Rosa and San Jacinto Mountains National Monument Act of 2000	Public Lands, recreational resources	Coachella Valley Preserve California Desert Conservation Area Northern and eastern Colorado Desert Santa Rosa and San Jacinto Mountains National Monument
North Palm Springs, Riverside County[1]		
County of Riverside General Plan, Oct. 2003; Western Coachella Valley Area Plan, Oct. 2003	Scattered residential	Trailer park
Desert Haven, Riverside County[1]		
County of Riverside General Plan, Oct. 2003; Western Coachella Valley Area Plan, Oct. 2003	Scattered residential	Desert Dunes Golf Course
Cathedral City, Riverside County[1]		
City of Cathedral City Comprehensive General Plan, adopted July 2002; Western Coachella Valley Area Plan, Oct. 2003	South of I-10: Residential Recreational resources Commercial Public facilities	Middle school
Agua Caliente Indian Reservation, Riverside County[2]		
Bureau of Indian Affairs policies	Scattered residential Commercial	Resort & mineral hot springs spa Agua Caliente Casino
Thousand Palms, Riverside County[1]		
County of Riverside General Plan; Western Coachella Valley Area Plan, Oct. 2003	Residential Recreational resources	Community park Community center Tri-Palm Estates Country Club Ivey Ranch Country Club
Sun City Palm Desert, Riverside County[2]		
County of Riverside General Plan; Western Coachella Valley Area Plan, Oct. 2003	Residential Recreational resources (golf community)	Mountain Vista Golf Course Proposed second gold course
Indio, Riverside County[1]		

ALTERNATIVES Table 4.
Potentially Affected Jurisdictions/Communities between Devers Substation and Blythe

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
City of Indio General Plan 2020	Residential Commercial Recreational Resources	Indio Golf Club American Canal Bermuda Dunes Airport
Coachella, Riverside County[1]		
City of Coachella General Plan 2020, amended Oct. 2001	Residential	Landmark Golf Club American Canal
Chiriaco Summit, Riverside County[2]		
County of Riverside General Plan, Oct. 2003; Eastern Coachella Valley Area Plan, Oct. 2003	Scattered Residential	Chiriaco Springs Airport Hayfield Lake
Joshua Tree National Park, Riverside County		
Joshua Tree National Park General Management Plan; Joshua Tree National Park Backcountry and Wilderness Management Plan	Recreational Resources	National Park Campgrounds
Desert Center, Riverside County[1]		
County of Riverside General Plan, Oct. 2003; Desert Center Area Plan, Oct. 2003	Scattered residential	Lake Tamarisk Golf Club
Nicholls Warm Springs, Riverside County[2]		
County of Riverside General Plan, Oct. 2003; Palo Verde Valley Area Plan, Oct. 2003	Residential Scattered commercial	Blythe Airport Mesa Verde
Blythe, Riverside County[1]		
City of Blythe General Plan; Palo Verde Valley Area Plan, Oct. 2003	Residential Commercial Highway-oriented development	Elementary school Miller Park

[1] Denotes incorporated city.
[2] Denotes unincorporated portions of the respective county.

This segment of the alternative route is approximately 120 miles long, sparsely populated, and much less urbanized than the two segments to the west. The majority of this segment passes through BLM lands and a number of communities in unincorporated Riverside County. The area is characterized predominantly by open space with resiential land use types and public facilities scattered along the segment, while the eastern portion of the segment near the City of Blythe is agricultural in character. The DPV2 Alternative would pass adjacent to and through a portion of Joshua Tree National Park. In addition, the segment would potentially create impacts to the Agua Caliente Indian Reservation, which is located southeast of the City of Palm Springs near the community of Thousand Palms.

Sensitive land uses in the area that could be impacted by this alternative include:

- Scattered residential land use near the corridor between Devers and Indio;
- Trailer park located in North Palm Springs;
- A middle school in Cathedral City; and
- Agriculture designated as Important Farmland south of Blythe.

The urbanized portion of the segment near Palm Springs passes near or over many golf courses, and associated facilities and clubs. In addition, the DPV2 Alternative would cross the following notable recreational resources:

- Coachella Valley Preserve (jointly administered by the BLM). Coachella Valley Preserve allows recreational wildlife viewing and serves as an important habitat link; and
- Joshua Tree National Park (administered by the NPS). Joshua Tree National Park is a desert resource of international significance, whose transition between the Colorado (Sonoran) and Mojave Deserts serves as a haven of biological diversity.

Construction and operation of the DPV2 Alternative east of Joshua Tree National Park in California would be unlikely to substantially affect recreational resources due to the remoteness of the route. Mitigation that minimizes disruptive construction activities on weekends and provides adequate alternative access to the impacted facilities would be effective in addressing any recreation impacts encountered in this area or in the Palm Springs region. Impacts to the Coachella Valley Preserve could be reduced or avoided through mitigation measures implemented from the visual and biological resources analyses, as well as through measures ensuring public access to the preserve for recreational purposes. However, significant impacts requiring specialized mitigation could occur at or near Joshua Tree National Park.

There are three airports located in the vicinity of this portion of the route, where applicable plans would include the Airport Land Use Compatibility Plan for Riverside County, the Eastern Coachella Valley Area Plan, the Palo Verde Valley Area Plan, and the Federal Aviation Regulations (Part 77, Section 77.13 ff).

Construction activities in this area could disrupt access to residential and recreational uses. The proposed 500 kV transmission line could also potentially create incompatibilities with sensitive land use types noted in the table above, such as a school, habitat restoration areas, recreation areas, and agriculture.

The eastern portion of this segment, south of the City of Blythe, is predominantly agricultural. The DSWTP Draft EIS/EIR found that the existing corridor, which is the same as the DPV2 Alternative corridor in this segment, would cross parcels designated as Important Farmland, including two parcels subject to the Williamson Act, which could convert farmland to a non-agricultural use.

Devers Substation to San Bernardino Junction

This segment would be entirely within an existing SCE transmission corridor. **ALTERNATIVE Table 5** presents the applicable plans and policies, affected land use types, and notable land uses applicable for each community along the DPV2 Project Alternative route from Devers Substation to San Bernardino Junction.

ALTERNATIVES Table 5.
Potentially Affected Jurisdictions/Communities between San Bernardino Junction to Devers Substation

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
Redlands, San Bernardino County[1]		
City of Redlands 1995 General Plan, amended 1997	Scattered residential	Railroad tracks Redlands Community Hospital
Norton Younglove Reserve, Riverside County		
Riverside County Integrated Project Multiple Species Habitat Conservation Plan, adopted October 2003	Small residential developments	Boy Scout camp
Calimesa, Riverside County[1]		
City of Calimesa General Plan The Pass Area Plan, October 2003	Recreational resources Scattered residential	SCPGA Golf Club at Oak Valley Desert Lawn Memorial Park
Beaumont, Riverside County[1]		
City of Beaumont General Plan; The Pass Area Plan, October 2003	Residential Public facilities	Trailer park Elementary school, Beaumont High School and Junior High Rangel Park Stewart Sunnyslope Cemetery Oak Valley Golf Club
Banning, Riverside County[1]		
City of Banning General Plan; The Pass Area Plan, October 2003	Residential Public facilities	Sunlakes Village San Gorgonio Memorial Park Sylvan Park Gilman Historic Ranch Banning High School Middle School Banning Municipal Airport
Morongo Indian Reservation, Riverside County[2]		
Bureau of Indian Affairs policies	Scattered residential Public facilities	Desert Hills Premium Outlet Casino Morongo School
San Gorgonio, Riverside County[2]		
County of Riverside General Plan, Oct. 2003; Western Coachella Valley Area Plan, Oct. 2003	Scattered residential north of I-10	Rest area
Bureau of Land Management, Riverside County		
California Desert Conservation Area Plan, 1980; California Desert Conservation Plan Amendment for the Coachella Valley, Dec. 2002; Final Administrative Draft of the Coachella Valley Multiple Species Habitat Conservation Plan, Dec. 2003; Northern and Eastern Colorado Desert Coordinated Management Plan, 2002	Public lands Recreational resources	California Desert Conservation Area Northern and eastern Colorado Desert
Whitewater, Riverside County[2]		
County of Riverside General Plan, Oct. 2003; Western Coachella Valley Area Plan, Oct. 2003	Scattered residential	Whitewater Canyon Recreation Area Scenic Highway – Route 62 North of I-10 Palm Springs Railroad Station
Painted Hills, Riverside County[2]		
County of Riverside General Plan, Oct. 2003; Western Coachella Valley Area Plan, Oct. 2003	Scattered residential	Scenic Highway – Route 62 North of I-10 Trailer park Devers Substation

[1] Denotes incorporated city.
[2] Denotes unincorporated portions of the respective county.

Examples of sensitive land uses along this segment include:

- New housing developments in Cherry Valley and north of Beaumont
- Trailer parks located in the City of Beaumont and in Painted Hills
- Elementary school, Beaumont High School and Junior High located in the City of Beaumont
- A school situated on the Morongo Indian Reservation
- Cemeteries in the City of Calimesa (i.e. Desert Lawn Memorial Park) and the City of Beaumont
- Several recreational facilities, such as neighborhood parks and golf courses.

This portion of the route is much less urbanized and characterized by more open space than the area farther west. There is little to no agriculture along this portion of the DPV2 Alternative route, while residential land use types and public facilities are scattered along the segment. This segment would pass through several cities and unincorporated communities in San Bernardino and Riverside Counties. It would also pass through San Timoteo Canyon, the Morongo Indian Reservation, and land owned by the BLM. The route would pass through Cherry Valley, and north of Beaumont and Banning, where many residential communities are adjacent to the DPV corridor. This segment also crosses Highway 62, which is designated as a scenic highway.

Construction of transmission line upgrades would occur within welldefined SCE transmission corridors, but would require assessment for effects on existing land use types, such as schools, habitat restoration areas, and recreation areas noted in **ALTERNATIVES Table 5.** However, it should be noted that many land use types along this segment would be compatible with the DPV2 Alternative. For example, a portion of the route travels through inaccessible open space in Loma Linda and towards San Timoteo Canyon, where it is not visible to sensitive receptors. The eastern portion of the segment passes through existing wind farms, which are typically consistent with the industrial nature of a transmission line.

San Bernardino Junction to San Bernardino and Vista Substations

In this segment, the DPV2 Alternative would consist of 230 kV reconductoring with possible tower upgrades, within an existing transmission corridor. Therefore, the proposed project would not be expected to result in preclusion of recreational or other land uses, because the project would not permanently alter the existing ROW. However, construction activity associated with reconductoring could affect sensitive land uses and recreational facilities through introduction of noise, dust, additional traffic, or temporary restriction of access to facilities immediately adjacent to the ROW.
The area between San Bernardino and Vista Substations and San Bernardino Junction is the most urbanized segment of the DPV2 Alternative, and it is predominantly characterized by industrial, residential, and commercial land use types, with limited agricultural use. As shown in **ALTERNATIVES Table 6,** this segment passes through the incorporated communities of Colton, Grand Terrace, and Loma Linda in San Bernardino County, in addition to unincorporated areas within the county. Examples of sensitive land uses along this segment include:

- New housing development in the vicinities of Mission Road and Leuven Street;
- Existing residential uses along the corridor near Beaumont Avenue and Chula Vista Street;
- Trailer park located across Newport Avenue from the Vista Substation;
- An elementary school in the City of Colton, and elementary, middle, and high schools in the City of Grand Terrace adjacent to the project route; and
- A church and senior center located near the project route on Grand Terrace Road.

ALTERNATIVES Table 6.
Potentially Affected Jurisdictions/Communities between San Bernardino and Vista Substations and San Bernardino Junction

Applicable Plans/Policies	Affected Land Use Types	Land Uses of Note
City of Colton General Plan	Residential Public Facilities	Elementary school
City of Grand Terrace General Plan; Barton Road Specific Plan	Residential Industrial Public Facilities	Montecito Memorial Park Library Elementary, middle & high schools Senior center Trailer park
City of Loma Linda General Plan	Industrial Commercial Agricultural Residential	Multiple railroad tracks Hilda Crooks Park Loma Linda Plaza
San Bernardino County General Plan, amended March 2003 (for unincorporated portions of ROW)	Various	

DPV2 Alternative construction could disrupt access to urban land uses in Colton, Grand Terrace, and Loma Linda. Additionally, the DPV2 project would potentially result in land use incompatibilities with existing schools and churches identified above. Recreational resources in this segment include such facilities as community parks, schoolyards, and walking trails. Several of these uses are near or under the existing transmission lines (e.g., Hilda Crooks Park) within the ROW. To minimize these temporary adverse impacts to recreational resources, mitigation measures would minimize disruptive construction activities on weekends and provide adequate alternative access to the affected facilities.

While there is limited agricultural use within this area of the route, potential impacts to agriculture would include the existing orchards within the project ROW near Loma Linda and San Bernardino. Reconductoring activities would not cause any conversion of Important Farmland (as defined by the California Department of Conservation) to a nonagricultural use.

Conclusions

Construction of the DPV2 Alternative could create short-term construction-related impacts such as noise, dust, and access restrictions that could affect sensitive land uses and the availability and quality of recreational facilities. The new, larger transmission line

structures in or near existing recreational facilities could cause a long-term deterioration in the quality of recreational opportunity. Impacts to recreation would result mainly from preclusion of use, access restrictions, or physical incompatibilities, such as land use intensification that degrade or diminish the value of recreational resources. Overall, the DPV2 Alternative would have greater land use impacts than the BEPTL because of its greater length and construction duration, as well as its closer proximity to residences and other sensitive land uses.

Noise and Vibration

Construction noise, while a short-term impact, could affect nearby noise-sensitive receptors. This is especially a concern at locations where the DPV2 Alternative passes through or immediately adjacent to parks, schools, or recreation areas, and residential uses.

Construction noise impacts occur from on-site and off-site construction activities. On-site noise during construction would occur typically from heavy-duty construction equipment (e.g., backhoes, dozers, and excavators), and there may also be helicopter use. Helicopter use to access remote structure sites, or during stringing operations, could also generate noise nuisances. Off-site noise sources would include trucks delivering material and equipment to the job site, as well as from vehicles used by workers commuting to and from the proposed construction sites. Noise from off-site construction sources can be evaluated based on estimating the number of vehicles traveling to and from the construction areas.

Noise sources associated with operations of a transmission line would include corona discharge and noise from substation transformers. Therefore, operation noise from project facilities would be below regulatory limits, and noise from maintenance activities would be low and of short duration. However, due to the longer route and construction duration and the closer proximity to residences and other sensitive land uses, noise impacts would be greater than for the proposed BEPTL project.

Socioeconomics

The DPV2 project alternative would traverse a diverse range of communities. **ALTERNATIVES Table 7** provides preliminary socioeconomic data such as the mean income, poverty rate, and non-white percentages for cities and counties along the entire project route, based on the 2000 U.S. Census data.

ALTERNATIVES Table 7.
Population Characteristics of Communities along DPV2 Alternative Route

Jurisdiction	Mean Income[1]	Poverty Rate[2]	Percentage Non-white[3]	Percentage Hispanic/Latino[4]
San Bernardino Substation and Vista Substation to San Bernardino Junction				
San Bernardino County	$42,066	15.8%	41.1%	39.2%
Colton	$35,777	19.6%	57.3%	60.7%
Grand Terrace	$53,649	7.4%	26.2%	25.4%
Loma Linda	$38,204	15.1%	45.8%	16.3%
San Bernardino Junction to Devers Substation				
Redlands	$48,155	10.5%	26.3%	24.1%
Riverside County	$42,887	14.2%	34.4%	36.2%
Calimesa	$37,849	12.2%	10.9%	14.1%
Beaumont	$29,721	20.2%	31.9%	36.2%
Banning	$32,076	19.9%	35.8%	30.2%
Morongo Indian Reservation	$51,071	18.0%	78.1%	20.3%
San Gorgonio Pass, CCD*	$33,191	17.4%	28.8%	27.0%
Devers Substation to Blythe				
Desert Hot Springs, CCD*	$28,121	21.3%	26.4%	37.8%
Cathedral City	$38,887	13.6%	34.7%	50.0%
Agua Caliente Indian Reservation	$37,560	10.5%	11.3%	12.3%
Cathedral City-Palm Desert, CCD*	$47,045	10.0%	20.9%	29.7%
Indio	$34,624	21.5%	51.3%	75.4%
Coachella	$28,590	28.9%	61.2%	97.4%
Chuckwalla, CCD*	$28,849	22.4%	67.0%	46.1%
Palo Verde, CCD*	$32,168	21.2%	44.7%	46.0%
Blythe	$35,324	20.9%	44.6%	45.8%
Arizona Portion				
La Paz County	$25,839	19.6%	25.8%	22.4%
Ehrenberg	$27,000	22.7%	17.3%	30.1%
Quartzsite	$23,053	13.5%	5.5%	5.0%
Maricopa County	$45,358	11.7%	22.6%	24.8%
Buckeye, CCD*	$37,018	17.1%	24.6%	32.0%

Source: U.S. Census Bureau. Census 2000
(http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_lang=en).

* CCD (Census County Division) is a subdivision of a county that is a relatively permanent statistical area established cooperatively by the Census Bureau, the State, and local governments. The CCD for a particular county region was used if data specific to unincorporated communities within that region were not available.

[1] Median Income for Households, 1999 data.

[2] Includes all ages, 1999 data.

[3] Excluding Hispanic/Latino, 2000 data.

[4] 2000 data.

The DPV2 Alternative would not have a significant effect on employment in the overall project area. The number of project-related positions created would be negligible relative to the overall number of construction jobs in the areas along the DPV2 route in California and Arizona.

The project would temporarily increase the population in the project area. However, the impacts from a temporary increase are not expected to be significant. Construction of the DPV2 Alternative could also create an increased demand for housing in the Blythe,

Devers, and Palo Verde areas. This increase in demand was not expected to cause significant negative short-term impacts to housing availability in the area around the transmission line.

The DPV2 Alternative would also contribute to a positive short-term impact on the local economy and on the fiscal resources of local governments along the DPV2 route. However, it would not place a significant demand on public services or facilities. According to **ALTERNATIVES Table 7,** the City of Colton (57.3 percent), Indio, Coachella (61.2 percent), and Chuckwalla (67.0 percent) all have non-white populations greater than 50 percent. In addition, the route between Devers and San Bernardino Junction would traverse the Morongo Indian Reservation (78.1 percent non-white population), which could also result in environmental justice concerns. Appropriate mitigation measures from other relevant areas (e.g., public health, air quality, noise) would be necessary to reduce disproportionate impacts to less than significant levels. After appropriate mitigation, the DPV2 Alternative would not be expected to have a disproportionately adverse environmental justice impact on minority, low-income, or American Indian populations.

Overall, socioeconomic impacts would be greater with the DPV2 Alternative than with the proposed BEPTL project because of the much greater scope and length of the DPV2 Alternative, as well as the potential environmental justice concerns, especially on the Morongo Indian Reservation.

Soil and Water

The DPV2 Alternative would be constructed in a region that is primarily arid, particularly the portion east of Banning, with low annual rainfall and few permanent streams. Annual rainfall ranges from a low of approximately three inches per year in the Indio area to approximately 16 inches per year in the San Bernardino area. Most of the route receives less than eight inches of precipitation per year. With the exception of the Colorado River, most watercourses are dry most of the year, flowing only in response to occasional summer or winter rains.

Beginning at the western end of the DPV2 route, approximately the first 20 miles, from the Vista Substation to Banning, would be in an area that drains to the Santa Ana River and the Pacific Ocean. Major streams crossed by or in the vicinity of this segment include San Timoteo Creek and Yucaipa Creek. Neither of these are listed as impaired by the Regional Water Quality Control Board, but both drain into the Santa Ana River, portions of which are listed as impaired for pathogens under Section 303(d) of the 1972 Clean Water Act.

Most of the DPV2 Alternative route, from approximately Banning to the Colorado River, lies within the Whitewater, Chuckwalla, Hayfield, and Colorado Hydrologic Units. With the exception of portions of the Whitewater basin, which drains out of the San Bernardino Mountains, this entire reach is arid desert draining mostly to interior, closed basins such as the Salton Sea, the Ford Dry Lake and the Hayfield Dry Lake. The eastern 18 miles within California drains to the Colorado River primarily via desert washes and a series of irrigation canals along the Colorado River bottom. Approximately 10 miles of the route cross the irrigated Coachella Valley, which drains to the Salton Sea. Major

drainageways along or in the vicinity of this route include the Whitewater River, Coachella Valley Stormwater Channel, and washes draining to the Hayfield and Ford dry lakes. The Salton Sea and Coachella Valley Stormwater Channel are listed as impaired for nutrients, salts and selenium, and pathogens, respectively. For approximately 25 miles, the route runs parallel to the Colorado River Aqueduct. The route crosses the Colorado River at Blythe. The Colorado River is the largest drainageway along the route, draining a large part of the western United States, and flowing perennially under regulated flow at Blythe.

The western 65 miles of the DPV2 Alternative route in Arizona drains to the Colorado River mainly via the Tyson and Bouse washes. The easternmost 40 miles in Arizona, ending at the Palo Verde Nuclear Generating Station, drains through the Centennial Wash to the Gila River, which is listed as impaired at the point of confluence with the Centennial Wash. All of the Arizona segment would be within the Colorado River/Lower Gila River watershed management zone. The terrain and climate of the Arizona segment are arid desert similar to those of California. Washes flow only in response to the infrequent rainfall events. As is the case in California, the desert washes, although they infrequently contain water, are capable of high, flash flows that can cause destructive flooding and erosion.

California groundwater basins include the Coachella Valley, Chuckwalla Valley, and Orocopia Valley basins. Basins are generally comprised of alluvial material (mostly sands and gravels) above bedrock and between mountain ranges. Groundwater is generally hundreds of feet deep in the desert areas, but may be shallow in the farming areas of the Coachella Valley and the Colorado River bottom. Groundwater in the Arizona portion of the corridor is a typical basin and range aquifer similar to the California aquifers. The alluvium-filled basins are interspersed between ranges of mountains.

As discussed under Hazardous Materials above, a major concern related to soil conditions is preexisting soil contamination that could affect construction workers and the public during project construction. This is especially a concern for substation work and tower/pole locations where excavation may occur in urban, populated areas of the corridor where historic or current uses may have resulted in soil contamination. If contamination exists, appropriate procedures must be implemented for protection of workers and groundwater quality. Because much of the DPV2 Alternative route would be through the rural or undeveloped areas, only very sparse commercial or industrial activities could contribute to soil or groundwater contamination. Limited potential for contamination could occur from current and historic pesticide and herbicide use along the alignment. In the urban and suburban areas, especially in San Bernardino County and central and western Riverside County, commercial (e.g., gas stations and dry cleaners) and light industrial uses may have resulted in localized soil and groundwater contamination.

Construction of transmission line tower/pole foundations or excavation of trenches could encounter contaminated soil or groundwater, and handling and disposal of contaminated materials could pose a risk to workers and the public. Improper use and storage of hazardous materials during construction could also pose a threat to the environment. Mitigation measures will be developed to protect construction workers and the public. In particular, pre-construction research and testing of known or suspected

contamination sites would be essential to define conditions that may be encountered during construction. In this process, contamination boundaries would need to be delineated and chemicals of concern identified. Contingency plans would likely be recommended for sampling, testing, and handling of contaminated soil and groundwater at known and unknown contamination sites. All hazardous materials used and stored during construction will need to be handled in an appropriate manner consistent with regulations.

Crossings of watercourses will be accomplished by spanning from tower to tower, so it will likely be possible to avoid impacts to most drainageways. Primary water resources impacts are expected to be potential surface and groundwater quality impacts during transmission line construction. Examples include discharge of pollutants to surface water or groundwater during construction, disturbance of watercourse channels during construction, disturbance of flowing water during construction, or disturbance or pollution of groundwater, particularly in the vicinity of wells or springs. Operation-related impacts should occur only through routine maintenance or monitoring activities, or through flooding and erosion at towers, substations and other ancillary structures by desert washes.

Hydrologic processes interacting with the DPV2 Alternative transmission line and appurtenant structures after construction create the potential for flooding, streambed scour, lateral erosion and bed-material transport. Each of these processes can be affected by the transmission line in a manner that could pose a risk to adjacent property or the transmission line itself, particularly in the case of towers and other on-ground structures. Mitigation measures such as minor changes in the transmission line route to avoid sensitive areas, erosion setbacks, construction and monitoring procedures, alternative crossing locations, bank protection, construction timing, and revegetation, would reduce impacts to soil and water resources to less than significant.

Overall, impacts to soil and water would be greater for the DPV2 Alternative than for the proposed BEPTL project because of the greater length of the route and the larger number of waterway crossings.

Traffic and Transportation

Although most of the DPV2 Alternative alignment is located outside the ROW of a public highway or rail facility, there could potentially be some disruption to traffic or rail operations at locations where the alignment would cross or run adjacent to a roadway or railroad track. Similar to the proposed BEPTL project, lane blockages, access to residences and businesses, safety, pedestrian routes, public transportation, rail operations, and emergency vehicle access could be impacted. Crossings of the interstates (I-215 and I-10), various State highways, and major roadways in the region could impact traffic, because traffic would need to be halted for a period of time (several minutes to several hours) while the transmission line is strung across the roadways.

In addition to the problems caused by the construction zone blocking the public ROW, potential impacts associated with construction workers' vehicles, trucks, construction equipment, and material deliveries could also occur. The additional traffic volumes and

parking demand generated by the construction activities could potentially have an adverse impact on traffic and parking conditions.

Mitigation measures for traffic and transportation include scheduling of construction activities to avoid peak periods of traffic flow (especially for commuter routes), advance notification to affected parties, maintaining access through the construction areas, preparing transportation management plans, coordination with emergency service providers, providing staging areas for parking and equipment storage during construction, coordination with public transit agencies, and preparation of an emergency response plan to address disruptions to the transportation system during a major incident. Measures such as these can generally reduce traffic and transportation impacts to less than significant levels.

Because of the relatively passive nature of a transmission line during operation, the primary traffic and transportation issue associated with the DPV2 Alternative is the potential short-term impact to traffic during construction. The primary operational impacts would be impacts of the transmission lines on aviation activities. In agricultural areas, however, the new towers may affect crop-dusting activities or access to nearby airfields, and the significance of these long-term impacts would need to be evaluated based on tower placement and conductor height.

Overall, transportation and traffic impacts would be greater with the DPV2 Alternative because of the longer construction duration and route, which would include a greater number of crossings of major roadways and a greater proximity to residences whose access could be disrupted.

Transmission Line Safety & Nuisance

Induced Current and Shock. The project may cause an incremental increase in the risk of electric shock within the transmission line ROW, however, because the line would be in an existing corridor it would not create a new risk. In order to reduce these impacts to less than significant levels, suggested mitigation includes grounding nearby fences, and consulting with agricultural land managers to ensure that irrigation practices do not create a potential for water stream contact with overhead transmission lines (e.g., in the agricultural area designated as Important Farmland south of Blythe). The DPV2 Alternative would have a slightly greater risk of electric shock due to the construction of a 500 kV line, as opposed to 230 kV with the proposed project.

Effects on Pacemakers. An energized transmission line also creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the DPV2 Alternative would be similar to the proposed project and would not cause a significant change to the baseline conditions within the existing transmission line corridor.

Blasting. Transportation and the use of blasting materials (if necessary) would be expected to create an increased risk of injury to workers and the public. The use of a

licensed contractor with a valid California “Blaster License” pursuant to Cal-OSHA Article 8, Section 1550-1580 would mitigate risks to less-than-significant levels. Impacts from the DPV2 Alternative would be slightly greater due to its higher voltage and greater length.

Magnetic Fields. The modifications to the existing transmission corridor would cause a long-term change in magnetic field levels along the route. The impacts would be localized. In areas where the load per circuit would decrease, because of additional circuits being included with the project, EMF levels may actually decrease with the project. Alternatively, levels could increase if field cancellation methods as may be required by the CPUC to comply with its “no-cost/low-cost” EMF mitigation policy are not effective. Expansion of the right-of-way, however, may encroach on populated land uses, which could increase the number of people exposed to EMFs.

The DPV2 Alternative route travels through populated areas, especially west of the Devers Substation, where some residential areas and parks are immediately adjacent to the project corridor. Besides residences, the route passes by other public-use sensitive receptors (e.g., schools, offices, retail, etc.). These residences and sensitive receptors in close proximity to the ROW would be subject to increased EMF levels.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line safety hazards or nuisances. However, the length of the DPV2 Alternative line would be approximately 210 miles longer than the proposed BEPTL project, showing the proposed project line as preferable in terms of the total length of the source of line fields.

Visual Resources

The DPV2 corridor spans a variety of landscapes ranging from urban fringe and suburban residential development to areas of Sonoran Desert creosote bush scrub vegetation and desert dry wash woodlands. The entire route is visually dominated by existing transmission infrastructure. The project would also cross private lands, non-federal public lands, and federal lands administered by BLM. Such varied terrain and landscape characteristics are accompanied by many potentially sensitive viewing opportunities. Although the project would primarily be located within an established utility corridor, any increase in industrial character (from larger or additional transmission towers) that is noticeable to sensitive viewing populations (e.g., residents, recreational travelers on local roads and freeways, and back-country recreationists) would likely be perceived as an adverse visual change. The following paragraphs describe the visual resources setting along the DPV2 Alternative corridor.

Arizona Segment

Most of this segment passes through a Sonoran Desert landscape on lands that are administered by the BLM. The route is visible from U.S. Route 95, Arizona State Route 85, local roads, and numerous unpaved roads that provide recreational access to the public lands that the project passes through. It would also be visible from the Kofa National Wildlife Refuge. Similar to the segment from Blythe to Devers Substation, in some areas the landscape exhibits minimal variety and can be dominated by existing energy

infrastructure. In other areas, the juxtaposition of flat desert landforms with a backdrop of rugged, angular mountains creates greater visual variety and interest, particularly where existing utility infrastructure is less prominent and the landscape appears intact. The project would be located in an existing utility corridor, and energy and utility infrastructure is prominent in the eastern portion of this segment in closer proximity to the numerous power plants and substations near Palo Verde.

As stated in the *Lower Gila South RMP/EIS* (at page 13), since interim VRM classes have not been developed along this area, that BLM lands in Arizona lacking VRM classification are to be managed as VRM Class III.

Devers Substation to Blythe

This segment extends east from Devers Substation to the City of Blythe near the Arizona border. Between Devers Substation and Indio, the route stays north of I-10 as it passes through the north and east portions of the Coachella Valley. Along this portion of the route, the existing line is visible from residential developments, local roads, and I-10. East of Indio and the Cactus City Rest Area, the route crosses to the south side of I-10 where it stays all the way to the Arizona border. This segment passes through a typical Sonoran Desert landscape, which in this area primarily consists of agricultural land, Sonoran Creosote Bush Scrub vegetation, and desert dry wash woodland. In some areas, the landscape exhibits minimal variety and may be dominated by existing energy infrastructure. In other areas, the juxtaposition of flat desert landforms backdropped by rugged, angular mountains creates greater visual variety and interest, particularly where existing utility infrastructure is less prominent and the landscape exhibits greater intactness. East of Indio, this segment is primarily visible to travelers on I-10 and local roads and a few scattered rural residences.

Throughout much of this segment, the primary visual issue of concern would be whether this project alternative would be consistent with the BLM management directives, and if not, how significant the visual impact would be. The VRM classification is determined by an established inventory and overlay method that consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes, each with a set of management objectives. The contrast analysis includes pre- and post-project comparisons for land and water forms, vegetation, and structures. BLM has established VRM classifications for its lands in the Coachella Valley between Devers Substation and Indio, but not east of Indio. “Interim VRM Classifications” were presented in the DSWTP EIS/EIR; however these classifications may require review.

The “Interim VRM Classifications” presented in the DSWTP Draft EIS/EIR can be considered a reasonable first step but need to be refined to more accurately reflect the landscape variability that occurs throughout the I-10 corridor before thorough analysis on this alternative can be performed and consistency with the applicable VRM objectives can be determined.

San Bernardino Junction to Devers Substation

This segment extends from San Bernardino Junction to Devers Substation and involves a 230 kV upgrade where the smaller structures of two existing transmission lines will be replaced with one set of larger towers. From San Bernardino Junction, the route extends southeast through San Timoteo Canyon, initially passing along ridgelines south of the canyon before converging on and then crossing to the east side of San Timoteo Canyon Road. From there, the DPV2 Alternative route continues east, spanning I-10 into new housing developments between Cherry Valley and Beaumont before entering open space to the east of Beaumont. The route again passes in close proximity to residential development north of Banning. From there, the corridor continues east through the foothills of the San Bernardino Mountains, approaching very near to I-10 and the Outlet Mall in Cabazon before passing through the Morongo Reservation and wind farms to the east. The route then spans State Scenic Highway 62 to connect with Devers Substation, just north of Dillon Road. As is the case farther west, many of the present tower locations along this segment are prominently visible to nearby residents and/or travelers on roads and highways (with high viewer sensitivity). As a result, the new larger 230 kV transmission towers would cause adverse visual changes due to increased visual contrast, structure prominence, or view blockage, and how this new structure prominence is balanced with the removal of the two other sets of single-circuit towers. There is also potential viewer sensitivity through the Morongo Reservation. Any new visible structure skylining (extending above the horizon line) would likely cause increased structural prominence, particularly if the existing towers at that location do not presently extend above the horizon line.

San Bernardino Substation and Vista Substation to San Bernardino Junction

This portion of the DPV2 Alternative route involves 230 kV reconductoring only (although SCE's project application may define other tower changes that Commission Staff is not currently aware of). From San Bernardino Substation, the route extends south, passing in close proximity to several residences on Lugonia Avenue before spanning I-10. Between I-10 and Timoteo Wash, the route is visible from numerous roads including Redlands Boulevard, Mission Road, Barton Road, Lawton Avenue, Hinkley Street, and Beaumont Avenue to name a few. The route is also visible from numerous residences that are located in close proximity to the corridor and new homes are being built immediately adjacent to the corridor near Mission Road. There are also residences on both sides of the corridor south of Barton Road to Beaumont Avenue, where a park has been recently constructed within the ROW.

Similarly, from Vista Substation to San Bernardino Junction, the route passes through and adjacent to residential development in Grand Terrace. Residential streets with views of the corridor include (from west to east) Canal Street, Grand Terrace Road, Vista Grande Way, Barton Road, Laurelwood Street, Walter Court, Westwood Street, Reche Canyon Road, Prado Lane and Canyon Vista Drive. East of Canyon Vista Drive, the corridor enters undeveloped rolling hills. Many of the present tower locations along are prominently visible to nearby residents and the primary visual issue of concern will be whether the reconductoring requires either an increase in tower height or replacement of the entire structure with a larger structure. Either situation could result not only in an increase in structural contrast and prominence but view blockage as well.

Conclusion

The DPV2 Alternative has the potential to create significant visual impacts in a number of locations. In order to determine the significance of impacts, the most sensitive viewing locations need to be evaluated through use of photo simulations in order to determine the extent of impacts. Mitigation options include the relocation or redesign of individual towers or route segments.

Waste Management

Similar to the proposed project and the Eagle Mountain Alternative discussion above, the DPV2 Alternative would need to be constructed with the use of a comprehensive program to manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes) and would comply with all LORS. Assuming compliance with these requirements, the environmental impact of waste disposal would be similar to those of the proposed BEPTL project.

Worker Safety & Fire Protection

Similar to the proposed project and the discussion for the Eagle Mountain Alternative above, worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, the DPV2 Alternative would have a smaller impact in the areas of worker safety and fire protection than the proposed Blythe Transmission Line.

Geology, Mineral Resources, and Paleontology

Seismic activity could pose a significant risk to the DPV2 Alternative and could damage DPV2 facilities if they were not properly constructed. The DPV2 Alternative corridor would cross the San Jacinto and San Andreas faults, which are major and active strike-slip faults. The design of any modified structures or foundations for new structures would be consistent with project-specific geotechnical recommendations, thereby reducing potential impacts, such as ground shaking, to less than significant levels. Ground shaking effects may also be reduced with use of appropriate design for the towers. Maps published by the California Division of Mines and Geology estimate the peak ground acceleration in the DPV2 Alternative area with a ten percent probability of exceedance in 50 years of more than 0.2 to 0.3g. Design of support structures to conform to seismic standards (IEEE 693) and wind-loading standards would likely be recommended to reduce the risk of damage from strong ground shaking.

Similar to the DSWTP route, there is a 10-mile section of the DPV2 route north of Indio that is characterized by a moderate to very high liquefaction potential. Most of the project area has a low liquefaction potential, except in areas of unconsolidated soil, which may pose a dry, liquefaction-like risk during an earthquake.

The majority of the DPV2 Alternative route would pass through valleys and mountain fringes where there is a low risk for landslides. Hazards from unstable slopes and seismicity could affect roads used for construction. Also, some tower sites would be subject to geotechnical hazards that would need to be corrected prior to construction.

However, impacts to roads or the local environment from excavations and fill were considered less than significant.

Site-specific geologic conditions have yet to be determined and may create a significant potential to affect project facilities. Mitigation, such as utilizing an engineering geologist to make recommendations for moving towers or roads, or identifying appropriate construction methods, would reduce impacts to less than significant levels.

Mineral Resources. Although there are a number of mines in the DPV2 area, the construction and operation of a transmission line is not expected to create impacts to mines or mineral resources.

Paleontology. Excavation in conjunction with development of the DPV2 Alternative has the potential to adversely impact significant known or unknown paleontologic resources. In order to mitigate potential impacts to less than significant levels, a qualified vertebrate paleontologist should develop a program that includes pre-construction surveys; monitoring; preparation, identification, and curation of recovered specimens; and preparation of a report of findings.

Transmission System Engineering

The DPV2 Alternative is currently being evaluated by the CAISO, and is undergoing assessment by the Western Electricity Coordinating Council (WECC). These assessments will evaluate the effect of the DPV2 project on the transmission system of the southwestern United States. The DPV2 project timeline is highly uncertain at this time. However, if the BEPTL applicant utilized the DPV2 project line, important space in a designated corridor would not be required for this moderate capacity line (the BEPTL). Additionally, if the BEPTL applicant participated in development of the DPV2 line, they would be in conformance with the planning/siting principle of “sharing” new transmission facilities. Compared to the DSWTP Alternative, the DPV2 alternative is not ranked as high because of uncertainty regarding the in service date.

The design and construction of this alternative project would have to be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

BUCK TO JULIAN HINDS WITH RECONDUCTORING ALTERNATIVE

ALTERNATIVE DESCRIPTION

This alternative would require construction of a new transmission line between Buck Boulevard Substation and Julian Hinds Substation, as proposed by Blythe Energy for the Proposed Project. In addition, reconductoring (installation of higher capacity conductors on existing transmission towers) would be required between Julian Hinds Substation and SCE’s Mirage or Devers Substations. The extent of, need for and cost of the reconductoring would be based on the results of System Impact Studies currently being completed by SCE.

The reconductoring would occur along the existing transmission line that follows the DPV2 and DSWTP corridors from Julian Hinds to Devers (see DPV2 and DSWTP route descriptions above), which is approximately 42 miles. The reconductoring route to Mirage Substation, which is located approximately 14 miles southeast of Devers Substation, would also be similar for most of the route, but would diverge from the DSWTP and DPV2 corridors just east of Thousand Palms by traveling less than 2 miles south from the DPV corridor to the existing Mirage Substation, which is located just north of Interstate 10.

Based on the results of the System Impact Studies, reconductoring the segment between Julian Hinds and either Mirage or Devers Substations would likely eliminate the need for construction of the proposed new Buck Boulevard to Midpoint Substation transmission line component as well as construction of the new Midpoint Substation (or an alternative substation). The reconductoring alternative would also avoid the significant difficulties of securing a Path Rating Change for the Palo Verde-Devers line, a major California Arizona Intertie with numerous stakeholders.

Rationale for Consideration

This alternative is being considered for the following reasons.

- It would likely eliminate the need for the single-circuit 230 kV BEPTL interconnection with the DPV1 line, which is already close to capacity and is congested and the Midpoint Substation. The interconnection would require WATS/WECC approval as does the proposed project. However, the alternative would not cause as difficult a WATS/WECC approval as the DPV1 termination on a major California Intertie.
- Reconductoring of a downstream facility creates minimal environmental impacts as compared with construction of a new transmission line segment.
- Blythe Energy would have more control over a termination at Julian Hinds with a reconductoring than it would for a 500 kV interconnection with the DPV1 or DPV2 lines; control is a project goal. ·
- Reconductoring could eliminate the need for a new Midpoint Substation because the Buck Boulevard to Julian Hinds component would be able to carry all of the necessary generation out of BEP, and the construction of one of the two 230 kV circuits from Buck Boulevard to DPV transmission line and the Midpoint Substation would not be necessary.

ENVIRONMENTAL AND ENGINEERING ASSESSMENT FOR BUCK TO JULIAN HINDS WITH RECONDUCTORING ALTERNATIVE

Air Quality

The impacts of this alternative would be identical to those of the BEPTL's Buck Boulevard to Julian Hinds Substation, with the additional emissions resulting from reconductoring of approximately 42 miles of existing lines. This alternative is located in the Mojave Desert region of southern California in a similar area as the DSWTP Alternative. Existing air quality is generally impaired in the project area relative to

California standards for both ozone and PM10. Segments of this alternative would be located within regions classified federally as attainment or unclassified attainment and designated by CARB as non-attainment.

Air pollution emissions from the Buck to Julian Hinds with Reconductoring Alternative would be short-term and would occur during construction only. Construction related emissions would consist of CO, NO_x, SO_2, and PM10 and would be attributed to exhaust from construction equipment; fugitive dust and PM10 from grading, earth moving, and equipment traveling on paved and unpaved roads; and construction crew vehicle traffic.

Emissions from construction of this alternative would exceed MDAQMD and/or SCAQMD significant thresholds for CO, NO_x, Volatile Organic Compounds, and PM10. Implementation of construction mitigation measures, such as properly tuning and maintaining heavy duty off road diesel equipment and the utilization of water and chemical dust suppression, would reduce exhaust emissions to less than significant levels.

This alternative would be required to meet all District rules and requirements and comply with LORS, and like the proposed project, overall impacts are expected to be mitigable to less than significant levels. While this alternative would include construction activities occurring along a longer route with reconductoring activity between Julian Hinds and Mirage Substations, it would not need additional access roads and it would eliminate the need for the construction of 6.7 miles of double-circuit transmission line and a new Midpoint Substation, thereby likely creating less overall air quality impacts than the proposed BEPTL project.

Biological Resources

The portion of this alternative between Buck Boulevard Substation to Julian Hinds Substation would be identical to that segment of the proposed BEPTL project. From Julian Hinds to the Mirage or Devers Substations the route would be similar to the DPV2 and DSWTP routes, however, this alternative would only include reconductoring, which has far less temporary and permanent biological impacts than new transmission line construction.

Most of this segment of the alternative would be through undeveloped land, although the western area is more developed than the route east of Julian Hinds Substation. Because construction work would be located along existing SCE DPV transmission line ROW for much of its alignment, the alternative would utilize existing access roads, requiring a limited amount of new access road construction.

As discussed under the DSWTP and DPV2 Alternative, construction and operation of a transmission line along this route would result in a loss of vegetation and could result in the introduction and dispersal of noxious weeds. Mitigation measures would be necessary to reduce vegetation disturbance during construction. Actions to incorporate riparian area avoidance and permit measures may also be needed.

The alternative construction activity could create temporary and permanent losses of wildlife habitat and habitat fragmentation, and could result in direct wildlife mortality and temporary displacement of wildlife. Specifically, raptor species may be at a greater risk during the life of the project. Project design would need to minimize electrocution and collision potential in addition to coordination with responsible resource agencies. Additional impacts to wildlife include increased disturbance of resident wildlife species through the construction of new access roads, and the disturbance of nesting raptors and migratory birds. In order to minimize these disturbances, mitigation would include the use of construction activities that would minimize potential wildlife disturbance, the restriction of public access, and the use of pre-construction surveys.

In addition, construction could potentially disturb special-status plants, which could be mitigated by surveying to avoid or salvage these plants. Construction and operation of the project could also have direct impacts on species such as the desert tortoise, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, desert rosy boa, Couch's spadefoot, burrowing owl, Loggerhead Shrike, LeConte's Thrasher, black-tailed gnatcatcher, prairie falcon, chuckwalla, and Coachella Valley round-tailed ground squirrel. Measures would need to be implemented that decrease the habitat loss and incidental take of these species.

Despite 42 additional miles of reconductoring activity west of Julian Hinds Substation, this alternative would eliminate the need for the construction of the Midpoint Substation and also the Buck Boulevard to DPV transmission line component (resulting in construction of single-circuit rather than double-circuit poles between Buck Boulevard and the proposed Midpoint Substation). Reconductoring activity would be much less intensive and disruptive than the short-term and permanent impacts on biological resources associated with construction of a new 6.7-mile transmission line and a new substation.

Cultural Resources

Potential cultural resources existing along this alternative are described for the proposed BEPTL project and the DPV2 Alternative above. New transmission line construction between Buck Boulevard Substation and the Julian Hinds Substation would have the same impacts as described for the proposed BEPTL project.

Background research for part of the reconductoring portion of this alternative route was conducted by Mooney/Hayes using the archives of the California Historical Resources Information System (CHRIS), Eastern Information Center (EIC), University of California, Riverside prior to initiation of survey activities (Mooney and Hayes, 2004). Within 0.5 miles of the project, the locations of 112 sites and 28 isolates were identified (Blythe 2004a, Appendix D-1 p. 16). The applicant conducted reconnaissance along this alignment including some "windshield surveys" and some small area judgmental surveys. Some intensive survey work was conducted at areas where substations were proposed or in areas of known sites or where sites were thought to be likely. Twenty prehistoric sites and seven historic sites were identified within the impact area/Area of Potential Effect along this route (Blythe 2004a, p 5. 16-19 and 5.16-24; Blythe 2004e, p.

36). A complete survey of this alternative is expected to be completed before February, 2005.

Additional research was conducted to identify the existing record of previously recorded archaeological resources and archaeological investigations conducted on or within a one-half mile search radius of each interset pole's Area of Potential Effect (APE). The location of the interset poles was considered to address potential impacts caused by "downstream" affects of the project._Archival research identified 14 archaeological investigations previously conducted within the one-half mile search radii surrounding the proposed interset pole locations; six previously recorded cultural resources have been identified within these same study area boundaries.

Intensive archaeological survey of the proposed interset pole locations was conducted 16-18 September 2004. This fieldwork resulted in discovery of one isolated prehistoric ceramic vessel body shard (record number P33-13772) within one of the six proposed interset pole APEs; no other cultural resources were discovered as result of this intensive field survey.

The current study reveals that construction of the six proposed interset poles will have no potential to impact significant cultural resources, and will therefore have no effect on historical resources or historic property. No further examination or evaluation efforts were considered to be warranted. However, this study evaluated only the interset pole locations and not the entire Julian Hinds-Mirage corridor that could be affected by reconductoring activities. If this route is chosen, a lead agency would need to concur with the assertion that there will not be impacts to significant cultural resources. In addition, since Native American consultation has not been completed, identification of the cultural resources is not complete. On December 3, 2004, BLM sent letters to eleven Tribal Governments and sixteen other Tribal Representatives initiating government to government consultation regarding this project and to identify any issues or concerns they would like to have addressed pursuant to NHPA, NEPA or state requirements. A brief description of the project was provided as well as a map of the proposed route. Results of the consultation will be provided in the final PSA. Therefore, additional research would be required in order to make a conclusion about this alternative.

Hazardous Materials

Similar to the proposed project between Buck Boulevard Substation and Julian Hinds Substation, existing and previous land uses within the area are not expected to have caused the presence of hazardous waste within the alignments. As analyzed and discussed for the DSWTP Alternative, the portion of this alternative is also not likely to encounter hazardous materials, especially because this segment would involve only the reconductoring of existing transmission lines and no excavation.

The use of hazardous materials for construction, operation, and maintenance would create potential exposure for workers and the public. To mitigate potential impacts, the project would comply with all pertinent LORS that would define procedures for vehicle

refueling and servicing, transportation and storage of hazardous materials, and disposal of hazardous wastes.

The project would be expected to generate solid waste during construction. Waste disposal is discussed under Waste Management below.

Despite the greater construction length associated with reconductoring approximately 42 miles of transmission line between Julian Hinds and Mirage/Devers Substations, overall hazardous materials impacts from this alternative would be less than with the proposed BEPTL project because the construction of the proposed Buck Boulevard to DPV transmission line component and the associated Midpoint Substation would not occur.

Land Use

The land use setting and impacts would be identical to those of the proposed BEPTL project from Buck Boulevard to Julian Hinds Substation. The eight-to-nine residences are the only population within 0.25-mile of the transmission line in this area. A windshield survey performed by staff determined the following sensitive land uses in the vicinity of the line between Buck Boulevard and Julian Hinds Substation:

- There is one residence located approximately 0.25-mile west of the proposed transmission line in the vicinity of the community of Blythe. This residence is approximately 0.5-mile west of the existing Blythe power plant site.
- The community of Hayfield, located adjacent to the Julian Hinds Substation has approximately eight homes and various recreational structures. An existing transmission line is approximately 1,000 feet north of the existing community, and the proposed transmission line will be placed within a proposed 100-foot dedicated ROW adjacent to the existing transmission corridor, closer to the residences. The community of Hayfield was established for the employees and their families who are employed to maintain MWD's Julian Hinds water pumping station that provides water to the Los Angeles basin.

West of Julian Hinds, the alternative route would require only reconductoring of an existing 230 kV line in the corridors described for the DSWTP and DPV2 Alternatives above. The corridor is primarily open space and the Eastern and Western Coachella Valley Planning Areas according to the County of Riverside General Plan (2002, as cited in IID & BLM, 2002). Other important open space or wildlife habitat areas in this portion of the project area that could be impacted by reconductoring activity include the Coachella Valley ACEC and Coachella Valley WHMA, both areas of critical wildlife habitat on BLM-administered land north of the route. The route would also traverse small parcels of Prime Farmlands and Farmland of Statewide Importance through this area.

From Julian Hinds west to the Coachella Valley, the project area is virtually uninhabited. The Riverside County Comprehensive General Plan (RCCGP) (1992, as cited in IID & BLM, 2002) classifies this region as rural desert land. No important farmlands are located along this segment.

Designated recreational areas within the project vicinity include Joshua Tree National Park, and the Orocopia Mountains and the Mecca Hills Wilderness Areas. The transmission line route would pass just north of these wilderness areas. The transmission line route would remain to the south of I-10 in this area, two to three miles south of Joshua Tree National Park.
Chiriaco Summit is a community of about 70 residents located approximately 30 miles east of Indio. The summit is the location of the General George S. Patton Memorial Museum and a small airport (Riverside County 2002, as cited in IID & BLM, 2002). The museum and Chiriaco Summit Airport are on the north side of I-10 at the summit, while the transmission line route would be on the south side of the Interstate. The alternative is not located within the airport influenced policy area (Riverside County 1992). The historic Camp Young desert training center utilized by General Patton is located to the south of I-10, west of Chiriaco Summit. No established recreation facilities are present at the Camp Young site and the reconductored DPV route would cross the middle of the Camp Young site (note that the DSWTP Alternative would cross north of the area).

The Eastern Coachella Valley Planning Area is within the southeast portion of the Coachella Valley, south and east of the City of Indio. The Planning Area extends east to Chiriaco Summit along I-10. Generally undeveloped desert land, small areas of agriculture, and infrequent residential uses are found along this portion of the SCE transmission line route that would be reconductored.

Continuing west, the transmission line route would cross to the north side of I-10 near the Cactus City Rest Area. The area near the Cactus City Rest Stop includes numerous existing utility projects north and south of I-10, including other electric transmission lines, fiber optic communication lines, three gas pipelines, and the Colorado River Aqueduct. From there, the transmission line route would remain to the north of I-10 in undeveloped desert land until entering the Coachella Valley, east of Indio. In this area, the transmission line corridor would pass adjacent to the southwestern corner of Joshua Tree National Park, but would not encroach upon park land.

In the eastern Coachella Valley, the Augustine Band of Mission Indians, the Torres Martinez Desert Cahuilla Indians, the 29 Palms Band of Mission Indians, and the Cabazon Band of Mission Indians own tribal land (10,046 acres total) throughout the area (Riverside County 2002, as cited in IID & BLM, 2002). Mostly low intensity agricultural land uses, but also commercial businesses, a power generation plant, and a tire recycling facility occur on tribal land in this portion of the project area (Riverside County 2002, as cited in IID & BLM, 2002).

The Western Coachella Valley Plan encompasses the project area from the Eastern Coachella Valley Planning Area boundary east of Indio, to the Devers Substation. The Western Coachella Valley portion of the project area includes the cities of Desert Hot Springs, Palm Desert, Cathedral City, Palm Springs, La Quinta, Indio, Rancho Mirage and Indian Wells, which are mostly located to the south of I-10. Unincorporated communities within or adjacent to the existing line that would be reconductored under this alternative include Bermuda Dunes, Thousand Palms, Sun City, Palm Desert and North Palm Springs.

The majority of urban development in the Coachella Valley is within these communities, with the exception of rural enclaves scattered throughout the valley. Urban land uses found in the unincorporated portions of the Western Coachella Valley include rural and suburban residential, commercial, industrial, mining, wind energy and recreational uses. The alternative reconductoring activity would be on the existing transmission lines located to the north of I-10 in relatively undeveloped rural desert areas. Most of the land crossed in the Western Coachella Valley is privately owned, with scattered federal parcels in the foothills of the Little San Bernardino Mountains and in the Indio Hills. Land uses in this area include mostly open space with scattered residential uses located outside the existing utility ROW.

Just northwest of the community of Thousand Palms, the transmission line routes cross two parcels of undeveloped tribal land owned by the Agua Caliente Band of Cahuilla Indians.

The longest possible reconductoring segment would terminate at the Devers Substation. The project would require modification of the existing substation, requiring the use of an additional five acres of vacant privately-owned land.

Despite the required 42 additional miles of reconductoring activity west of Julian Hinds Substation, this alternative would eliminate the need for the construction of the Buck Boulevard to DPV transmission line component and the proposed Midpoint Substation of the BEPTL. The reconductoring activity would occur in more developed areas (west of Chiriaco Summit), and it would be closer to some residences. In comparison, the Buck Boulevard to DPV transmission corridor would not affect any sensitive land uses, although it would be constructed along the western margin of existing orchards. Overall, the land use impacts of the reconductoring alternative are considered to be similar to those of the shorter but more intense new transmission line segment.

Noise and Vibration

Construction noise, while a short-term impact, could affect nearby noise-sensitive receptors. This is especially a concern at locations where the reconductored transmission line would pass through or immediately adjacent to schools, parks or recreation areas, and residential properties.

Construction noise impacts occur from on-site and off-site construction activities. On-site noise during construction would occur typically from heavy-duty construction equipment (e.g., backhoes, dozers, and excavators). Helicopter use to access remote structure sites, or during stringing operations, could also generate noise nuisances. Off-site noise sources would include trucks delivering material and equipment to the job site, as well as vehicles used by workers commuting to and from the proposed construction sites. Noise from off-site construction sources can be evaluated based on estimating the number of vehicles traveling to and from the construction areas.

Noise sources associated with operations of a transmission line would include corona discharge and noise from substation transformers. Therefore, operation noise from

project facilities would be below regulatory limits, and noise from maintenance activities would be low and of short duration.

The 42 miles of reconductoring activity would occur in a slightly more developed area, whereas the construction of a new 6.7-mile transmission line and substation between Buck Boulevard and Midpoint Substation would occur in relatively remote areas. Overall, these two options are considered to have similar noise impacts.

Socioeconomics

Incorporated cities within the vicinity of the reconductoring alternative include Blythe, Indio, Coachella, and Thousand Palms. The project would also pass through two parcels of land owned by the Agua Caliente Band of Cahuilla Indians. Greater than 95 percent of the area population is Caucasian and/or Hispanic (IID & BLM 2002).

This alternative would be located in the same area as the DSWTP Alternative, but would have less impact than the DSWTP Alternative because the portion of the route from Julian Hinds to Mirage or Devers would only include the reconductoring of existing lines. As a result, this alternative would not have a significant effect on employment in the region. The number of project-related positions created would be negligible relative to the overall number of construction jobs in eastern Riverside County. The project may create a small temporary increase in the population in the project area. However, the impacts from a temporary increase were not expected to be significant.

The project would contribute to a positive short-term impact on the local economy and on the fiscal resources of local governments in Riverside and Imperial Counties. Specifically, Riverside County and the Palo Verde Valley would gain some economic benefit from construction expenditures. The reconductoring alternative is not expected to place a significant demand on public services or facilities.

The Buck to Julian Hinds with Reconductoring Alternative would not have a disproportionately adverse environmental justice impact on minority, low-income, or Native American populations, since the project was not found to have any significant impacts that would affect local populations. Overall, despite differences in scope, socioeconomic impacts would be similar to the proposed project.

Soil and Water

The hydrologic setting for this alternative is similar to the proposed project and the DSWTP and DPV2 Alternatives. As with those alternatives, construction activities could result in a discharge of hazardous materials into a watercourse or wash (e.g. gasoline, diesel, oil, lubricants, paint solvents) in addition to sediment discharge during construction. In addition, wells and springs adjacent to construction areas could be disturbed or contaminated, which may be mitigated by limiting construction activities and the use of hazardous material near wells. Impacts from flooding, soil compaction, soil disturbance, and expansive soils would be the same as those of the proposed BEPTL project.

Overall, potential impacts to soil and water resources would be greater than those of the proposed project due to additional miles of construction activity along the reconductoring segment.

Traffic and Transportation

Roadways located near the project area include: I-10, SR-78, SR-111, SR-177, and SR-115, and are described in the previous alternatives sections. Airports and railroads in the vicinity are discussed under the DSWTP Alternative.

The effect of construction traffic on local roadways and the potential for traffic delays would be similar to those of the proposed BEPTL project. Reconductoring activity could affect traffic and transportation in the same manner as the construction of new transmission lines. Standard mitigation would reduce all traffic and transportation impacts to less than significant levels. This alternative would require approximately 42 additional miles of reconductoring construction and activity would occur in more developed areas, but construction traffic would be substantially less intense than that required for a new transmission line and substation that are included as part of the proposed BEPTL project. Overall, the proposed project would likely have fewer impacts due to the much smaller area in which impacts could occur, and the relative isolation of that area.

Transmission Line Safety & Nuisance

Induced Current and Shock. The project may cause an incremental increase in the risk of electric shock within the transmission line ROW. However, because the line would be in an existing corridor (adjacent to other existing transmission lines) it would not create a new risk. In order to reduce these incremental impacts to less than significant levels, suggested mitigation includes grounding nearby fences, and consulting with agricultural land managers to ensure that irrigation practices do not create a potential for water stream contact with overhead transmission lines.

The first 2.9 miles of both the proposed project and this alternative would cross agricultural lands, however, the lands are undeveloped or abandoned orchards/jojoba. The DSWTP Alternative would have a similar risk of electric shock to that of the proposed project, but could be slightly greater with the construction of a 500 kV line.

Effects on Pacemakers. An energized transmission line also creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the DSWTP Alternative would be similar to the proposed project and would not cause a significant change to the baseline conditions within the existing transmission line corridor.

Blasting. Transportation and the use of blasting materials (if necessary) would be expected to create an increased risk of injury to workers and the public. The use of a licensed contractor with a valid California “Blaster License” pursuant to Cal-OSHA

Article 8, Section 1550-1580 would mitigate risks to less-than-significant levels. Impacts between the proposed project and any alternative would be similar.

Magnetic Fields. The reconductoring of the existing 230 kV line through or near developed areas would likely increase magnetic field levels within and in areas immediately adjacent to the ROW and within 300 feet of the centerline. EMF modeling would be required to assess the difference in existing and future fields in reconductored areas.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line safety hazards or nuisances. This alternative would result in 6.7 miles of SCTL being constructed instead of DCTL. However, the length of the Buck Boulevard to Julian Hinds with Reconductoring Alternative line would be approximately 42 miles longer than the proposed project and would thus increase the length of exposure to increased magnetic fields.

Visual Resources

Visual Resources impacts would be identical to the proposed project for the segment of this alternative between Buck Boulevard Substation and Julian Hinds Substation. The setting of this alternative west of Julian Hinds (for the reconductoring segment) is described for the DSWTP and DPV2 Alternatives since the corridors would be similar and in Land Use above.

During reconductoring, construction impacts on visual resources would result from the presence of equipment, materials, and work force at the substation sites, staging areas, and along the route. Construction impacts on visual resources would also result from the temporary alteration of landforms and vegetation along the right-of-way (ROW). Vehicles, heavy equipment, project components, and workers would be visible during reconductoring activities, substation modifications, and site/ROW clean-up and restoration. Construction equipment and activities would be seen by various viewers in close proximity to the sites and ROW including adjacent and nearby residents, recreationists on trails and roads, motorists, and pedestrians. View durations would vary from brief to extended. Construction activities would be most visible for those elements through residential neighborhoods.

The permanent visual impacts of the reconductoring itself would be minor, and less than significant since the only visual change would be slightly thicker conductors. While the visual change from reconductoring would be very minor, the Buck Boulevard to Midpoint Substation transmission line segment includes small areas in which a new transmission line would be highly visible (from the substation to the crossing of the I-10). The remainder of the transmission line (south of the I-10) would not be visible from public roadways. Overall, the reconductoring alternative is slightly preferred over the proposed BEPTL project.

Waste Management

Similar to the proposed project and the Eagle Mountain Alternative discussion above, the reconductoring alternative would need to implement a comprehensive program to

manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes) and would comply with all LORS. The environmental impact of waste disposal would be less for the reconductoring alternative than for the proposed project because there would be less waste to dispose of without construction of a new Midpoint Substation.

Worker Safety & Fire Protection

Similar to the proposed project and the discussion for the Eagle Mountain Alternative above, worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, this alternative would have a similar impact in the areas of worker safety and fire protection than the proposed Blythe Transmission Line.

Geology, Mineral Resources, and Paleontology

The setting and impacts to geology, mineral resources, and paleontology would be identical to the proposed project from Buck Boulevard to Julian Hinds Substation. West of Julian Hinds the alternative would include the reconductoring of an existing SCE transmission line, which would have minimal impacts to earth resources since minimal ground disturbance is anticipated. This portion of the route would be largely similar to the DSWTP and the DPV2 Alternatives.

By eliminating the construction of the proposed Midpoint Substation and one of the 6.7 mile 230 kV transmission line circuits the new substation would not be prone to seismic hazards, or create the potential to encounter unknown paleontological resources during excavation. Therefore, impacts to geology, mineral resources, and paleontology would be slightly less with the reconductoring alternative than with the proposed BEPTL project.

Transmission System Engineering

The need for the reconductoring alternative is being evaluated by SCE in its System Impact Studies currently underway; however, the Julian Hinds to Devers line cannot transmit the full power output of BEP. This alternative is strongly preferred to the proposed project because it can provide adequate capacity from Buck Blvd. to Devers and negates the potential need for termination on a major Intertie. The alternative would comply with the established planning/siting principle of modifying existing transmission facilities where feasible.

The design and construction of this alternative project would be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

INSTALL LARGER CAPACITY LINE

ALTERNATIVE DESCRIPTION

This alternative would be installed along the same route as the proposed BEPTL, but the transmission towers would be larger to accommodate larger conductors or an additional circuit. This alternative is being considered because there are two other related transmission projects that are being considered for the transmission corridor between Blythe and Desert Center: the DPV2 line proposed by SCE, the DSWTP being evaluated by IID and the BLM. In addition, given that a second power plant, BEP II, has been proposed for a site adjacent to the BEP operated by Blythe Energy, additional transmission capacity would be required to transmit the power generated at that facility to southern California markets.

Two options are described below for this alternative. Option B is very similar to the DSWTP and DPV2 projects, except that in this alternative, the 500 kV towers would be constructed only between Blythe and Julian Hinds Substation. In addition, construction of the proposed transmission line component between Buck Boulevard and Midpoint Substation and construction of the new Midpoint Substation would be eliminated under both of the following options.

Option A: Double Circuit 230 kV Transmission Line

Under this option, towers would be constructed to accommodate a double circuit 230 kV line rather than a single circuit 230 kV line, as proposed. A single circuit line could be initially constructed by Blythe Energy, and the second circuit could be added when additional capacity is required. This option would also require the modification of the substations at Buck Boulevard and Julian Hinds in the future to accommodate the second circuit. Slightly larger towers would be required, but the tower spacing is assumed to be the same as that proposed for the BEPTL (two towers for each of the existing DPV 500 kV towers).

In the future when the second 230 kV circuit is required, there would be some additional short-term construction impacts resulting from installation of the additional conductors and insulators on the existing towers. These impacts would be temporary and minor since access roads would exist and the towers would have already been installed.

While a double circuit 230 kV line could accommodate the output of the proposed BEP I and BEP II power plants assuming upgrade of the system between Julian Hinds and Devers, it could not also accommodate increased imports of electricity from Arizona's Palo Verde generating hub. Option B (below) provides the potential for adding that capacity in the future.

Option B: 500 kV Transmission Line

Under this option, 500 kV towers (including 500 kV insulators and conductors) would be constructed. The line would be a single circuit, and could be initially be energized at 230 kV, and then later energized at 500 kV when the need exists. This option would require the installation of the larger 500 kV towers from the Buck Boulevard Substation

and along the entire transmission line route, except for the portion of the line approaching the Julian Hinds Substation where the proposed route diverges from the DPV corridor. From this point (just south of the I-10 at the Hayfield Road exit), a single circuit 230 kV line could be constructed into Julian Hinds Substation. This option would require that 500 kV equipment be installed at the Buck Boulevard Substation if the line were energized at 500 kV. The 230 kV line segment from I-10 to Julian Hinds could be removed and the land restored.
It is assumed that the 500 kV towers would be lattice towers, spaced to match the existing DPV 500 kV towers. Concrete towers are not generally used for 500 kV construction. This would result in the need for half as many towers as currently proposed, and fewer new spur access roads. However, each tower would have a substantially larger footprint than the proposed concrete towers, especially if the entire area under the tower were considered in the disturbance area calculations.

In the future when the line would be energized at 500 kV and would connect to DPV2 to form its western portion, there would be some additional impacts associated with construction of a switching station with circuit breakers at the connection point near Blythe at the eastern end of this alternative or DPV2 and this alternative could loop into Buck Boulevard. Construction of a switching station, however, would be far less intrusive than the construction of a new substation and access roads in the area would already exist.

Rationale for Consideration

Both of the two possible configurations would allow for more efficient use of the transmission ROW, and they would reduce potential cumulative impacts of the BEPTL project. These options could prevent the need for construction of other future projects (e.g., DSWTP and DPV2) along the same line segment, reducing construction impacts, disturbance of additional habitat for sensitive species, and potential cultural resources.

ENVIRONMENTAL AND ENGINEERING ASSESSMENT FOR LARGER CAPACITY LINE ALTERNATIVE

Air Quality

The types of air pollutants emitted during construction and operation of a larger capacity transmission line would be the same as those emitted for the proposed BEPTL project. Emissions during construction may be slightly greater because the towers would be larger, possibly requiring use of larger construction equipment. However, if fewer towers were constructed (as in Option B), overall emissions may be slightly reduced. Substation construction would be greater than with the proposed project. Construction of either the alternative or the proposed project would need to be controlled to satisfy the air permitting requirements of the MDAQMD. As such, construction and operation of an alternative with larger capacity would be subject to permit requirements. However, like the proposed project and the alternative itself, impacts would be less than significant after implementation of required mitigation.

Overall, this alternative would likely have similar emissions to the proposed project.

Biological Resources

Because this alternative would pass through the same habitats as the proposed project, differences in impact would result only from differences in the amount of ground disturbance. Option A would be the same as the proposed project. Option B would require approximately half as many towers as the proposed project, but each tower would have a larger footprint, requiring construction of foundations for four tower supports rather than the one required for a concrete pole. The habitat under the tower may be preserved or reseeded, but damage to desert habitat requires a long recovery time, and construction itself could have direct impacts on sensitive species. However, the number of spur access roads off the existing DPV corridor access roads would be reduced by half. Overall, the habitat disturbance is estimated to be similar to that of the proposed project.

Cultural Resources

Field surveys completed by the Applicant for the proposed project would also apply to this alternative. While fewer sites may be affected by the Larger Capacity Line Alternative due to the reduced number of towers and fewer access roads in Option B, each tower would require greater ground disturbance. Overall, the impact to cultural resources is expected to the similar to that of the proposed BEPTL project.

Hazardous Materials Management

Similar to the proposed project, existing and previous land uses along the transmission line route do not indicate the likely presence of hazardous materials within the construction zone. Compliance with LORS and standard mitigation would be required at both locations. Therefore, no difference in impact between the Larger Capacity Line Alternative and the proposed BEPTL project would result.

Land Use

While both the proposed BEPTL and the Larger Capacity Line Alternative would be located at some distance from residences or schools, the corridor for both lines would pass through several special land management areas on BLM lands, as discussed in the proposed project analysis. This configuration supports the goals of BLM to optimize use of a designated utility planning corridor for bulk transmission facilities.

Noise and Vibration

As stated in Land Use above, both the proposed BEPTL and the Larger Capacity Line Alternative would be located at some distance from residences or schools. Noise generated during construction would be similar to that of the proposed project, and neither would affect sensitive receptors. Therefore, overall noise impacts would be similar.

Socioeconomics

Socioeconomic impacts resulting from the Larger Capacity Line Alternative would be the same as those at the proposed BEPTL project.

Soil and Water

Impacts to surface water and groundwater would be the same as those of the proposed project, since both would follow the same route, and water resources would be protected through the same mitigation measures.

The potential for permanent and temporary soil disturbance would result be similar for both the proposed project and the Larger Capacity Line Alternative. Implementation of Conditions of Certification would ensure that soil impacts would be less than significant for both options. Operational impacts to soil and water resources would be less than significant as well.

Traffic and Transportation

The difference in construction traffic between the Larger Capacity Line Alternative and the proposed project is not known, though it is likely that the larger towers might require larger vehicles for their transportation or more vehicles if the towers need to be delivered in multiple sections. However, given the low level of traffic on area roadways, this potential for slightly greater traffic volumes is not expected to be noticeable.

Construction and operation of both the proposed project and the alternative would be required to comply with all LORS pertinent to traffic and transportation. Overall, construction and operation transportation impacts associated with the proposed project and the Larger Capacity Line Alternative would be similar and less than significant.

Transmission Line Safety & Nuisance

Induced Current and Shock. A higher voltage transmission line (500 kV) would have a greater potential for induced current or shock. However, there are few potential land uses along the transmission line route where this potential would be expected to cause problems.

Effects on Pacemakers. An energized transmission line creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the Larger Capacity Line Alternative would be similar to the proposed project and would not cause a significant change to the baseline conditions within the existing transmission line corridor.

Magnetic Fields. The Larger Capacity Line Alternative which uses higher voltages (500 kV) would create different magnetic fields than the proposed single circuit 230 kV project. Because magnetic fields are caused by the current in the conductors and the current for a 500 kV line may be smaller then for a 230 kV line modeling would be required to determine whether the fields would be larger or smaller, and the results would vary depending on which of the two configuration options was selected. Regardless, there are no residences along the transmission line route, so potential impacts from magnetic fields would be less than significant.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line health, safety hazards or nuisances.

Visual Resources

The Larger Capacity Line Alternative would follow the same route as the proposed project, but the tower design and tower placement would be different. Under Option A, where double circuit 230 kV towers would replace the proposed single circuit towers, no difference in visual impact would occur when compared with the proposed project. The slightly larger double circuit towers would still be substantially smaller than the adjacent DPV1 500 kV towers.
Under Option B, where the larger lattice 500 kV towers would be constructed, only half as many towers would be required and the new towers are assumed to be located adjacent to the existing DPV1 towers. This tower placement has the visual advantage of maintaining consistency within the corridor, and the lattice towers are less visible than concrete towers when viewed from a distance.

Based on a comparison of this alternative alone to the proposed project, visual impacts are considered to be overall similar. However, Option B has the potential to eliminate cumulative visual impacts that would occur from the future addition of an additional 500 kV transmission line (DSWTP or DPV2) within the corridor. This benefit is substantial, and results in this alternative being preferred over the proposed BEPTL.

Waste Management

As with the proposed project, the Applicant would need to implement a comprehensive program to manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes) and would comply with all LORS. The environmental impact of waste disposal for the Larger Capacity Line Alternative would be similar to that of the proposed project.

Worker Safety & Fire Protection

Similar to the proposed project and the discussion under the Eagle Mountain Alternative, worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, this alternative would have a similar impact in the areas of worker safety and fire protection as the proposed BEPTL.

Geology, Mineral Resources, and Paleontology

The geologic setting of the Larger Capacity Line Alternative would be the same as that of the proposed Midpoint Substation site. Excavation in conjunction with construction of the transmission line or substation would have similar potential to adversely impact significant paleontologic resources as the proposed BEPTL. In order to mitigate potential impacts to less than significant levels, a qualified vertebrate paleontologist would develop a program that includes pre-construction surveys; monitoring; preparation, identification, and curation of recovered specimens; and preparation of a report of findings.

Overall impacts of the Larger Capacity Line to Geology, Mineral Resources, and Paleontology would be less than significant and similar to the proposed BEPTL.

Transmission System Engineering

The Larger Capacity Line Alternative would result in construction of a new double-circuit 230 kV or single-circuit 500 kV transmission line from the Buck Boulevard Substation to the Julian Hinds Substation. This alternative, under either of the two options, could accommodate both BEP and BEP II and with Option B it could potentially form a portion of the proposed DPV2 line. From a long-range planning perspective, the Larger Capacity Line Alternative is strongly preferable to the proposed project, which has only moderate transmission capacity and would utilize important bulk power corridor space. A 500 kV line would be able to transmit approximately 1,500 to 2,000 MW and this option (Option B) is most preferred, even over a double-circuit 230 kV transmission line, which could transmit roughly a maximum of 1,040 MW. The cost of this 500 kV alternative would be substantially greater then the BEPTL Buck Boulevard to Julian Hinds single circuit line and the double circuit 230 kV line alternative. The sharing of corridor capacity would require coordination among applicants for BEP I, BEP II, SCE, the DSWTP proponent, and stakeholders in Arizona but should the BEPTL applicant negotiate with these parties, conformity with the established planning/siting principle of "sharing" new transmission facilities would occur.

The design and construction of this alternative would have to be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

WILEY WELL SUBSTATION ALTERNATIVE

ALTERNATIVE DESCRIPTION

This alternative substation location would replace the proposed Midpoint Substation, allowing an interconnection of the proposed transmission line with SCE's Devers-Palo Verde 500 kV line in a location further west. The new 230 kV transmission line from Buck Boulevard would continue along the DPV corridor to the new substation where it would connect to the DPV 500 kV No. 1 transmission line.

This alternative would have no effect on the Buck Boulevard to Julian Hinds transmission line component of the BEPTL. If that transmission line were constructed, the construction of a longer double-circuit 230 kV line to the Wiley Well Substation location would involve very minor increases in impact (slightly larger towers for the double-circuit configuration, and stringing of six conductors rather than three) over the approximately 10-mile distance between the Midpoint and Wiley Well locations.

The Petition assumed that if the Wiley Well Substation were used, the Mesa Verde transmission line route would also be used because of its shorter overall distance. However, in this analysis, that route was eliminated (see Appendix B) because it would

require creation of a new transmission line ROW and the proposed route follows existing lines along its entire length.

The alternative substation site would be accessed via Wiley Well Road, an existing paved two-lane roadway with an exit off of Interstate 10 (I-10). The substation would be located approximately 0.8 miles south of I-10, just east of Wiley Well Road and immediately adjacent to the Devers-Palo Verde corridor.

The Wiley Well Substation would be located approximately nine miles northwest of the proposed Midpoint Substation. This substation alternative would be used to transform the 161 kV or 230 kV power from the Blythe Power Plant to 500 kV, so it could be transmitted along the SCE DPV No. 1 line into the SCE system. The transmission line would include the proposed 6.7-mile transmission line route from Buck Boulevard Substation to its intersection with the existing DPV corridor (at the location of the proposed Midpoint Substation location), plus approximately 9.75 miles of additional transmission line paralleling the DPV corridor to the northwest/west to a point just east of Wiley Well Road.

The location of the alternative substation site is depicted in **ALTERNATIVES Figure 8.**

Rationale for Consideration

This alternative is being considered because it would eliminate the need for major improved access roads that would be required to transport substation and construction equipment to the site of the proposed Midpoint Substation. The Wiley Well Substation Alternative would be accessible via an existing paved roadway with an I-10 exit (Wiley Well Road).

ENVIRONMENTAL AND ENGINEERING ASSESSMENT FOR WILEY WELL SUBSTATION ALTERNATIVE

Air Quality

The types of air pollutants emitted during construction and operation of the Wiley Well Substation Alternative would be similar to those that would occur with proposed project because both would include the construction of a new substation in the same general area. Emissions during construction of both would need to be controlled to satisfy the air permitting requirements of the MDAQMD. As such, construction and operation of the Wiley Well Alternative would be subject to permit requirements. However, like the proposed project and the alternative itself, impacts would be less than significant after implementation of required mitigation.

If the Buck Boulevard to Julian Hinds transmission line were not constructed, this substation location would require construction of a longer transmission line, hence creating slightly more construction emissions. However, this substation site would eliminate the need for construction equipment to drive on unpaved access roads to reach the Midpoint Substation site, and it would eliminate the need for substantial improvement to those access roads. Therefore, overall, the two sites are considered to be approximately equivalent in air quality impacts.

Biological Resources

This alternative substation site is located in an area that provides habitat for Mojave fringe-toed lizard, a special-status species and is also within cultural habitat for desert tortoise. The Petition states that direct impacts to these species due to the loss of approximately 43.6 acres of habitat at the substation site, although much of this acreage would not be affected if the existing DPV corridor were used rather than the Mesa Verde route. Overall, this alternative has the potential for slightly greater impacts to biological resources than the proposed Midpoint Substation site.

Cultural Resources

Field surveys completed by the Applicant indicate the Wiley Well Substation site would not impact known cultural resources (BLYTHE, 2004a). However, there are several cultural resources sites near the proposed substation location (G & B, 2004a, Map V-5). The presence of these sites may indicate the presence of subsurface cultural resources that would be discovered during construction. Elimination of the need to improve access roads to the Midpoint Substation site would reduce the potential for encountering unknown cultural resources during construction at that site. If the Buck Boulevard to Julian Hinds transmission component is also constructed, there would be almost no difference in impact of the transmission line construction required to reach this alternative substation site. As a result, the Wiley Well Substation site is preferred over the proposed project in terms of cultural resources.

Hazardous Materials Management

Similar to the proposed Midpoint Substation, existing and previous land uses within the area of the Wiley Well Substation Alternative do not indicate the likely presence of hazardous materials within the construction zone. Compliance with LORS and standard mitigation would be required at both locations. Therefore, no difference in impact between the Wiley Well and Midpoint Substations would result.

Land Use

Both the Wiley Well Substation and the proposed Midpoint Substation would be located in open space far from any sensitive land uses. The Wiley Well Substation would be located on BLM land within the BLM Designated Utility Corridor K, whereas the Midpoint Substation appears to be on private land. The Wiley Well Substation Alternative would be approximately 0.8 miles south of I-10, visible from the freeway and just east of an existing paved roadway. While the proposed Midpoint Substation would be in a more isolated location, overall land use impacts of the two substation locations would be similar.

Noise and Vibration

As stated in Land Use above, both the Wiley Well Substation and the proposed Midpoint Substation would be located in open space far from any sensitive land uses. Noise generated during construction would be similar and neither would affect sensitive receptors. Therefore, overall noise impacts would be similar.

Socioeconomics

Socioeconomic impacts resulting from the Wiley Well Substation would be the same as those at the proposed Midpoint Substation site.

Soil and Water

While the proposed Midpoint Substation and associated transmission line would all be located within the Colorado hydrologic basin, the Wiley Well Alternative would be located within the Colorado basin for part of its transmission line and the Chuckwalla hydrologic basin for approximately 4.5 miles of transmission line and the alternative substation site.

Although there are dry desert washes in the vicinity of the Wiley Well Substation Alternative, there are no permanent water bodies or perennial streams in the area of this alternative. Any impacts on dry washes would be limited to temporary alteration of bed and banks (where they would intersect new access and spur roads) and increased sediment load during initial storm events following construction.

Impacts to groundwater would be the same as those of the proposed Midpoint Substation site, and groundwater would be protected through the same mitigation measures.

The potential for permanent and temporary soil disturbance would result be the same at both substation sites. Implementation of Conditions of Certification would ensure that soil impacts would be less than significant at either the proposed Midpoint Substation or the Wiley Well Substation Alternative and along either transmission line route. Operational impacts to soil and water resources would be less than significant as well. The Wiley Well Substation Alternative would eliminate the need to improve approximately five miles of access roads required for construction of the Midpoint Substation. However, it would have greater soil and water impacts associated with the construction of an additional 9.75 miles of double circuit transmission line. These greater impacts would be negligible if the Buck Boulevard to Julian Hinds transmission line were constructed. Overall, there is no substantial difference between impacts at the two substation sites.

Traffic and Transportation

As discussed in the Petition submitted by Blythe Energy, the proposed Midpoint Substation would have average daily round trips of 13 construction worker vehicles and 5 delivery trucks and peak round trips of 33 construction worker vehicles and 10 delivery trucks. Construction of the Wiley Well Substation Alternative would generate similar construction activity, but the traffic would occur primarily along Wiley Well Road rather than unpaved access roads leading to the Midpoint site.

All roadways within the alternative and proposed project area have relatively low traffic volumes (compared with their design capacities). Access from I-10 for the proposed Midpoint Substation would be from the Highway 78 exit (1.5 miles east of Buck Boulevard Substation) or the Mesa Drive exit, which is 2.5 miles west of Buck Boulevard

Substation. From there, approximately five miles of new access roads would be necessary to construct or improve in order to reach the proposed substation site along the DPV corridor. The Wiley Well Substation would be accessed from I-10 via Wiley Well Road, a two-lane paved roadway, for approximately 0.8 miles. The Wiley Well Substation Alternative may require very limited improvements to the existing DPV corridor access roads east of Wiley Well Road.

Construction and operation of the proposed Midpoint Substation or the Wiley Well Substation Alternative would be required to comply with all LORS pertinent to traffic and transportation. Overall, construction and operation transportation impacts associated with the proposed project and the Wiley Well Substation Alternative would be similar and less than significant.

Transmission Line Safety & Nuisance

Induced Current and Shock. A substation in itself does not create the risk of induced current; that risk is created by the transmission lines so this issue is not evaluated for the Wiley Well Substation Alternative.

Effects on Pacemakers. An energized transmission line and substation creates potential disruptions to pacemaker operation within and immediately adjacent to the transmission line ROW. The biological consequences of a brief, reversible pacemaker malfunction are considered to be mostly benign, with the chance of a life-threatening malfunction considered to be a rare event. Disruption impacts to pacemaker operation of the Wiley Well Substation Alternative would be similar to the proposed project and would not cause a significant change to the baseline conditions within the existing transmission line corridor.

Magnetic Fields. The location of the substation would not affect the magnetic fields associated with transmission lines, but there would be an area of increased magnetic field around the substation itself. The Wiley Well Substation location would result in an additional 9.75 miles of transmission line that would be double circuit (rather than single circuit) under this alternative. Modeling would be required to determine whether the fields would be larger or smaller. Regardless, there are no residences near the substation site so potential impacts from magnetic fields would be less than significant.

Similar to the proposed project, this alternative would not be likely to cause significant transmission line safety hazards or nuisances. However, depending on whether the Buck Boulevard to Julian Hinds line is constructed or not, the length of the double-circuit transmission line for the Wiley Well Substation Alternative would be longer than for the proposed substation location. Without the Buck Boulevard to Julian Hinds transmission line, the proposed substation location would be preferable in terms of the total length of the source of line fields to which individuals might be subjected to.

Visual Resources

The Wiley Well alternative substation site would be approximately 0.8 miles south of the I-10 and would be visible from I-10 as well as from Wiley Well Road. Though both would be located in desert open space, removed from sensitive land uses and viewers,

the proposed Midpoint Substation would be located approximately nine miles southeast of the Wiley Well Substation site and not in the viewshed of travelers on I-10.

Construction equipment and activities would be seen by various viewers, such as motorists on I-10. View durations would vary from brief to extended, but these impacts would be short term and less than significant with implementation of standard mitigation to restore temporarily disturbed areas.
The Wiley Well Substation Alternative would have a greater potential for permanent impacts to visual resources since the substation would be visible from travelers on I-10. This impact is considered to be less than significant given that the substation would be adjacent to the corridor of the 500 kV DPV transmission line. Overall, the Midpoint Substation site is preferred.

Waste Management

At any substation site, the Applicant would need to implement a comprehensive program to manage hazardous wastes and obtain a hazardous waste generator identification number (required by law for any generator of hazardous wastes) and would comply with all LORS. The environmental impact of waste disposal for the Wiley Well Substation Alternative would be similar to that of the proposed project.

Worker Safety & Fire Protection

Similar to the proposed project and the discussion under the Eagle Mountain Alternative, worker safety would be protected by adherence to LORS, which include Cal-OSHA regulations. Fire protection would also be assured by following LORS including the California Fire Code. Therefore, this alternative would have a similar impact in the areas of worker safety and fire protection as the proposed Midpoint Substation.

Geology, Mineral Resources, and Paleontology

The geologic setting of the Wiley Well Alternative would be similar to that of the proposed Midpoint Substation site.

There are no mineral resources in the areas of the Wiley Well Substation Alternative, the proposed Midpoint Substation, or with their associated transmission lines from Buck Boulevard Substation.

Excavation in conjunction with construction of the Wiley Well Substation Alternative would have similar potential to adversely impact significant paleontologic resources as the proposed Midpoint Substation. In order to mitigate potential impacts to less than significant levels, a qualified vertebrate paleontologist would develop a program that includes pre-construction surveys; monitoring; preparation, identification, and curation of recovered specimens; and preparation of a report of findings.

Overall impacts at the Wiley Well Substation Alternative to Geology, Mineral Resources, and Paleontology would be less than significant and similar to the proposed Midpoint Substation site.

Transmission System Engineering

The Wiley Well Substation Alternative would require an approximately 10 mile longer transmission line, assuming that the proposed transmission line route is followed. If the Buck Boulevard to Julian Hinds transmission component of the proposed BEPTL is constructed, this substation would require a second circuit on that set of transmission poles.

The design and construction of this alternative would be in compliance with applicable engineering laws, ordinances, regulations and standards for both the alternative and the alternative variation. Impacts related to facility design would be similar to the proposed project.

NO PROJECT ALTERNATIVE

The "no project" alternative under CEQA and the "no action" alternative under NEPA define the scenario that would exist if the project were not constructed. In the CEQA analysis, the "no project" alternative is compared to the proposed project and determined to be either superior, equivalent, or inferior to it. The CEQA Guidelines state that "the purpose of describing and analyzing a No Project Alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (Cal. Code Regs., tit. §15126.6(i)). Toward that end, the "no project" analysis considers "existing conditions" and "what would be reasonably expected to occur in the foreseeable future if the project were not approved…" (§15126.6(e)(2)). Under NEPA, the "no action" alternative is used as a benchmark of existing conditions by which the public and decision makers can compare the environmental effects of the proposed action and the alternatives.

While the BEP project currently has adequate transmission available to transmit its full 520 MW, if the BEPTL were not constructed, Blythe Energy would still have constraints on its ability to transmit energy generated at the Blythe Power Plant directly into California markets. In the absence of the BEPTL, it seems somewhat more likely that the DSWTP would proceed. While there has been no public activity on that project since workshops on the Draft EIS/EIR in the spring of 2003, a Final EIS/EIR could be published quickly, followed by a BLM Record of Decision and action by the IID. Additionally, Energy Commission staff is preparing its Final Staff Assessment for the BEP II project, which may spur activity on the DSWTP. The applicant for BEP II has intervened in the petition for the BEPTL and supports a transmission solution that would meet the needs of both BEP I and BEP II. Therefore, it may be possible, in the absence of the BEPTL, to secure joint participation in the DSWTP or a similar 500 kV line sponsored for example by Blythe Energy which would provide more control of the project.

The DSWTP is evaluated in this PSA as an alternative to the proposed BEPTL. Given its greater length (extending to Devers Substation and not only to Julian Hinds), it would create greater environmental impacts than the proposed transmission line, but it would also offer substantially greater transmission capacity (sufficient to accommodate both BEP and BEP II and imports from Arizona since it is proposed as either a double circuit 230 kV line or a single circuit 500 kV line. This larger capacity line has the ability to

reduce cumulative impacts in the DPV corridor because, if constructed at 500 kV, it could also alleviate the need for the Blythe to Devers portion of the DPV2 project, minimizing the number of new lines added to the designated Utility Planning Corridor K. (At full build out, there could be three 500 kV lines and one 230 kV line in the designated corridor.)

The construction of the BEPTL is unlikely to have an effect on the implementation of the DPV2 project, because the primary purpose of that project is to provide increased imports of electricity generated in the Palo Verde area of Arizona to the Devers Substation. On the other hand it may be in the state's best interests to coordinate the need for that line with BEP I and BEP Ii. This route, at 230 miles, is about 160 miles longer than the proposed BEPTL. The DPV2 line is not included in the No Project scenario.

In summary, the No Project Alternative has the potential to provide adequate transmission capacity, but Blythe Energy's timing and control objectives while important but not imperative would not be met. The DSWTP, while it has the potential to reduce cumulative impacts in the corridor, would have greater environmental impacts due to its greater length.

APPENDIX B: ALTERNATIVES ELIMINATED FROM FULL CONSIDERATION

Alternatives analyzed in detail are presented in Appendix A. This appendix addresses the following categories of alternatives that are not pursued for full analysis in this PSA:

- Alternative transmission line routes and sub-alignments
- Transmission technology alternatives
- Demand-side management
- Renewable resource alternatives.

These alternatives, and the reasons they were not considered in detail in this analysis, are described below.

SUB-ALIGNMENTS

In addition to entire transmission line route alternatives, five sub-alignments were suggested in various forums. Each is briefly described below. Because sub-alignments are generally created to avoid a specific impact, determination of the need to fully evaluate these sub-alignments is left to the staff analysts for the relevant issue areas. The sub-alignments are:

- **North of I-10 Sub-Alignment**. This sub-alignment was presented as a segment of Alternative C from the DSWTP Draft EIS/EIR. This alignment would cross to the north of I-10 at the eastern point of the Alligator Rock Sub-Alignment and would parallel I-10 to the north until (1) Red Cloud Road where it would join the East of Julian Hinds Sub-Alignment or (2) Hayfield Road where it would join the Proposed Project into Julian Hinds Substation. This sub-alignment would create a third transmission path in this area (in addition to DPV to the south, and the Eagle Mountain to Julian Hinds line to the north), and does not offer any apparent environmental benefit.
- **Alligator Rock Sub-Alignment**. This sub-alignment was included in the Petition as Sub-Alignment 1. This 4.7 miles sub-alignment would follow the existing DPV route south of Alligator Rock. While it would make the BEPTL less visible from I-10 by moving it to the south, it would result in the line being located in the center of the Alligator Rock ACEC, an area with high value for cultural resources. The sub-alignment would directly cross four cultural resources, most notably CA-RIV-1814, North Chuckwalla Mountain NRHP Quarry District (BLYTHE, 2004g)
- **East of Julian Hinds Sub-Alignment**. This sub-alignment, three miles shorter than the proposed route, would cross I-10 to the north near Red Cloud Road and would meet up with the Eagle Mountain Alternative to the east of Julian Hinds Substation paralleling the corridor into the substation. While presenting an overall shorter route, this sub-alignment would have greater impacts in visual and cultural resources.
- **Mesa Verde Sub-Alignment**. This route option would turn west about 0.5 miles south of I-10 rather than following the existing 161 kV corridor to the DPV corridor, and then join the DPV corridor about 5 miles further west. This sub-alignment was

developed for use with the Mesa Verde or Wiley Well Substation Alternatives, because it would be shorter than the proposed route, but it would also create a new transmission line corridor on undisturbed land near the I-10.

- **Hobsonway Sub-Alignment.** A scoping comment by the City of Blythe indicated a concern about the new 230 kV towers being too close to the airport. If the BEPTL followed the existing 161 kV corridor (south across Hobsonway and I-10) rather than following Hobsonway to the west, this concern would be alleviated.

INTERSTATE 10 ALTERNATIVE

Alternative Description

This alternative was presented by Blythe Energy in the Petition and would include a new 65-mile transmission line route that would parallel I-10 for most of its length. The I-10 Alternative is the same as the proposed project for approximately 14 miles, but for the remainder of the route it would be closer to the highway.

For the easternmost 18 miles, the I-10 Alternative would be the same as the Eagle Mountain Alternative, paralleling the existing SCE Blythe-Eagle Mountain 161 kV transmission line. Just east of the Ford Dry Lake exit, where the Eagle Mountain Alternative would cross to the south side of I-10, the I-10 Alternative would remain north of the interstate for approximately five miles farther until a jog in the roadway where the route would cross to the south, but would remain parallel and adjacent to I-10. From the Corn Springs Road exit where the Eagle Mountain Alternative would cross I-10 to the north to Desert Center, the I-10 Alternative would be the same as the proposed project for approximately 10 miles. West of Desert Center the proposed project corridor would diverge slightly to the south while the I-10 alternative would remain adjacent to I-10. At Hayfield Road the two routes would rejoin one another and would cross to the north of I-10 and parallel Hayfield Road north and then east into Julian Hinds Substation.

Rationale for Elimination

Although this alternative route would be two miles shorter than the proposed BEPTL, it would have greater visual impacts to travelers on I-10 because the route would be closer to highway (within 300 to 500 feet for 35 miles) and would cross I-10 at four locations (as opposed to twice by the proposed project). In addition, the transmission line would introduce a new visual element, because approximately 30 miles of this route would not be adjacent to existing transmission. The route would also pass through the Palo Verde Mesa Area of Sensitivity for cultural resources. Due to the much greater impacts to visual resources and no significant reduction of other project impacts, this alternative was eliminated from full consideration.

ACCESS TO CAISO VIA MEAD SUBSTATION ALTERNATIVE

Alternative Description

This alternative would include a new approximately 200-mile transmission line from Blythe to the Mead Substation in southern Nevada.

Rationale for Elimination

This alternative would result in greater cost and time to permit due to the coordination necessary for interstate construction. Although contractual sales could occur at Mead, the destination of power flow, as stated in the Applicant's project objectives, is not to Nevada but to California. According to Blythe Energy (Petition, pg. 3-42), it would be difficult, if not impossible, to sell the power to the California market. Construction duration and impacts would be significantly greater as well with approximately 133 miles more of construction. Therefore, this alternative would create greater environmental impact, and would not meet project objectives.

DPV1/DPV2 ALTERNATIVE

Alternative Description

The DPV1/DPV2 Alternative would eliminate the 67 miles of new 230 kV line to Julian Hinds and allow the BEPTL to connect only to the DPV corridor. This alternative would include installation of a new double-circuit 230 kV line from the expanded Buck Boulevard Substation to a new Midpoint Substation or an alternative substation. Both 230kV lines would terminate at Midpoint Substation. At the Midpoint Substation or an alternative substation a 230 kV/500 kV transformer would be installed. Initially the line would loop into the existing DPV line and the station would be designed to allow for DPV2 to also loop into Midpoint Substation when it is completed.

Rationale for Elimination

This alternative was eliminated because the existing DPV1 transmission line is near capacity and the status of SCE's DPV2 project is uncertain. Complete dependence on DPV1 capacity may reduce Blythe Energy's generation capacity factor while awaiting the construction of DPV2. Although the environmental and cumulative impacts of 67 miles of new transmission line would be eliminated, this alternative would depend on another project (DPV2) that has to go through a need analysis, the environmental permitting process, and may or may not be built.

ELIMINATE MIDPOINT SUBSTATION ALTERNATIVE

Alternative Description

This alternative would eliminate the Midpoint Substation and would relocate the 230 kV/500 kV transformer at Buck Boulevard Substation or at an adjacent new Hobsonway Substation. If Buck Boulevard were not used, then this alternative would include the construction of a new Hobsonway Substation adjacent to the Buck Boulevard Substation (1,500 feet). The 500 kV line would loop DPV into Buck Boulevard Substation or Hobsonway Substation (or a PV-Buck Boulevard line could terminate there and a new line from Buck Boulevard to Devers could start). Buck Boulevard Substation would have to be expanded, most likely in the open space adjacent to the substation to the north.

Rationale for Elimination

This alternative would require construction of a 500 kV corridor with either a 500 kV DCTL or two 500 KV SCTLs between Midpoint and Buck Boulevard (or Hobsonway). DCTL 500 kV lines are not generally acceptable for reliability purposes; therefore a very wide ROW would be required. The Applicant says that a 500 kV corridor with taller towers could create conflict with the airport and could result in loss of agricultural lands south of Hobson way.

The Applicant would have less control over expansion of Buck Boulevard Substation than it would at a new Midpoint Substation. The proposed Midpoint Substation, which is in an isolated location, may offer expansion opportunities in the future. Overall the construction of nearly 7 miles of 500 kV transmission line would create greater impacts in a more developed and visible area than the construction of the Midpoint Substation.

MESA VERDE SUBSTATION ALTERNATIVE

Alternative Description

This alternative substation would be located northeast of the existing DPV and proposed DPV2 ROW at the point where the corridor turns from northwest-southeast to east-west. This substation alternative could be used with either the proposed transmission line route or with the Mesa Verde Sub-Alignment.

Rationale for Elimination

This alternative would require 5.5 miles of heavy-duty access road construction to reach the substation from either Buck Boulevard if using the Mesa Verde Sub-Alignment or if access is from Wiley Well Road. This substation location would also have greater visibility from I-10 and the Mesa Verde area (approximately one mile south of I-10). Therefore, this alternative was eliminated from full consideration because it would not reduce impacts of the proposed Midpoint Substation, it would require longer access road improvements, and it would create greater impacts to visual resources.

OTHER TRANSMISSION ALTERNATIVES

Direct Current Transmission

Alternative Description

This alternative would use a direct current (DC) line for the proposed project for whatever route is found to be environmentally superior.

Rationale for Elimination

Use of a DC line would include a longer construction time. There would be a higher cost and additional construction for each DC terminal (i.e., converter stations). In addition, there would be less flexibility for interconnections with other transmission lines in the CAISO system. Overall, this alternative would not eliminate impacts of the proposed alternating current (AC) line without causing greater temporary and permanent construction impacts and duration.

Underground Construction

Alternative Description

This alternative would require the construction of the new transmission line underground. It is feasible to construction 230 kV lines underground, as demonstrated by several recent PG&E transmission projects, however, no underground line of this distance has been built and the costs would be very high.

Rationale for Elimination

Underground construction requires a continuous trench in which to install duct banks that would carry the electrical cables. This amount of trenching would create significant impacts to soils/erosion, cultural resources, biological resources. Longer construction time and associated impacts with a much higher cost (not a CEQA issue) would also occur. Operational impacts would also be greater associated with maintenance and access to the lines. Repair times would be much longer as well. With the exception of permanent visual resource impacts that would be eliminated, underground construction would cause much greater impacts to most issue areas than the proposed project.

CONSERVATION AND DEMAND SIDE MANAGEMENT

Alternative Description

Demand-side management programs are designed to reduce customer energy consumption. Regulatory requirements dictate that supply-side and demand-side resource options should be considered on an equal basis in a utility's plan to acquire lowest cost resources. One goal of these programs is to reduce overall electricity use. Some programs also attempt to shift such energy use to off-peak periods.

Demand-side management includes a variety of approaches, including energy efficiency and conservation, building and appliance standards, load management and fuel substitution. Since 1975, the displaced peak demand from all of these efforts has been roughly the equivalent of eighteen 500 MW power plants. The annual impact of building and appliance standards has increased steadily, from 600 MW in 1980 to 5,400 MW in 2000, as more new buildings and homes are built under increasingly efficient standards (CEC 2003). Savings from energy efficiency programs implemented by utilities and state agencies have also increased (from 750 to 3,300 MW). During the summer of 2001, between 70 to 75 percent of the peak load reductions came from consumer conservation efforts, while 25 to 30 percent came from energy efficiency investments (CEC 2003).

California Energy Commission

One alternative to a power generation project could be programs to reduce energy consumption. In spite of the State’s success in reducing demand in 2001, California continues to grow and overall demand is increasing. The 2002-2012 Electricity Outlook Report (CEC 2002) concludes that, despite exceptional conservation efforts in 2001, voluntary demand reduction will likely decrease over time.

While conservation and demand reduction programs are not considered as alternatives to a proposed project, the Energy Commission is responsible for several such programs, the most notable of which are energy efficiency standards for new buildings and for major appliances. These programs are typically called “energy efficiency,” “conservation,” or “demand side management” programs. One goal of these programs is to reduce overall electricity use; some programs also attempt to shift such energy use to off-peak periods.

The Energy Commission’s Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The Energy Commission adopted new standards in 2001, as mandated by Assembly Bill 970 to reduce California’s electricity demand. The new standards went into effect on June 1, 2001. Since 1975, the displaced peak demand from these conservation efforts has been roughly the equivalent of eighteen 500 MW power plants. The annual impact of building and appliance standards has increased steadily, from 600 MW in 1980 to 5,400 MW in 2000, as more buildings and homes are built under increasingly efficient standards (CEC 2002).

After the California Independent System Operator (CA ISO) ordered rolling blackouts in January 2001 as a result of statewide electricity shortages, conservation efforts initially resulted in dramatic reductions in electricity use. Electricity use for each month in 2001 ranged from 5 percent to 12 percent less than it was in 2000. However, by 2002 demand began to increase as the memories of rolling blackouts faded.

The Energy Commission is also responsible for determining what the state’s energy needs are in the future, using 5- and 12-year forecasts of both energy supply and demand. The Energy Commission calculates the energy use reduction measures discussed above into these forecasts when determining what future electricity needs are, and how much additional generation will be necessary to satisfy the state’s needs.

Having considered all of the demand side management that is “reasonably expected to occur” in its forecasts, the Energy Commission then determines how much electricity is needed. The most recent estimation of electricity needs is found in the 2002-2002 Electricity Outlook Report (available on the Energy Commission’s website).
The California Energy Commission’s forecasts contain assumptions regarding conservation. As detailed in the Energy Commission’s 2002-2012 Electricity Outlook Report, February 2002, “The uncertainty about what caused the demand reduction in the summer of 2001, in particular, the uncertainty about how much was due to temporary, behavioral changes and how much was due to permanent, equipment changes contributes to increased uncertainty about future electricity use trends. The three scenarios discussed in this chapter were developed to provide a range of possible electricity futures that account for the demand reductions of the summer of 2001 and uncertainties about future demand reductions and future economic growth. These scenarios combine different levels of temporary and permanent reductions to capture a reasonable range of possible electricity futures.”

The Energy Commission report describes the three scenarios as follows: "The most likely scenario, labeled "Slower Growth in Program Reductions, Faster Drop in Voluntary Reductions . . .," assumes that program benefits increase in 2002 but stay constant after that, while voluntary impacts on energy consumption reduction decrease more rapidly starting with a drop of 1,500 MW in 2002. The lower scenario, labeled "Slow Growth in Program Reductions, Slow Decline in Voluntary Reductions," assumes that program impacts grow from 2001 to 2006 while benefits of voluntary reductions drop slowly over the period after a drop of 1,000 MW in 2002. The higher scenario, labeled 'No growth, then drop in Program Reductions, No Voluntary Reductions," assumes that there are no benefits from voluntary actions in 2002 and after, while benefits of programs stay constant until 2005 and then start declining."

California Public Utilities Commission

In addition, the CPUC supervises various demand-side management programs administered by the regulated utilities, and many municipal electric utilities have their own demand-side management programs. The combination of these programs constitutes the most ambitious overall approach to reducing electricity demand administered by any state in the nation. In spite of the state's success in reducing demand to some extent in 2001, California continues to grow and overall demand is increasing. Economic and price considerations but also long-term impacts of state-sponsored conservation efforts, such as the Governor's 20/20 rebate program and new appliance efficiency standards are considered in load forecasts. However, there are electricity-trend uncertainties about how much the demand reduction in the summer of 2001 was due to temporary behavioral changes and how much was due to permanent equipment changes.

Rationale for Elimination

Demand management can reduce energy consumption, thus reducing the need for power generation from BEP. If demand were sufficiently reduced in southern California, all the effects of the proposed project would be avoided. However, demand-side management has been shown to be effective only at a relatively small scale, but not nearly on a scale that would be required to replace the 520 MW generated by the BEP. The Warren-Alquist Act specifically prohibits the Energy Commission from considering conservation programs as alternatives to a proposed generation project. Public Resources Code Section 25305(c) states that conservation, load management, or other demand reducing measures reasonably expected to occur shall be explicitly examined in the Energy Commission's energy forecasts and shall not be considered as alternatives to a proposed facility during the siting process. Therefore, the approximate effect of such programs has already been accounted for in the agency's "integrated assessment of need," and the programs would not in themselves be sufficient to substitute for the additional generation calculated to be needed. The forecast that will address this issue is the Energy Commission's California Energy Outlook. The Warren-Alquist Act was amended in 1999 to delete the necessity of an Energy Commission finding of "need" in power plant licensing cases.

RENEWABLE RESOURCES

Alternative Description

Aggressive efforts are now being made to increase the renewable resource component of California's generation supply. In the year 2002, California had over 7,000 MW of renewable energy capacity, including solid-fuel biomass, geothermal, wind, small hydroelectric (30 MW or less), concentrating solar power (CSP), photovoltaic systems (PV), landfill gas, digester gas, and municipal solid waste (MSW) facilities (CEC 2003). These facilities produced about 28,900 GWh in 2002, about 11 percent of the electricity used in California (CEC 2003).

Staff examined the principal renewable electricity generation technologies that could serve as alternatives to the proposed project and do not burn fossil fuels. These technologies are geothermal, solar, hydroelectric, wind, and biomass. Each of these technologies could be attractive from an environmental perspective because of the absence or reduced level of air pollutant emissions. However, these technologies also can cause environmental impacts and have feasibility problems.

Geothermal. Geothermal technologies use steam or high-temperature water (HTW) obtained from naturally occurring geothermal reservoirs to drive steam turbine/generators. The technology relies on either a vapor dominated resource (dry, super-heated steam) or a liquid-dominated resource to extract energy from the HTW. Geothermal is a commercially available technology, but it is limited to areas where geologic conditions result in high subsurface temperatures. There are no geothermal resources in the project vicinity, making this technology an infeasible alternative.

Biomass. Biomass generation uses a waste vegetation fuel source such as wood chips (the preferred source) or agricultural waste. The fuel is burned to generate steam. Biomass facilities generate substantially greater quantities of air pollutant emissions than natural gas burning facilities, though these emissions may be partially offset by the reduction in emissions from open-field burning of these fields. In addition, biomass plants are typically sized to generate less than 20 MW, which is substantially less than the capacity of the 520 MW BEP.

Solar. Currently, there are two types of solar generation available: solar thermal power and photovoltaic (PV) power generation.

Solar thermal power generation uses high temperature solar collectors to convert the sun's radiation into heat energy, which is then used to run steam power systems. Solar thermal is suitable for distributed or centralized generation, but requires far more land than conventional natural gas power plants. Solar parabolic trough systems, for instance, use approximately five acres to generate one megawatt.

Photovoltaic (PV) power generation uses special semiconductor panels to directly convert sunlight into electricity. Arrays built from the panels can be mounted on the ground or on buildings, where they can also serve as roofing material. Unless PV systems are constructed as integral parts of buildings, the most efficient PV systems require about four acres of ground area per megawatt of generation.

Solar resources would require large land areas in order to meet the project objective to generate 520 MW of electricity. For example, assuming that a parabolic trough system was located in a maximum solar exposure area, such as in a desert region, generation of 520 MW would require 2,600 acres. For a PV plant, generation of 520 MW would require 2,080 acres.

While solar generation facilities do not generate problematic air emissions and have relatively low water requirements, there are other potential impacts associated with their use. Construction of solar thermal plants can lead to habitat destruction and visual impacts. PV systems can also have negative visual impacts, especially if ground-mounted. Furthermore, PV installations are highly capital intensive and manufacturing of the panels generates some hazardous wastes.

Both solar thermal and PV facilities generate power during peak usage periods since they collect the sun's radiation during daylight hours. However, even though the use of solar technology may be appropriate for some peaker plants, solar energy technologies cannot provide full-time availability due to the natural intermittent availability of solar resources.

Wind. Wind carries kinetic energy that can be utilized to spin the blades of a wind turbine rotor and an electrical generator, which then feeds alternating current (AC) into the utility grid. Most state-of-the-art wind turbines operating today convert 35 to 40 percent of the wind's kinetic energy into electricity. A single 1.5 MW turbine operating at a 40 percent capacity factor generates 2,100 MWh annually. Modern wind turbines represent viable alternatives to large bulk power fossil power plants as well as small-scale distributed systems. Wind turbines being manufactured now have power ratings ranging from 250 watts to 1.8 MW, and units larger than 4 MW in capacity are now under development (AWEA 2004). The average capacity of wind turbines today is 750 kW (CEC 2004k).

California was the first U.S. state in which large wind farms were developed, beginning in the early 1980's, and the state still leads the nation in wind power generation. However, 16 other states are considered to have greater overall wind generation potential. California currently has an installed capacity of 2,051 MW, and an additional over 300 MW are planned (AWEA 2004).

The perception of wind as an emerging energy source reached a peak in the early 1980s, when wind turbine generators to convert wind power into electricity were being installed in California at a rate of nearly 2,000 per year. Progress slowed a few years later, however, as startup tax subsidies disappeared and experience demonstrated some deficiencies in design. At the present time, technological progress again has caught up, contributing lower cost, greater reliability, and reason for genuine optimism for the future. A major factor has been the inclusion of environmental externalities by electric utilities in their resource planning programs. The more penetrating analysis, which has included these potential costs, has shown wind power to be substantially more economically attractive than was previously thought.

The technology is now well developed, and can be used to generate significant amounts of relatively low-cost power.

Wind turbines can create other environmental impacts, as summarized below (AWEA 2004):

- Erosion can be a concern in certain habitats such as the desert or on mountain ridgelines. Standard engineering practices can be used to reduce erosion potential.
- Birds collide with wind turbines. Avian deaths have become a concern at Altamont Pass in California, which is an area of extensive wind development and also high year-round raptor use.
- Wind energy can negatively impact birds and other wildlife by fragmenting habitat, both through installation and operation of wind turbines themselves and through the roads and power lines that may be needed.
- Bat collisions at wind plants generally tend to be low in number and to involve common species, which are quite numerous. A high number of bat kills at a new wind plant in West Virginia in the fall of 2003 has raised concerns, and the problem of bat mortality at that site is currently under investigation.
- Visual impacts of wind power fields can be significant, and installation in scenic and high traffic areas often results in strong local opposition.
- Noise was an issue with some early wind turbine designs, but it has been largely eliminated as a problem through improved engineering and through appropriate use of setbacks from nearby residences. Aerodynamic noise has been reduced by changing the thickness of the blades' trailing edges and by making machines "upwind" rather than "downwind" so that the wind hits the rotor blades first, then the tower (on downwind designs where the wind hits the tower first, its "shadow" can cause a thumping noise each time a blade passes behind the tower). A small amount of noise is generated by the mechanical components of the turbine.

In open, flat terrain, a utility-scale wind plant would require about 60 acres per MW of installed capacity. However, only 5 percent (3 acres) or less of this area would actually be occupied by turbines, access roads, and other equipment. The remainder could be used for other compatible uses such as farming or ranching. A wind plant located on a ridgeline in hilly terrain will require much less space, as little as two acres per MW (AWEA 2004).

Hydroelectric Power. While hydropower does not require burning fossil fuels and may be available, this power source can cause significant environmental impacts primarily due to the inundation of many acres of potentially valuable habitat and the interference with fish movements during their life cycles. As a result of these impacts, it is extremely unlikely that new hydropower facilities could be developed and permitted in California within the next several years.

Rationale for Elimination

Use of renewable generation technologies would avoid the specific impacts associated with the construction and operation of the proposed BEPTL project, but new transmission would also be required from the renewable generation locations, creating impacts similar to those of the proposed project. In addition to the reliability and feasibility issues discussed above, use of renewable resources would be inconsistent with the

objectives of the proposed BEPTL, which are focused on creating the ability for Blythe Energy to transmit the electricity it generates at Blythe to the southern California market in a cost-effective manner.

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