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08-AFC-1
DATE MAR 27 2008
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March 27, 2008

Mr. Christopher Meyer
Project Manager
California Energy Commission
1516 Ninth Street MS-15
Sacramento, CA 95814

Dear Mr. Meyer:

On behalf of Avenal Power Center, LLC, and pursuant to our recent discussions, enclosed are one original, 49 paper copies, and 75 CD-ROM copies of the Supplement to the Avenal Power Center, LLC Application for Certification (08-AFC-1).

If you have questions regarding this submittal or other aspects of the project, please call Jim Rexroad at (713) 275-6147, or me at the telephone number in the letterhead.

Sincerely,

Joseph L. Stenger

Joseph L. Stenger
Project Director

Enclosures

cc. Jim Rexroad, Avenal Power Center, LLC (w/ 1 paper enclosure and one CD)

Avenal Power Center, LLC
500 Dallas Street, Level 31
Houston, TX 77002

March 27, 2008

Ms. Melissa Jones
Executive Director
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Dear Ms. Jones:

Avenal Power Center, LLC hereby submits the enclosed Supplement to the Application for Certification (AFC) for Avenal Energy, located in the City of Avenal, Kings County, California. The enclosed supplement augments the AFC (08-AFC-1) submitted to your office dated February 13, 2008. This supplement is designed to respond directly to information needs identified to achieve data adequacy for the AFC as outlined in your memorandum to the commissioners dated March 21, 2008.

As an officer of Avenal Power Center, LLC, I hereby attest under penalty of perjury that the contents of this application supplement are true and accurate to the best of my knowledge.

Dated this 27 day of March, 2008.

Sincerely,

Stuart Zisman
Vice President
Avenal Power Center, LLC

Joseph Forbes
Senior Lawyer

Enclosure

cc. Jim Rexroad, Avenal Power Center, LLC

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SUPPLEMENT TO THE APPLICATION FOR CERTIFICATION
AVENAL ENERGY

1.0 INTRODUCTION

This Supplement to the Application for Certification (AFC) for Avenal Energy (08-AFC-1) provides clarifying and augmenting information and minor project status updates. The clarifying and augmenting information respond directly to information needs identified to achieve data adequacy for the Avenal Energy AFC, as outlined in Ms. Melissa Jones' memorandum to the commissioners dated March 21, 2008. Information is provided in the following sections:

- Section 2.0 – Air Quality
- Section 3.0 – Biological Resources
- Section 4.0 – Cultural Resources
- Section 5.0 – Socioeconomics
- Section 6.0 – Transmission System Design
- Section 7.0 – Water Resources

Back-up information for these sections is provided in attachments.

2.0 AIR QUALITY

One AFC data adequacy item has been identified related to air quality; the need for a letter of application completeness from the San Joaquin Valley Air Pollution Control District (SJVAPCD). The letter of completeness from SJVAPCD is provided in Attachment A.1. A letter of completeness from the United States Environmental Protection Agency (EPA) for the Prevention of Significant Deterioration (PSD) permit application is also provided in Attachment A.1.

As part of interacting with EPA staff for their review of the PSD application, an error was discovered on page 6.2-20 of the AFC. A corrected page 6.2-20 was submitted to EPA and is provided as Attachment A.2. The correction occurs in the first two lines of page 6.2-20 where the sentence has been changed to reflect that only nitrogen dioxide (NO2) and carbon dioxide (CO) emissions from the project will exceed the applicable PSD thresholds listed in the federal PSD regulations. Particulate matter less than or equal to 10 microns in diameter (PM10) will not exceed the applicable PSD threshold as was indicated on this page of the AFC.

3.0 BIOLOGICAL RESOURCES

The biological resources section of the AFC does not have any identified data adequacy deficiencies. This section is provided to update CEC staff on meetings with resource agencies that have occurred since the AFC was submitted.

Avenal Power Center, LLC met with Ms. Sue Jones and Ms. Shelley Buranek from the United States Fish and Wildlife Service (USFWS) on March 11, 2008, and with Mr. Justin Sloan from the California Department of Fish & Game (CDFG) on March 18, 2008 to discuss the project.

Avenal Power Center, LLC provided agency staff with copies of the project description and biological resources sections of the AFC in conjunction with these meetings. The focus of the meeting with USFWS was to discuss alternatives available to mitigate project impacts to the kit fox, and the focus of the meeting with CDFG was to discuss alternatives available to mitigate impacts to the kit fox and the state-protected Swainson's hawk. Based on these meetings, Avenal Power Center, LLC is pursuing mitigation via a single mitigation bank that will provide habitat for both the kit fox and the Swainson's hawk, which is one of the options outlined in the AFC. The meetings with USFWS and CDFG provided additional input that indicates this will be feasible and that the mitigation ratios presented in the AFC for short-term and long-term disturbances are acceptable. Avenal Power Center, LLC will continue to keep California Energy Commission (CEC) staff updated as mitigation bank arrangements develop. Other developments occurring as a result of these meetings are:

- CDFG requested that the pre-construction clearance survey committed in Section 6.6.2.5 of the AFC include pre-construction clearance survey for the burrowing owl at the margins of the 148-acre site and extending outward 300 feet beyond the site boundary in accordance with the burrowing owl consortium recommendations. Avenal Power Center, LLC hereby incorporates this measure as a clarification to the scope of the pre-construction clearance survey work.
- CDFG requested that the avoidance period for the tri-colored blackbird referenced in Section 6.6.2.5 of the AFC be extended to cover the period of mid-March through Mid-August, if these birds are found to be present at the water treatment plant when construction is planned to begin. Avenal Power Center, LLC hereby incorporates this extended avoidance period as a modification to the tri-colored blackbird avoidance measure in AFC Section 6.6.2.5. CDFG staff clarified that this measure need only be implemented if the tri-colored blackbird colony is found to be present at the water treatment plant prior to construction. If the colony arrives at the water treatment plant after construction in the buffer zone has begun, then no mitigation is required.

4.0 CULTURAL RESOURCES

Various individual data adequacy items have been identified for the cultural resources section of the AFC, but most are related to two overlying data needs: (1) a need for an historic architecture survey; and (2) a need for a new California Historical Records Information System (CHRIS) records search. The historic architecture survey and the new CHRIS records search have been completed and results are provided as attachments to this Supplement. Each of the data adequacy items are addressed below.

4.1 Mitigation Measures for Impacts to Historical Architectural Resources, if any are Identified

The historical architecture survey did not identify any historical architectural resources in the project vicinity. Therefore, there will be no impact to historical architectural resources and no mitigation is proposed.

4.2 New CHRIS Records Search

As described in Section 6.7.1.2 of the AFC, CHRIS records searches were conducted for the project in 2001 and 2006 and did not identify any important cultural resources in the project vicinity. New CHRIS records searches were conducted in March 2008 encompassing all areas within 0.50 mile of the electric transmission line, all areas within 1.0 mile of the site and 0.25 mile of the water and gas pipelines. The results of the new records searches are provided in Attachment C.1 and are hereby incorporated to supplement Section 6.7.1 of the AFC.

4.3 Contact with Kings County and City of Avenal

Pacific Legacy, Inc. contacted Kings County and the City of Avenal on behalf of the applicant to determine if these agencies have cultural resources in the project vicinity listed by ordinance or otherwise identified. Neither of these agencies has identified any cultural resources in the project vicinity. Pacific Legacy contacted Sydney Highfill and Tony Leist with the Kings County Planning Department on March 7, 2008 (Sydney.highfill@co.kings.ca.us; toni.leist@co.kings.ca.us). Pacific Legacy also contacted Steve Sopp, City of Avenal Planning Department on March 12, 2008 (559-386-5766).

4.4 Contact with Local Historical and Archaeological Societies

Pacific Legacy, Inc. has contacted local historical and archaeological societies on behalf of the applicant to determine if recognized local cultural resources are present in the project vicinity. Pacific Legacy called and e-mailed the Fresno City and County Historical Society on March 7, 2008 and March 21, 2008, (frhistsoc@aol.com; 559-441-0862) In addition, letters were sent to the Fresno City and County Historical Society and the Fresno County Archaeological Society. Copies of these letters are provided in Attachment C.2. No responses to the telephone or e-mail contacts or letters have been received to date. These contacts are not expected to result in any cultural resources being identified in the project vicinity, since the 2001, 2006 and 2008 literature and records searches conducted to date have not identified any cultural resources in the vicinity, field work has already been completed and found no cultural resources, and because of the intensive agricultural characteristic of the area, virtually all of the area is developed agricultural land (e.g., see AFC Figures 2.1-3B, 2.1-5A, and 2.1-5B). The applicant will promptly provide to CEC staff any responses, if received, from these contacts.

4.5 Qualified Persons Performing New Literature/Records Search and Technical Report

Cultural resources work conducted for this Supplement including, but not limited to the literature/records search, was performed by Pacific Legacy under the direction of Dr. Tom Jackson. Dr. Jackson's Curriculum Vitae (CV) is provided in each of the cultural resources technical reports included in Appendix 6.7-1 of the AFC. With the exception of the historic architecture report described below, there are no new technical reports related to cultural resources because no cultural resources have been identified in the project vicinity.

4.6 DPR 523 Forms for Cultural Resources, if Found

There is no confidential cultural resources filing for this project and no DPR 523 forms for cultural resources for this project because no cultural resources have been identified in the project vicinity. DPR 523 forms that are not confidential are included in the historic architecture report described below for structures that are not historical resources but are more than 45 years old.

4.7 CHRIS Survey Results on USGS 7.5 Minute Quadrangle Maps

The CHRIS records search results are provided on USGS 7.5 Minute Quadrangle Maps base in Attachment C.1.

4.8 Copies of Reports Identified by CHRIS Database Search

The CHRIS database search identified five cultural resource reports for the project area. The most relevant of these three reports is a 2001 report by Dr. Jackson for the Avenal Energy project. This report is included in Appendix 6.7-1 of the AFC. As reported in the CHRIS records search results in Attachment C.1., neither this report nor the remaining four reports identified any cultural resource sites in the vicinity of the project. However, copies of the remaining four reports have been ordered and will be provided to CEC staff promptly upon their receipt.

4.9 Name and Qualifications of Person Doing the Historic Architecture Survey

The historic architecture survey was conducted by Ms. Wendy Tinsley. Ms. Tinsley meets the Secretary of the Interior's Professional Qualifications Standards for Historic Preservation Professionals in the disciplines of History and Architectural history and the draft expanded standards in the disciplines of Historic Preservation and land Use/Community Planning. Ms. Tinsley's CV is provided in the historic architecture survey report provided in Attachment C.3.

4.10 Historic Architecture Survey and Technical Report

A technical report of a survey conducted by a qualified architectural historian for structures and districts that appear to be older than 45 years is provided in Attachment C.3.

4.11 Incorporating New Non-Confidential Information into the AFC

The results of additional cultural resource evaluations conducted are incorporated into the AFC throughout this supplement. As described above, no new cultural resource sites have been identified, confidential or otherwise. As described in Attachment C.3, no historical resources were identified by the historic architecture survey. Two items were identified that are older than 45 years, however, Ms. Tinsley notes in the historic architecture survey report that these items do not appear to meet the definition of a historic resource.

4.12 Update Literature Search

The cultural resource literature search is updated with the CHRIS search result reported in Attachment C.1.

4.13 Methods and Findings of Historic Architecture Survey

The methods and findings of the historic architecture survey are incorporated into the technical report enclosed as Attachment C.3.

4.14 DPR 523 Forms for Architectural Resources

DPR 523 forms are provided in Attachment C.3 for two items identified by the architectural historian as being more than 45 years old, even though the architectural historian determined that these items do not appear to meet the definition of a historical resource.

4.15 Confidential Submittal of USGS 7.5 Minute Quadrangle Maps of Archaeological and Architectural Resources

As described above, no archaeological or historical resources have been identified in the project vicinity, so there is no confidential filing.

4.16 Persons Responsible for new Literature Search and Historical Architecture Survey

See Sections 4.5 and 4.9.

4.17 Copy of Letter sent to Native American Heritage Commission

A copy of the letter sent to the Native American Heritage Commission is provided in Attachment C.4.

4.18 Response from Native American Contacts

Only one response has been received from the Native American contacts for the Avenal Energy project. The single response received is the e-mail correspondence dated September 28, 2006 from Lalo Franco, Cultural Specialist, Santa Rosa Rancheria Tachi Yokut Tribe. The full record of this correspondence is provided in the e-mail trail provided in Appendix 6.7-2 of the AFC. The response received does not provide any factual information on which to base any conclusion. There has been no other response received from Native American contacts, written, oral or otherwise, as stated in AFC Section 6.7.1.5 (see pages 6.7-11 and 6.7-12).

4.19 Mitigation Measures for Historic Architectural Resources, if Identified

The results of the historical architecture survey is provided in Attachment C.3. The survey did not identify any historic resource. Therefore, no mitigation is proposed.

5.0 SOCIOECONOMICS

Three data adequacy items have been identified for the socioeconomics section of the AFC, as addressed below.

5.1 Estimate of Indirect Population Increase

No indirect population increase is expected to occur as a result of the project. As described in Section 6.10.2 of the AFC, existing temporary and permanent housing, area infrastructure, and available services will accommodate the minimal direct population impacts of construction and operations. Furthermore, unemployment in the region is relatively high (AFC Table 6.10-6). Based on these factors, the direct and indirect economic benefits of the project are not expected to generate any material indirect population increase.

5.2 Separate Estimates of Operations Payroll for Permanent and Short-Term Contract Employees

All of the expected operational staffing requirements are incorporated into the current analysis and there is no expectation that any of those positions would be filled with short-term contract employees. Therefore, there is no operations payroll for short-term (contract) operations employees.

5.3 Agency Contacts

A table of Agency Contact information is provided as Attachment S.1.

6.0 TRANSMISSION SYSTEM DESIGN

Three data adequacy items have been identified for Transmission System Design, as addressed below.

6.1 Gates Substation One-Line Diagrams and Physical Layout

On August 21, 2007 the Applicant was granted an interconnection queue position and received a Final Interconnection Feasibility Study Report dated March 24, 2008 (Feasibility Report) provided as Attachment T.1. Additionally, the California Independent System Operator (CAISO) provided a one-line diagram of the existing Gates substation provided here in Attachment T.2. The CAISO noted that Avenal Energy will be connected to one of the four Gates substation 230 kilovolt (kV) sections via interconnection facilities identified in the Feasibility Report provided in Attachment T.1.

6.2 System Impact Study Agreement and Proof of Payment

Avenal Power Center, LLC (APC) has executed a System Impact Study Agreement with the CAISO. A copy of this agreement and proof of payment are provided in Attachment T.3.

6.3 Schedule for LGIA

Based on the CAISO Open Access Transmission Tariff Large Generator Interconnection Procedures, APC would expect to execute a Large Generator Interconnection Agreement no later than April 2009 after the completion of the System Impact Study and a Facilities Study. APC requires encroachment permits from the City of Avenal and Fresno County to cross certain city and county roads. These will be obtained shortly before construction begins as they require a review by the respective public works departments of detailed designs that will not be determined until just prior to construction. However, as part of larger consultations with the City of Avenal the required encroachment permits have been discussed.

7.0 WATER RESOURCES

Various individual data adequacy items have been identified for the water resources section of the AFC as addressed below.

7.1 Unnamed Intermittent Pond Referenced in Appendix 6.5-1.2

Appendix 6.5-1.2 identifies an “unnamed intermittent pond” as the receiving water body for storm water runoff from the project site. This “unnamed intermittent pond” is the same as the “closed depression” feature shown at the northwest corner of the site and along the San Luis Canal bank in Figure 6.5-2 (Existing Site Drainage) of the AFC. A 1:24,000 scale version of this figure is provided in Attachment W.1. This closed depression feature is an area where construction of the San Luis Canal has interrupted the natural terrain and water can form shallow puddles against the canal bank before infiltrating and evaporating. Since the project site is in an area of relatively dry climate (6 to 7 inches average annual rainfall) and virtually the entire watershed in this area is active agriculture with relatively high infiltration rates, and because there are no concentrated drainage pathways in the vicinity, most storms do not create enough water to move beyond these shallow puddles. In the event of a very large storm, collected water overtops the closed depressions at a water depth on the order of 2 feet and migrates

southeastward along the toe of the canal bank as the canal loses elevation southward through the region until the water evaporates or infiltrates.

7.2 San Luis Canal

The San Luis Canal is shown in a 1:24,000 scale map in Figure 6.5-1A of the AFC. The San Luis Canal is part of the California Aqueduct system and is discussed in Section 6.5.1.1 of the AFC.

7.3 Potable Water Treatment Plant Ponds

Closed artificial ponds exist at the City of Avenal water treatment facility located immediately northwest of the site. These ponds are also shown as "closed depressions" in Figure 6.5-2 of the AFC and again in a 1:24,000 scale map in Attachment W.1. These ponds are used for maintenance (e.g., filter backflushing) at the water treatment plant and do not have a surface water connection to any other waters.

7.4 Limits of Inundation From 100-year Flood

The Federal Emergency Management Agency (FEMA) published preliminary flood zone maps encompassing the project area in November 2007. The only 100-year flood zone that occurs near the project site is located adjacent to the San Luis Canal. A map showing the 100-year flood boundary and the location of the project site relative to the boundary at 1:24,000 scale is provided in Attachment W.2. The 100-year flood zone includes approximately 6 acres of the 148-acre project site, at the northeastern-most corner of the project site. The power block will be located on a graded building pad that at its closest point will be located approximately 200 feet outside of the 100-year flood zone. The only portion of project facilities located within the 100-year flood zone is the northeastern-most corner of the storm water holding basin (AFC Figure 2.3-10).

7.5 Flood Control Facilities in the Project Vicinity

The project vicinity is largely undeveloped with the exception of extensive agriculture. The project site is in an area of relatively dry climate and the active agricultural fields that dominate the terrain have a relatively high infiltration rate. Existing flood control facilities in the project vicinity include earth ditches along both sides of Avenal Cutoff Road and at the edges of farm fields on quarter-section lines. These ditches are shown in Figure 2.3-10 of the AFC, which is re-produced at a scale of 1:24,000 in Attachment W.3.

The site is designed to have minimal impact on surface water drainage. No changes are planned to flood control facilities offsite. The proposed flood control facilities onsite are shown in the Conceptual Grading and Drainage Plan in Figure 2.3-9 of the AFC and described in Sections 2.3.17.2 through 2.3.17.5 in the AFC.

7.6 Ground Water Wells within One-Half Mile

Ground water wells within 0.50 mile of the site and within 0.50 mile of the three wells proposed for back-up water supply are shown on a map at a scale of 1:24,000 in Attachment W.4. Where available, the total depth and screened interval of each well is shown in the Attachment. These are large capacity agricultural wells used to draw groundwater to irrigate the surrounding farmland. All of the wells with available completion details are on the order of 1,000 feet deep

with screened intervals that tap the regional aquifer that underlies the site as described under the heading of "Site and Vicinity" AFC Section 6.5.1.3.

7.7 Farmer/Landowner Documentation of Water Supply

The backup water supply will use water supply wells located near the Site (see AFC Figure 2.1-5A). Characteristics of these wells are summarized in Table 6.5-2 of the AFC. Attachment W.5 is a redacted copy of the option agreement, letter exercising the option and negotiated water agreement that provides for pumping the necessary volume of water to meet the backup water supply requirements of the project. Avenal Power Center, LLC, is formerly known as Federal Power Avenal, LLC, formerly known as Duke Energy Avenal, LLC. Additionally, the agreement requires the conservation or otherwise reduction of the use of groundwater by the Seller to offset any consumption of water from these wells by Avenal Energy. Offset measures have already been implemented that will more than offset the project's potential backup water supply needs. These measures were implemented by Kochergen Farms in anticipation of the Avenal Energy project in conjunction with payment of option agreements by Avenal Energy. Measures implemented to date include installation of drip irrigation systems and micro-sprinklers on almond orchards shown in Figure 6.4-3A of the AFC and as noted in Footnote 1 in Table 6.5-4 of the AFC. This measure is saving approximately 0.50 acre-foot per acre annually on an ongoing basis over approximately 280 acres of Kochergen Farms property. This is saving approximately 140 acre-feet of water per year on an ongoing basis. In addition, Avenal Energy will permanently remove approximately 25 acres of land from irrigation. These measures that are already implemented save more water each year than the project will use even for a worst-case year. This will result in a net reduction in ground water pumping from the specified wells. As committed in the AFC, Avenal Power Center, LLC will report to the CEC annually on the status of water saving measures to provide assurance that water saving measures continue to be used.

The wells are located within the Westside Groundwater Basin portion of the San Joaquin Valley Alluvial Basin and within the Westlands Water District. This groundwater basin is not adjudicated. Furthermore, the groundwater management plan for the Westlands Water District does not have requirements or limitations that would restrict the proposed use. The county ordinances do not restrict the change in an overlying use from agricultural to industrial. Therefore, there are no licensing or permit requirements to change the water use from agricultural use to industrial use.

7.8 Project Storm Water Discharge

The project is designed to have no discharge of wastewater or contact storm water. In addition, non-contact storm water from the developed area of the site will be retained onsite in the storm water holding basin shown in Figure 2.3-9 of the AFC. Non-contact storm water from undisturbed areas of the site will follow the existing drainage patterns and flow to the "unnamed intermittent pond" referenced in Appendix 6.5-1.2. This non-contact storm water flow will be discharged under the State General National Pollutant Discharge Elimination System (NPDES) permit as described in Section 2.3.17.3 of the AFC. The discharge of storm water that will occur under the NPDES permit will be a continuation of existing storm water flow conditions that occur naturally in the area and does not require any public or private entity to accept the water.

7.9 Project Sanitary Waste Discharge

The location of the onsite sewage disposal system is referred to by the location identifier "A1" in Figure 2.3-3 of the AFC. The layout is shown (although not specifically called out) at the same location in the Key Plan in Figure 2.3-4 of the AFC, as well as other design drawings in the AFC including Figure 2.3-9, 2.3-10 and 2.3-11. A conceptual design is provided in Attachment W.6. This design will conform with the requirements of the Uniform Plumbing Code. The onsite leach field will be on private property that will be owned by Avenal Power Center, LLC and will not require any public or private entity to accept the wastewater. Prior to project construction, a health permit for the septic system will be obtained from the City of Avenal. The City of Avenal currently does not have a septic system permit application (personal communication, Steve Sopp, City of Avenal Community Development Director, March 24, 2008). The City will review the septic system design based a final design package similar to Attachment W.6 and final project design drawings that will be developed prior to construction. The schedule for the City's plan review is provided in Figure 3.0-1 of the AFC.

7.10 Ground Water Drawdown Estimate

As described above, the project overall will have a net reduction in ground water pumping because of offsets to agricultural pumping. Nevertheless, an estimation of aquifer drawdown based on a computer modeling study conducted by a California professional geologist is provided in Attachment W.7 and shows that, even under the non-representative assumption that there is no offsetting of ground water pumping, the project backup water supply could not significantly affect other wells in the vicinity.

7.11 Potential for Migration of Contaminants from Ground Water Withdrawal

As described in Section 6.5.2.2 of the AFC, ground water will be used only for a backup supply and all ground water pumped for the project will be offset by altered farm practices so that there is no increase in ground water pumping. Therefore, the project will not increase ground water drawdown. Furthermore, the amount of water that may be needed for backup ground water supply will be negligible compared to the thousands of gallons per minute and thousands of acre-feet per year typically pumped from the agricultural wells that would provide the backup supply. Therefore, backup ground water supply pumping will not measurably affect water movement in the aquifer compared to existing conditions.

A Phase I Environmental Site Assessment (ESA) was prepared for the site in October 2007 following American Society for Testing and Materials (ASTM) Method E 1527-05 (*Standard Practices for Environmental Site Assessments: Phase I Environmental Site Assessment Process*). The Phase I ESA report is provided in Appendix 6.14 of the AFC and did not identify any groundwater contamination beneath or around the site or near the wells that may be used for the project's backup water supply.

Because the project will not measurably affect ground water flow and because there is no evidence of ground water contamination in the vicinity of the pumping wells, there is no evidence that the project would have any impact on migration of ground water contaminants or on physical or chemical conditions of ground water resources.

With the project's commitment to offset backup water use by reduced agricultural pumping, and ground water conservation measures already implemented that more than offset the project's

water use, the project will have an overall beneficial impact on ground water resources by reducing groundwater consumption.

7.12 Potential for Site Flooding from Failure of the San Luis Canal

Site topography is shown in various figures in the AFC including Figures 2.1-2, 2.1-3A, 2.1-5A, 2.3-9, and 2.3-10. The land in the region surrounding the site slopes generally eastward, so if there were to be a failure of the eastern canal bank, the water would flow away from the site toward the axis of the valley. If the western canal bank were to fail, water would flow along the outside of the canal bank southeastward since the canal loses elevation as it extends southward through the valley. The lowest portion of the site occurs near the canal, but the only project feature to be constructed near the low end of the site is the storm water holding basin. The power block would be constructed on a graded pad as shown in Figure 2.3-9 with an elevation of 340 feet above sea level and would not be affected. The building pad will occur at an elevation that is approximately15 feet higher than the lowest point along the top of the canal bank where the canal is adjacent to the site, so inundation to the level of the power block building pad is not possible.

7.13 Documentation used for Analysis of Project Effects on the 100-Year Flood Plain or Flooding Potential of Adjacent Lands or Water Bodies, or Other Inundation Zones

Evaluations related to flooding and inundation that could be caused by the project area based on:

- FEMA Flood Zone Maps included in Attachment W.2.
- Topographic maps, aerial photographs, and project maps included in Section 2.0 of the AFC, including Figures 2.1-2, 2.1-3A, 2.1-3B, 2.1-5A, 2.1-5B, 2.3-9, 2.3-10 and 2.3-11.
- USGS 7.5 minute quadrangle topographic maps of La Cima, CA (1963, photoinspected 1978, photorevised 1971) and Kettleman City, CA (1963, photorevised 1981).

Steps Taken to Obtain Water Permits Outside the Authority of the Commission

Schedules associated with plans to obtain the Storm Water NPDES General Permits for the project and the septic system permit are provided in Figure 3.0-1 in the AFC. Plans for obtaining these permits are described in Section 6.5.5 of the AFC. These permits take little time to obtain and the Storm Water NPDES General Permits are automatically effective within days following submittal of a notice of intent. Because of the short application timeline for these permits, no actions have yet been taken with agencies for these permits, except that extensive coordination has occurred with the City of Avenal on a broader scale for the project.

ATTACHMENT A.1

AIR PERMIT APPLICATION COMPLETENESS LETTERS

COPY

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

MAR 18 2008

Stuart Zisman
Avenal Power Center, LLC
500 Dallas Street, Level 31
Houston, TX 77002

Re: Notice of Receipt of Complete Application
Project Number: C-1080386

Dear Mr. Zisman:

The San Joaquin Valley Air Pollution Control District (District) has received your Authority to Construct application for the installation of a new 643 MW peak demand power plant consisting of two 171.7 MW GE 7FA natural gas-fired combined-cycle gas turbines equipped with duct firing and a 300 MW steam turbine, a 37.4 MMBtu/hr natural gas-fired boiler, a diesel-fired emergency IC engine powering an electrical generator, and a diesel-fired IC engine powering a fire pump, at Avenal Cutoff Road and San Luis Canal in Avenal, CA. Based on our preliminary review, the application appears to be complete. This means that your application contains sufficient information to proceed with our analysis. However, during processing of your application, the District may request additional information to clarify, correct, or otherwise supplement, the information on file.

We will begin processing your application as soon as possible. In general, complete applications are processed on a first-come first-served basis.

It is estimated that the project analysis process will take 203 hours, and you will be charged at the weighted hourly labor rate in accordance with District Rule 3010. This estimate includes the following major processing steps: Determining Completeness (3 hours), Engineering Evaluation (90 hours), BACT Analysis (50 hours), Health Risk Assessment (20 hours), CEQA Analysis (20 hours) and Permit Preparation (20 hours). The current weighted labor rate is $90.00 per hour, but please note that this fee is revised annually to reflect actual costs and therefore may change. No payment is due at this time; an invoice will be sent to you upon completion of this project.

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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www.valleyair.org

Southern Region
2700 M Street, Suite 275
Bakersfield, CA 93301-2373
Tel: (661) 326-6900 FAX: (661) 326-6985

Printed on recycled paper.

COPY

Please note that this letter is not a permit and does not authorize you to proceed with your project. Final approval, if appropriate, will be in the form of an Authority to Construct permit after application processing is complete. If you have any questions, please contact Mr. Arnaud Marjollet at (559) 230-5900.

Sincerely,

David Warner
Director of Permit Services

Arnaud Marjollet
Permit Services Manager

DW:df

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 19, 2008

Mr. Stuart Zisman
Avenal Power Center, LLC
500 Dallas Street, Level 31
Houston, TX 77002

Subject: Prevention of Significant Deterioration Application No. 08-SJ-01
Avenal Power Center, LLC
Avenal Energy Project, Avenal, California

Dear Mr. Zisman:

This letter is in response to Avenal Power Center, LLC's application for a Prevention of Significant Deterioration (PSD) Permit for the Avenal Power Center, LLC's Avenal Energy Project. The application was submitted with the letter of transmittal dated February 15, 2008 and received by this office on February 20, 2008. Additional application copies also were provided on March 3, 2008. The application is for the construction and operation of a 600 MW combined-cycle electric power generating plant and ancillary facilities. The proposed project will be located between the San Luis Canal (California Aqueduct) and the Avenal Cutoff Road, six miles northeast of the City of Avenal in Kings County, California.

After our review of the above application, as well as follow-up information submitted per our request and received on March 14, 2008 and March 17, 2008, we have determined that the PSD permit application is administratively complete as of March 19, 2008. A preliminary determination, which will include an Ambient Air Quality Impact Report (AAQIR) and draft permit, is being developed. However, it is possible that we will need clarifying information on one or more parts of the application before we can issue a draft permit.

This notification of administrative completeness does not imply that the EPA agrees with any analyses, conclusions or positions contained in the application. Also, if you should request a suspension in the processing of the application, or submit new information indicating a significant change in the project design, ambient impact or emissions, this determination of administrative completeness may be revised.

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Upon issuance of the preliminary determination, we will publish a public notice of our intent to issue the permit. The comment period specified in the notice shall be at least 30 days.

Please be advised that, at any time, anyone may have full access to the application materials and other information you provide to us in connection with this permit action. Therefore, we are informing you of your rights to claim business confidentiality under 40 CFR 2, Subpart B for any part of or all of the information you provide us. If you do not make a claim of confidentiality for any of this material within 15 days of the date you receive this letter you will have waived your right to do so. The facility name and address may not be claimed as confidential.

If you wish to claim confidentiality, you must substantiate your claim. Your substantiation must address the points enumerated in the attachment to this letter, in accordance with 40 CFR 2.204(e).

If you have any questions concerning the review of your application, please contact Shirley F. Rivera, Environmental Engineer, of my staff at (415) 972-3966. For questions regarding confidentiality claims, please contact Ann Lyons at (415) 972-3883. For air quality modeling questions, please contact Carol Bohnenkamp at (415) 947-4130.

Sincerely,

Gerardo Rios
Chief, Permits Office

Attachment

cc: Jim Rexroad, Avenal Power Center, LLC
Robert Fletcher, California Air Resource Board
Christopher Meyer, California Energy Commission
Derek Fukuda, San Joaquin Valley APCD
Dave Warner, San Joaquin Valley APCD
Eric Walther, Sierra Research

Distribution of copies:

Jim Rexroad
Avenal Power Center, LLC
500 Dallas Street, Level 31
Houston, TX 77002

Robert Fletcher, Division Chief
Stationary Source Division
California Air Resources Board
1001 "I" Street
P.O. Box 2815
Sacramento, CA 95812

Christopher Meyer, Project Manager
California Energy Commission
1516 9th Street, MS-15
Sacramento, CA 95814

Derek Fukuda, Air Quality Engineer
San Joaquin Valley APCD
1990 E. Gettysburg Ave.
Fresno, CA 93726

Dave Warner, Director, Permit Services
San Joaquin Valley APCD
1990 E. Gettysburg Ave.
Fresno, CA 93726

Eric Walther
Sierra Research
1801 J Street
Sacramento, CA 95814

ATTACHMENT

INSTRUCTIONS FOR CLAIMING CONFIDENTIALITY

A. Pursuant to 40 CFR 2.204(e), your claim must address these points:

i. The portions of the information alleged to be entitled to confidential treatment;

ii. The period of time for which confidential treatment is desired by the business (e.g., until the occurrence of a specific event, or permanently);

iii. The purpose for which the information was furnished to EPA and the appropriate date of submission, if known;

iv. Whether a business confidentiality claim accompanied the information when it was received by EPA;

v. Measures taken by you to guard against the undesired disclosure of the information to others;

vi. The extent to which the information has been disclosed to others and the precautions taken in connection therewith;

vii. Pertinent confidentiality determinations, if any, by EPA or other Federal agencies, and a copy of any such determination or reference to it, if available;

viii. Whether you assert that disclosure of this information would be likely to result in substantial harmful effects on your business's competitive position, and if so, what those harmful effects would be, why they should be viewed as substantial; and an explanation of the casual relationship between disclosure and such harmful effect, and

ix. Whether you assert that the information is voluntarily submitted information and if so, whether any disclosure of the information would tend to lessen the availability to EPA of similar information in the future. "Voluntarily submitted information" is defined in 40 CFR Section 2.201(i) as business information in EPA's possession.

a) The submission of which EPA has no statutory or contractual authority to require; and

b) The submission of which was not prescribed by statute or regulation as a condition of obtaining some benefit (or avoiding some disadvantage)

under a regulatory program of general applicability, including such regulatory programs as permit, licensing, registration, or certification programs, but excluding programs concerned solely or primarily with the award or administration by EPA of contracts or grants.

B. We will disclose information covered by your claim only to the extent provided for in 40 CFR Part 2, Subpart B Confidentiality of Business Information. Please address your claim and substantiation of confidentiality to the staff person mentioned in the letter at EPA Region 9 (AIR-3), 75 Hawthorne Street, San Francisco, CA 94105.

ATTACHMENT A.2

CORRECTED AFC PAGE 6.2-20

The project will result in emissions exceeding the applicable PSD thresholds for NO_2 and CO emitted from the fossil fuel-fired steam-electric plant category[12] listed in the federal PSD regulations (40CFR52.21), and, therefore, the Project is subject to PSD review. As the SJVAPCD does not have delegation for the PSD program, a separate PSD application must be filed with the USEPA.

Air Quality Monitoring

At its discretion, USEPA Region 9 may require pre-construction and/or post-construction ambient air quality monitoring for PSD sources if representative monitoring data are not already available. Pre-construction monitoring data must be gathered over a one-year period to characterize local ambient air quality. Post-construction air quality monitoring data must be collected as deemed necessary by EPA Region 9 to characterize the impacts of proposed project emissions on ambient air quality.

Best Available Control Technology

BACT must be applied to any new or modified major source to minimize the emissions increase of those pollutants exceeding the PSD emission thresholds. USEPA defines BACT as an emissions limitation, called the Lowest Achievable Emission Rate (LAER) based on the maximum degree of reduction for each subject pollutant, considering energy, environmental, and economic impacts, that is achievable through the application of available methods, systems, and techniques. BACT/LAER must be as stringent as any emission limit required by an applicable NSPS or NESHAP. BACT/LAER is defined below in the discussion of the SJVAPCD NSR regulatory requirements.

Air Quality Impact Analysis

An air quality dispersion analysis must be conducted to evaluate impacts of significant emission increases from new or modified facilities on ambient air quality. PSD source emissions must not cause an exceedance of any ambient air quality standard, and the increase in ambient air concentrations must not exceed the allowable increments shown in Table 6.2-11.

---

[12] Fossil fuel-fired steam-electric plant with heat input greater than 250 MMBtu/hour.

ATTACHMENT C.1

CHRIS RECORD SEARCH

Huron and La Cima Record Search
CAR Project # 08-25
Record Search # 08-059

Study Reports were reviewed for Phase 2 or 3. All studies were Phase 1. The record search documented all previous surveys and cultural resource locations within ¼ mile of all gas and water lines and reviewed all previous surveys and cultural resource locations within 1 mile of the power plant.

Huron, CA 7.5 minute Quad; 1956
Sites on Project Area: None
Surveys on Project Area: None
Sites within ¼ mile of PA: None
Surveys within ¼ mile of PA:

> **FR 2015**: Aspen Environmental, 2001, Los Banos-Gates 500kV Transmission Project; Draft Supplemental Environmental Impact Report.

One previous negative archaeological survey has been conducted within ¼ mile of in the Project Area on the Huron, CA 7.5 minute Quad. Survey **FR2015** is located in the SE ¼ and NW ¼ of Section 25, SW ¼ of Section 24, NE ¼ of Section 23, SE ¼, NE ¼, and NW ¼ of Section 14, SW ¼ and NW ¼ of Section 11, and NE ¼ of Section 10 of Township 21 South, Range 17 East, MDBM (Aspen Environmental 2001).

La Cima, CA 7.5 minute Quad; 1963/1971
Sites on Project Area: None
Surveys on Project Area:

> **FR 1878**: Jackson, Thomas, 2001, Cultural Resource Inventory Application for Certification Avenal Energy.
> **FR 253**: Binning, J., and D. Laylander, 1998, Rehabilitate, Widen and Updgrade FRE 269 from P.M. 0.0 to 12.75.
> **FR 2015**: Aspen Environmental, 2001, Los Banos-Gates 500kV Transmission Project; Draft Supplemental Environmental Impact Report.

Three previous negative archaeological surveys have been conducted in the Project Area (Binning and Laylander 1998; Jackson 2001; Aspen Environmental 2001). Survey **FR1878** is located in the NE ¼ of Section 24 of Township 21 South, Range 17 E, MDBM (Jackson 2001). Survey **FR253** is a linear survey covering approximately 12.75 miles on Lassen Ave and intersects with the Project Area in Section 11 of Township 21 South, Range 17 E, MDBM (Binning and Laylander 1998). Survey **FR2015** is located in the SE ¼ and NW ¼ of Section 25, SW ¼ of Section 24, NE ¼ of Section 23, SE ¼, NE ¼, and NW ¼ of Section 14, SW ¼ and NW ¼ of Section 11, and NE ¼ of Section 10 of Township 21 South, Range 17 East, MDBM (Aspen Environmental 2001).

Sites within 1 mile of PA: None
Surveys within 1 mile of PA:

FR 2027: Offermann, Jenis, 2004, Negative Archaeological Survey Report: Arroyo Pasajero Flood Control Improvement Project, Department of Water Resources.

FR 2052: West, James, 2004, Negative Archaeological Survey Report: San Luis Canal/ Arroyo Pasajero Flood Control Improvement Project, Department of Water Resources.

Two previous negative archaeological surveys were conducted within a 1 mile radius of the Project Area near the power plant (Offermann 2004; West 2004). Survey **FR2027** is a survey of selected locations in the western ½ of Section 7, the NW ¼ and SE ¼ of Section 18, Township 21 South, Range 17 East, MDBM, in association with maintenance of the San Luis Canal (Offermann 2004). Survey **FR2052** includes approximately 40 acres in the SE ¼ of Section 18, Township 21 South, Range 17 East, MDBM, in association with maintenance of the San Luis Canal (Offermann 2004).

CAR Project 08-25
Record Search 08-059
USGS Huron and La Cima 7.5' Quad Maps

FR 253

FR 2015

FR 2027

FR 2052

FR 1878

SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' Huron and La Cima, CA 1971, SCALE: 1:24,000.

QUADRANGLE LOCATION

MILES
0 0.5 1

0 0.5 1
KILOMETERS

-1/4 and 1 mile record search boundary

Previous Surveys

TN
mN
15.0°

Huron and La Cima Record Search
CAR Project # 08-25
Record Search # 08-059

Study Reports were reviewed for Phase 2 or 3. All studies were Phase 1.

Huron, CA; 1956
Sites on Project Area: None
Surveys on Project Area: None
Sites within ½ mile of PA: None
Surveys within ½ mile of PA: None

La Cima, CA; 1963/1971
Sites on Project Area: None
Surveys on Project Area:

FR 1878: Jackson, Thomas, 2001, Cultural Resource Inventory Application for Certification Avenal Energy.

FR 253: Binning, J., and D. Laylander, 1998, Rehabilitate, Widen and Updgrade FRE 269 from P.M. 0.0 to 12.75.

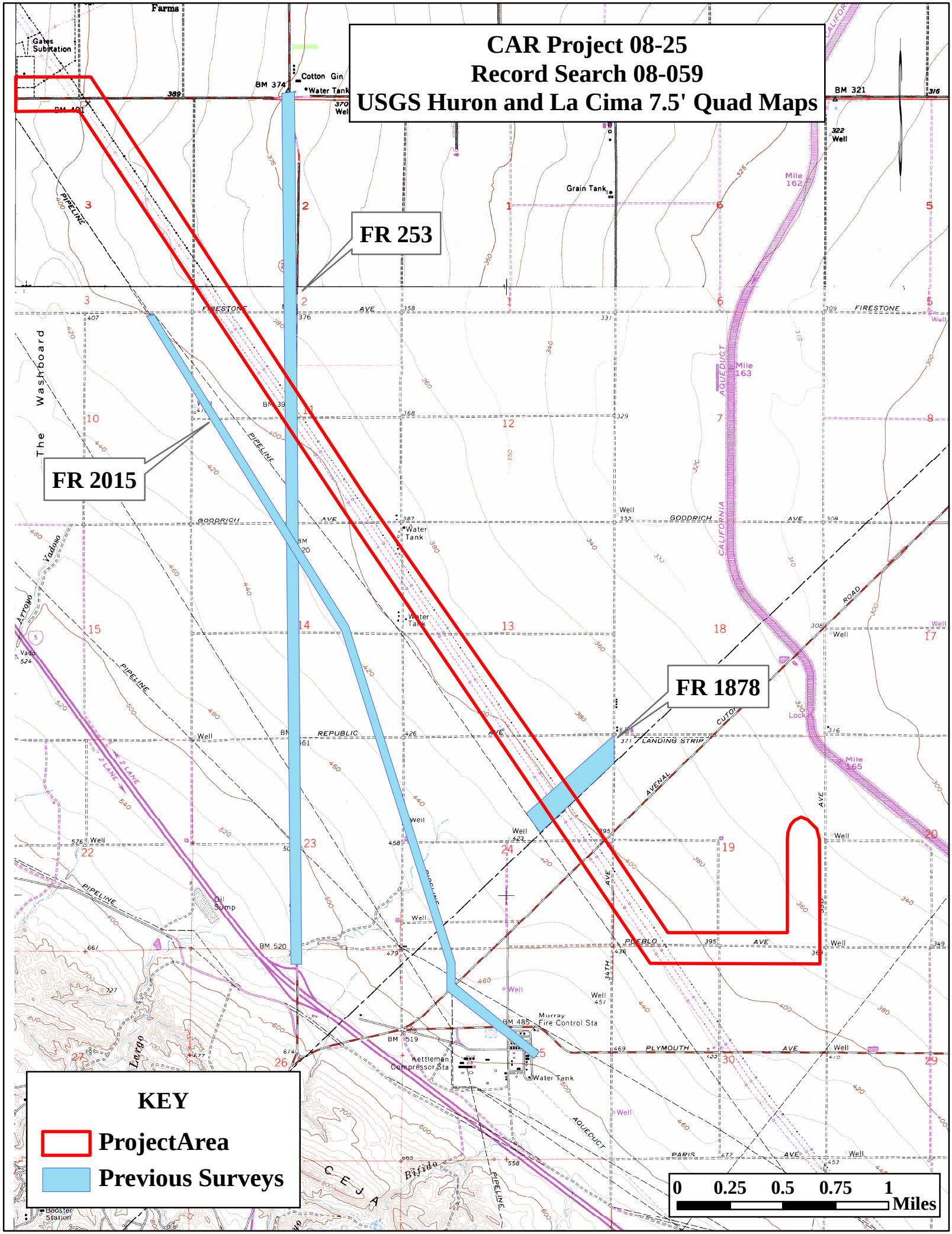
Sites within ½ mile of PA: None
Surveys within ½ mile of PA:

FR 2015: Aspen Environmental, 2001, Los Banos-Gates 500kV Transmission Project; Draft Supplemental Environmental Impact Report.

Two previous negative archaeological surveys have been conducted in the Project Area (Binning and Laylander 1998; Jackson 2001). Survey FR1878 is located in the NE ¼ of Section 24 of Township 21 South, Range 17 E, MDBM (Jackson 2001). Survey FR253 is a linear survey covering approximately 12.75 miles on Lassen Ave and intersects with the Project Area in Section 11 of Township 21 South, Range 17 E, MDBM (Binning and Laylander 1998).

One previous negative archaeological survey was conducted within one ½ mile radius of the Project Area (Aspen Environmental 2001). Survey FR2015 is a linear survey that follows a 500kV transmission line that runs roughly parallel to and southwest of the Project Area (Aspen Environmental 2001). The previous survey is located in the SE ¼ and NW ¼ of Section 25, SW ¼ of Section 24, NE ¼ of Section 23, SE ¼, NE ¼, and NW ¼ of Section 14, SW ¼ and NW ¼ of Section 11, and NE ¼ of Section 10 of Township 21 South, Range 17 East, MDBM.

CAR Project 08-25
Record Search 08-059
USGS Huron and La Cima 7.5' Quad Maps



ATTACHMENT C.2

LETTERS TO LOCAL HISTORICAL AND ARCHAEOLOGICAL SOCIETIES

Pacific Legacy Incorporated

Central Coast Division/Administration
1525 Seabright Ave.
Santa Cruz, California 95062

Phone: 831.423.0588
Fax: 831.423.0587
www.pacificlegacy.com

Cindy Stava-Elfers
Fresno County Archaeological Society
3530 W. Stuart
Fresno, CA. 93711

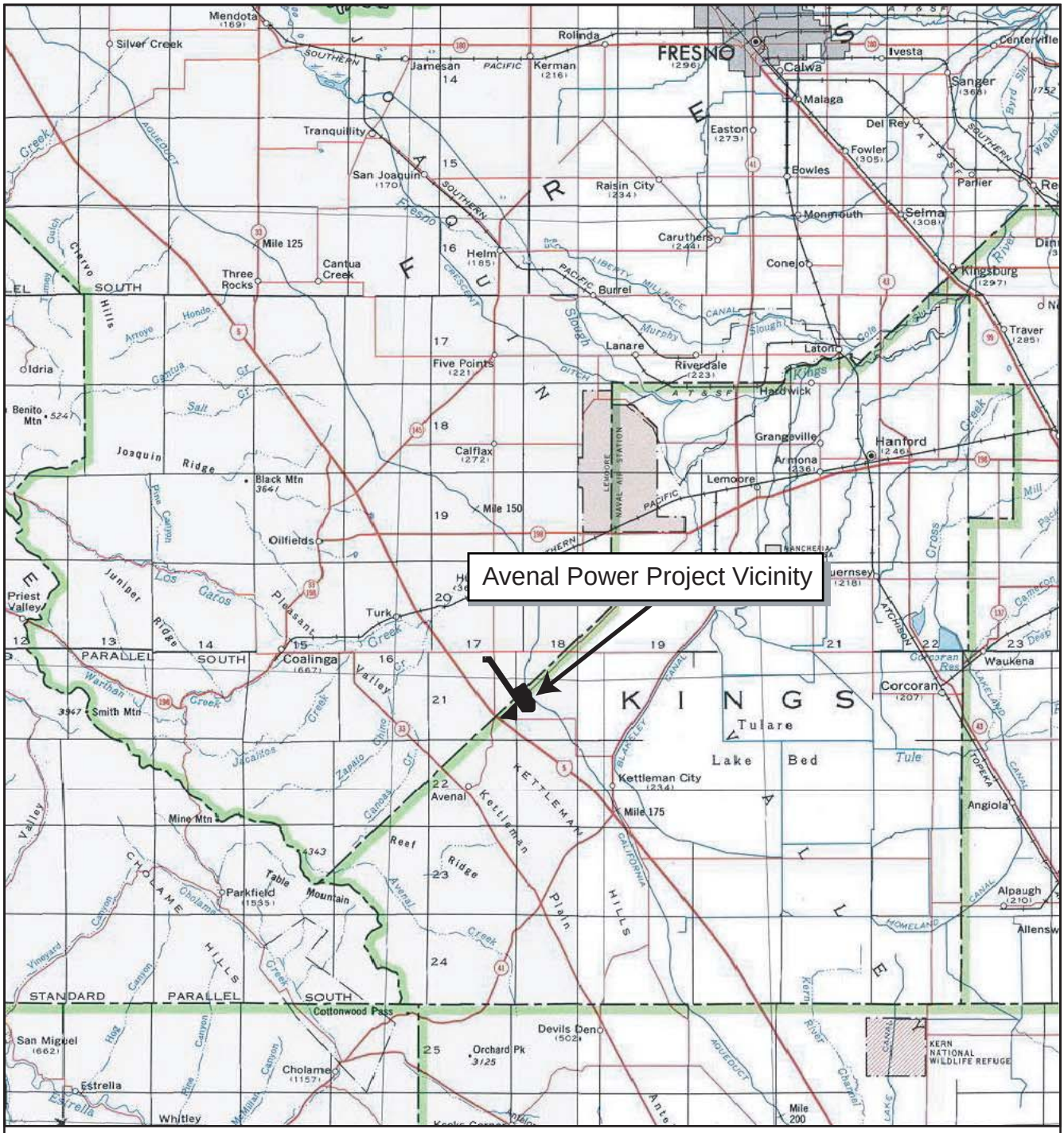
3/26/2008

Dear Ms. Stava-Elfers,

Pacific Legacy, Inc. is performing a cultural resources assessment for the proposed Avenal Power Center, LLC Avenal Energy project. Avenal Power Center, LLC proposes to construct an electric power generating facility on an approximately 148 acre sitejust south of Avenal Cutoff road in the City of Avenal in Kings County, CA, as shown on the attached maps. The plant would also require construction of gas and water lines, as well as approximately 6 miles of electric transmission line from the plant to the Gates substation in Fresno Countynorth of Jayne Avenue. For much of its length, the proposed transmission line would parallel the eastern side of existing transmission lines.

As part of our archival research we would like to know if there are any known archaeological sites (cultural resources) within a one mile radius of the entire project(i.e., the shaded area in the attached Figure 2) . Please see attached maps of the survey area. Feel free to contact me if you have any questions.

Kelly Larsen
Archaeologist
Pacific Legacy, Inc.
831-423-0588, ext. 19
Larsen@pacificlegacy.com



SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' Huron and La Cima, CA 1971.

Figure 1. Avenal Power Project Vicinity Map.

Pacific Legacy Incorporated

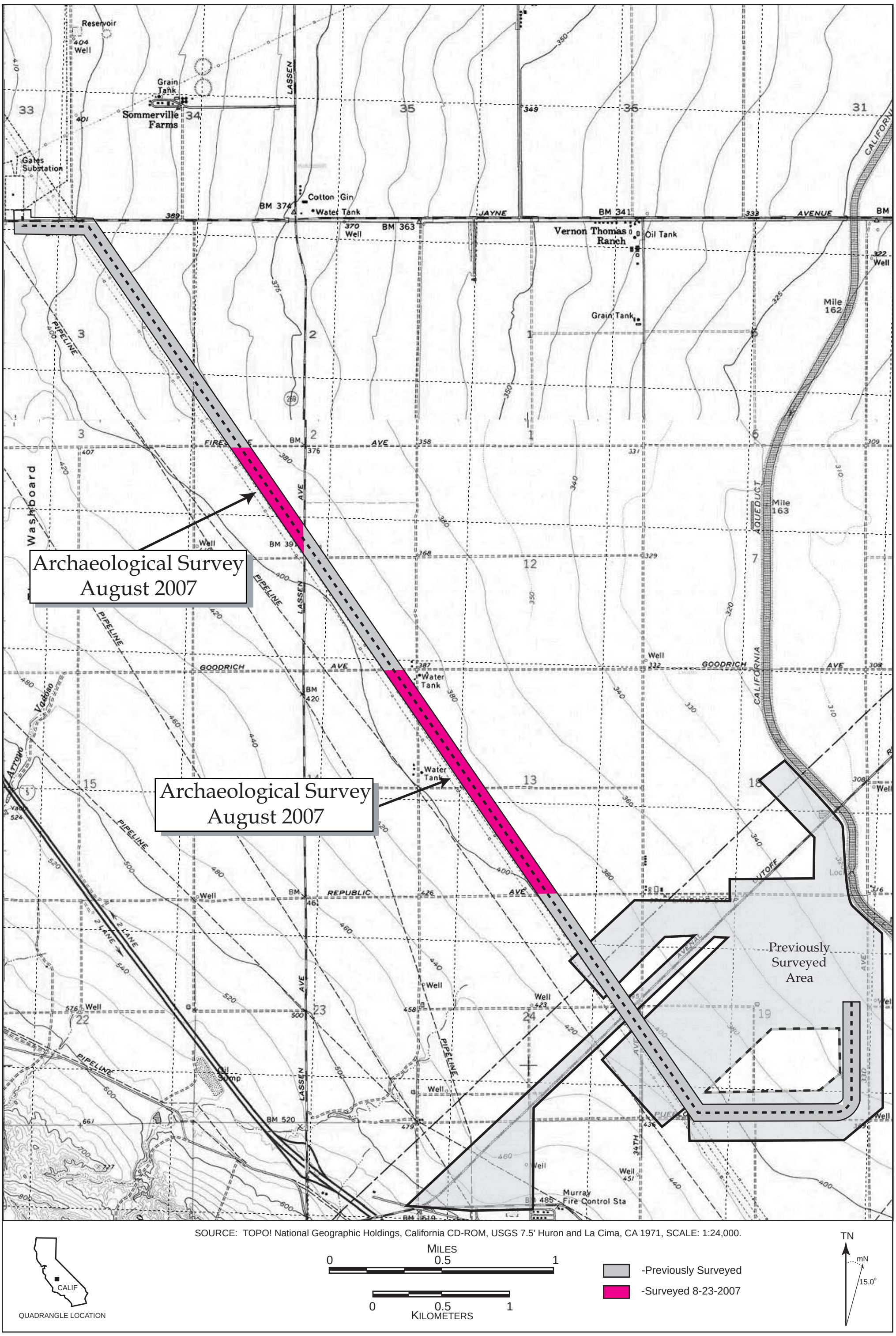


Figure 2. 2007 Archaeological Survey, Avenal Power Transmission Line Corridor.

Pacific Legacy Incorporated

Central Coast Division/Administration
1525 Seabright Ave.
Santa Cruz, California 95062

Phone: 831.423.0588
Fax: 831.423.0587
www.pacificlegacy.com

Bruce Owdom
Fresno City and County Historical Society
5250 N. Palm Ave., Suite 402
Fresno, CA. 93704

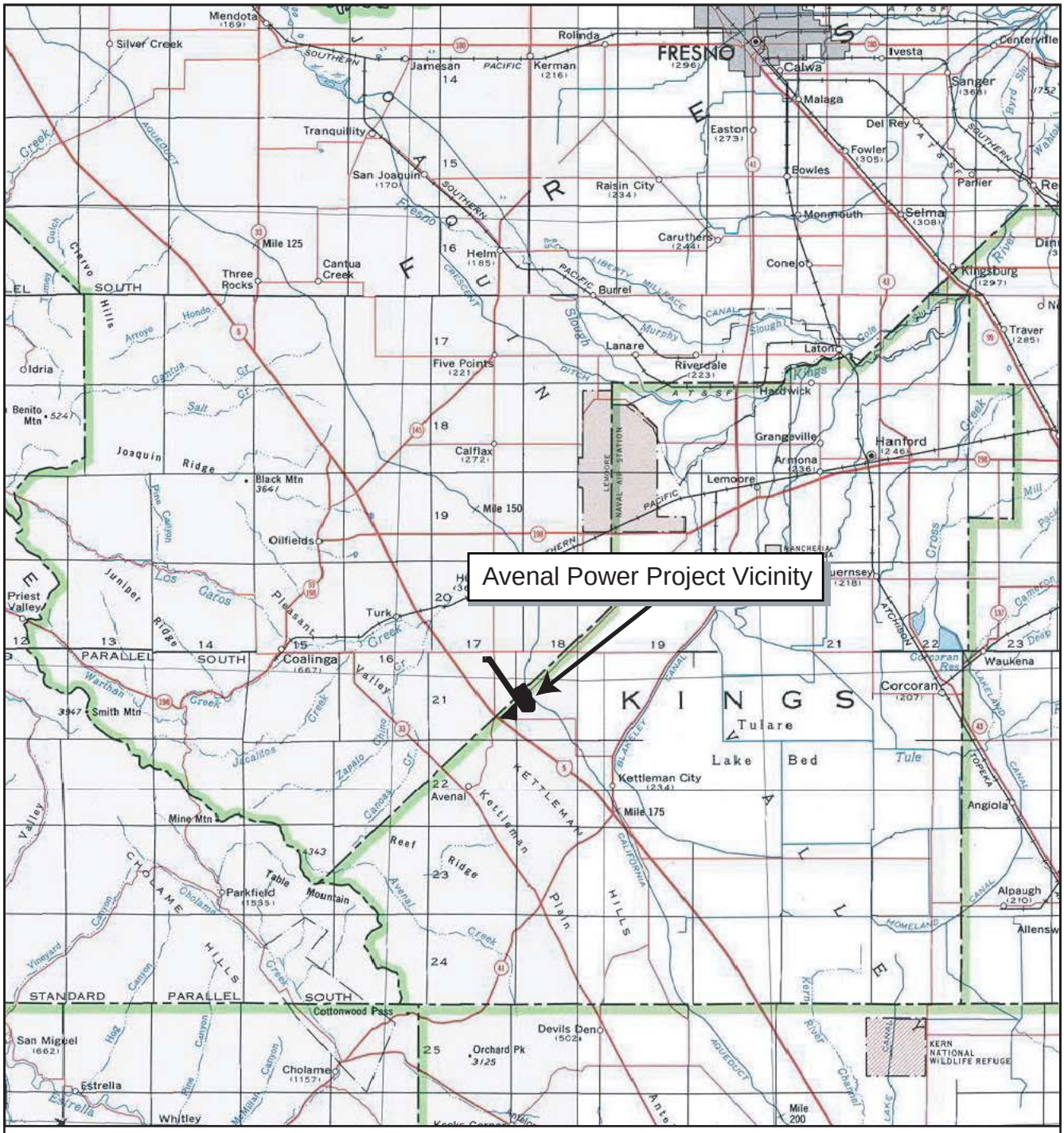
3/26/2008

Dear Mr. Owdom,

Pacific Legacy, Inc. is performing a cultural resources assessment for the proposed Avenal Power Center, LLC Avenal Energy project. Avenal Power Center, LLC proposes to construct an electric power generating facility on an approximately 148 acre site just south of Avenal Cutoff road in the City of Avenal in Kings County, CA, as shown on the attached maps. The plant would also require construction of gas and water lines, as well as approximately 6 miles of electric transmission line from the plant to the Gates substation in Fresno Countynorth of Jayne Avenue. For much of its length, the proposed transmission line would parallel the eastern side of existing transmission lines.

As part of our archival research we would like to know if there are any known archaeological sites (cultural resources) within a one mile radius of the entire project(i.e., the shaded area in the attached Figure 2). Please see attached maps of the survey area. Feel free to contact me if you have any questions.

Kelly Larsen
Archaeologist
Pacific Legacy, Inc.
831-423-0588, ext. 19
Larsen@pacificlegacy.com



SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' Huron and La Cima, CA 1971.

Figure 1. Avenal Power Project Vicinity Map.

Pacific Legacy Incorporated

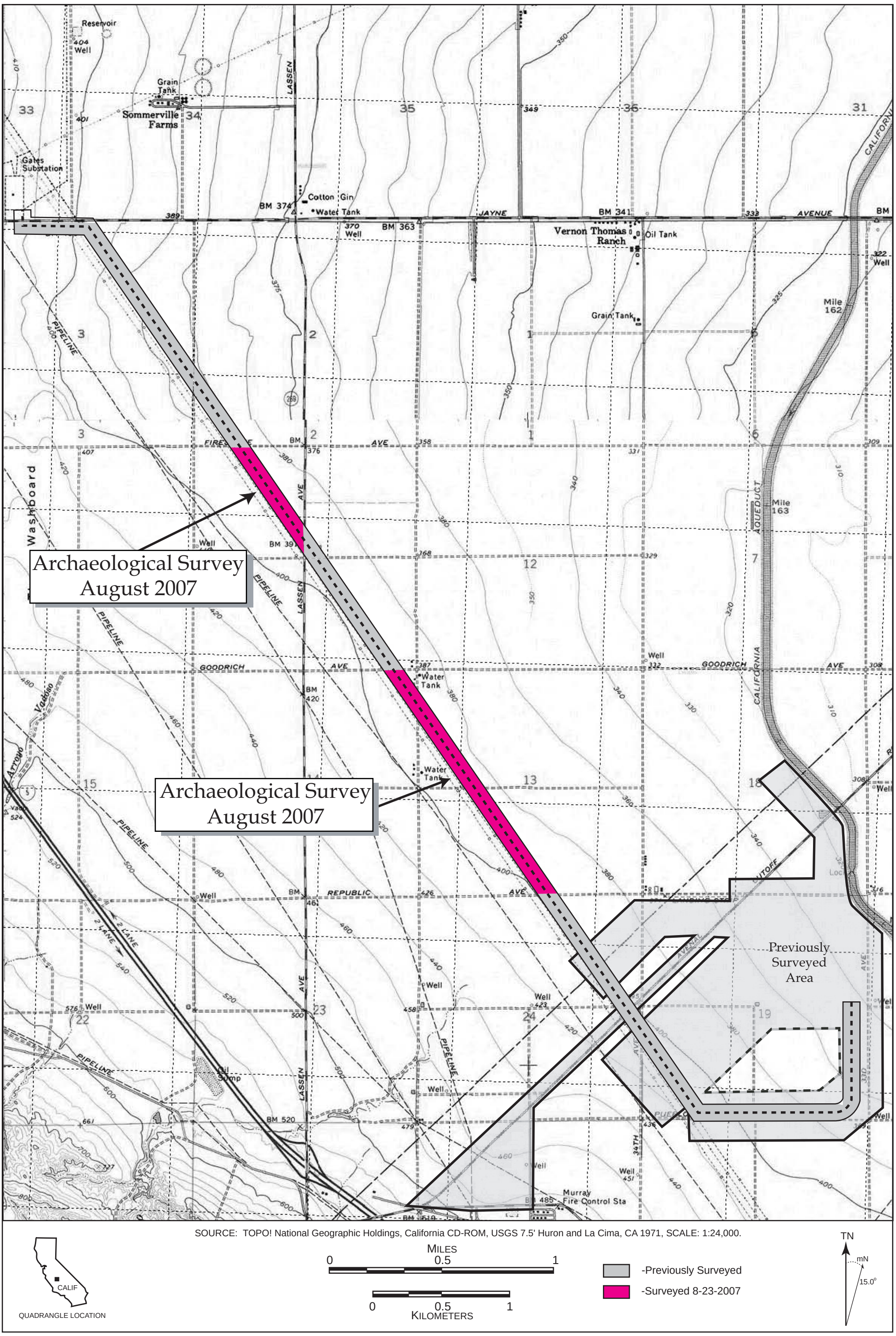


Figure 2. 2007 Archaeological Survey, Avenal Power Transmission Line Corridor.

Pacific Legacy Incorporated

Central Coast Division/Administration
1525 Seabright Ave.
Santa Cruz, California 95062

Phone: 831.423.0588
Fax: 831.423.0587
www.pacificlegacy.com

Robert Ellis
Fresno City and County Historical Society
7160 W. Kearney Blvd.
Fresno, CA. 93706

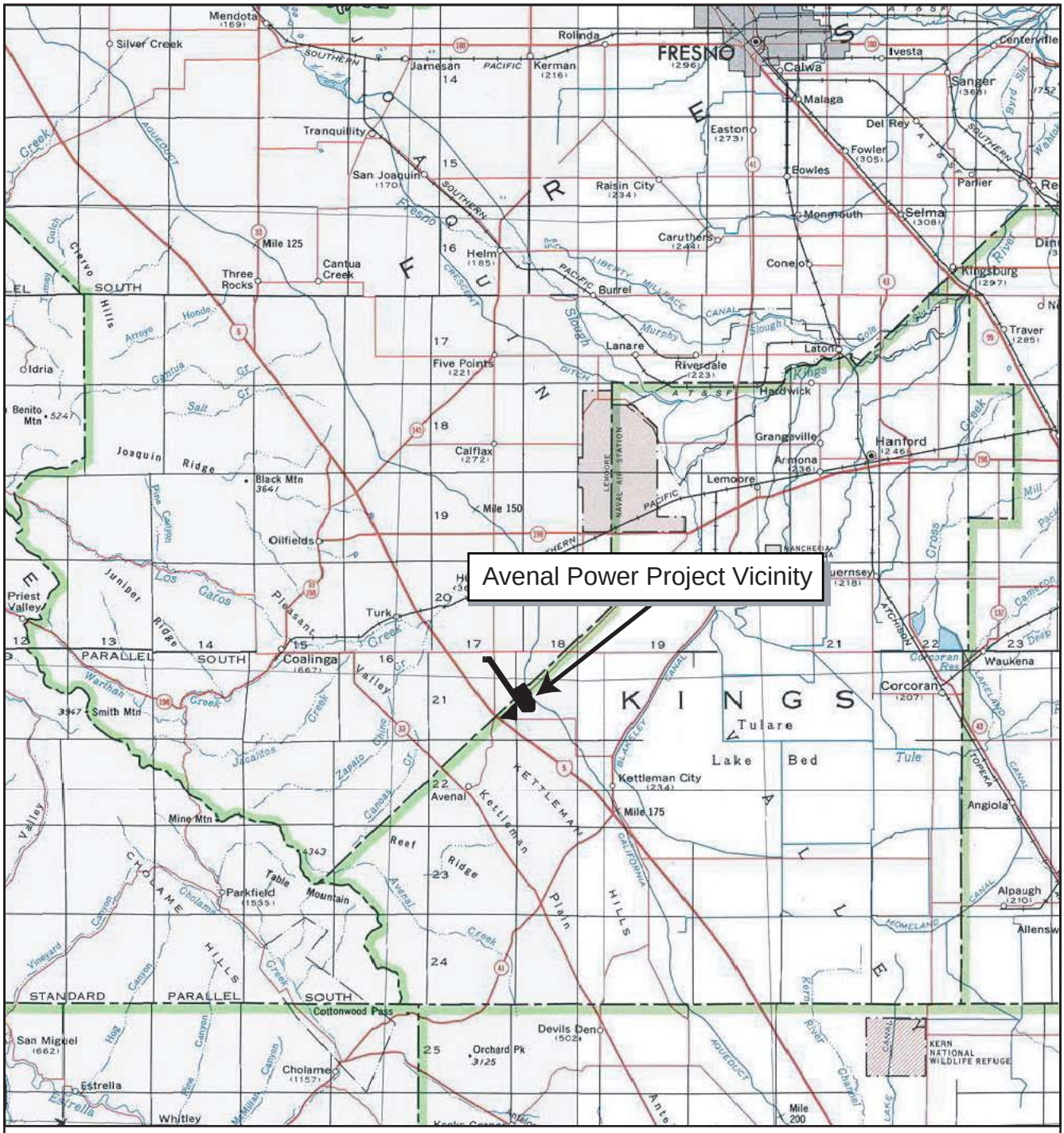
3/26/2008

Dear Mr. Ellis,

Pacific Legacy, Inc. is performing a cultural resources assessment for the proposed Avenal Power Center, LLC Avenal Energy project. Avenal Power Center, LLC proposes to construct an electric power generating facility on an approximately 148 acre site just south of Avenal Cutoff road in the City of Avenal in Kings County, CA, as shown on the attached maps. The plant would also require construction of gas and water lines, as well as approximately 6 miles of electric transmission line from the plant to the Gates substation in Fresno Countynorth of Jayne Avenue. For much of its length, the proposed transmission line would parallel the eastern side of existing transmission lines.

As part of our archival research we would like to know if there are any known archaeological sites (cultural resources) within a one mile radius of the entire project(i.e., the shaded area in the attached Figure 2). Please see attached maps of the survey area. Feel free to contact me if you have any questions.

Kelly Larsen
Archaeologist
Pacific Legacy, Inc.
831-423-0588, ext. 19
Larsen@pacificlegacy.com



SOURCE: TOPO! National Geographic Holdings, California CD-ROM, USGS 7.5' Huron and La Cima, CA 1971.

Figure 1. Avenal Power Project Vicinity Map.

Pacific Legacy Incorporated

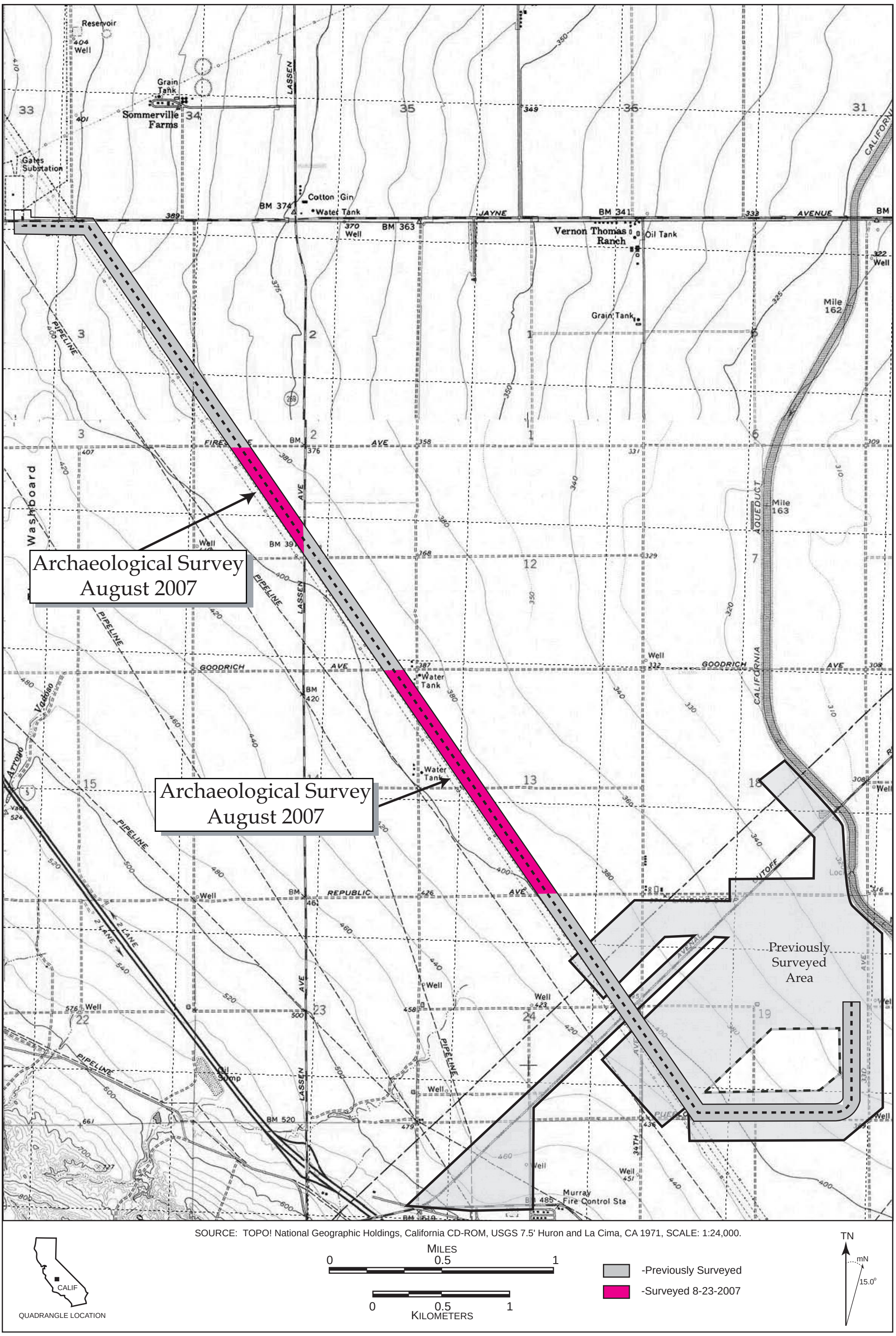


Figure 2. 2007 Archaeological Survey, Avenal Power Transmission Line Corridor.

ATTACHMENT C.3

HISTORICAL ARCHITECTURE SURVEY REPORT

AVENAL ENERGY PROJECT
RECONNAISSANCE LEVEL ARCHITECTURAL SURVEY REPORT

PREPARED FOR / SUBMITTED TO:

TRC Solutions
2666 Rodman Drive
Los Osos, CA 93402
+

Pacific Legacy, Inc.
1525 Seabright Avenue
Santa Cruz, CA 95062

PREPARED BY:

Wendy L. Tinsley, Principal
Urbana Preservation & Planning

248 3rd Street #841
Oakland, CA 94607
510-663-7443/Phone
+
255 G Street
San Diego, CA 92101
619-543-0693/Phone

www.urbanapreservation.com

MARCH 2008

URBANA PRESERVATION & PLANNING

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ATTACHMENTS

A. Department of Parks & Recreation (DPR) 523 A Forms (Prepared by Urbana Preservation & Planning)
- *Kochergen Farms Property, 34th & Republic Avenues, Avenal, California*
- *PGE Gates Substation & Transmission Lines/Towers, Jayne Avenue, Avenal, California*

B. Curriculum Vitae – Wendy L. Tinsley, Principal: Urbana Preservation & Planning

I. EXECUTIVE SUMMARY

The *Avenal Energy Project Reconnaissance Level Architectural Survey Report* (Reconnaissance Report) was prepared by Wendy L. Tinsley, Principal of Urbana Preservation & Planning at the request of TRC Solutions, Inc., to satisfy the 20 CCR Chapter 5, Appendix B Section (g)(2) requirement for a reconnaissance-level historic architecture field survey to be submitted as part of the licensing application for the Avenal Energy power plant. The power plant is proposed to be developed on an approximate 148-acre parcel in Avenal, California. Aboveground linear facilities proposed for development with the plant consist of approximately 6.4 miles of new electric transmission line, most of which will be installed adjacent to an existing Pacific Gas & Electric Company regional transmission corridor comprised of several adjacent 230 kV and 500 kV transmission lines which span through the area.

Ms. Tinsley meets *The Secretary of the Interior's Professional Qualification Standards for Historic Preservation Professionals* in the disciplines of History and Architectural History and the draft expanded standards in the disciplines of Historic Preservation and Land Use/Community Planning. The methodological approach for the reconnaissance level field survey and subsequent report preparation activities is consistent with *The Secretary of the Interior's Standards and Guidelines for Identification* and *National Register Bulletin 24: Guidelines for Local Survey, A Basis for Preservation Planning*.

The acreage surrounding the proposed project site and related linear facilities is utilized as agricultural farmland, with no major residential or commercial developments or property types occurring within a one-half mile radius. Field survey observations identified the presence of six buildings, structures, or agricultural complexes within a one-half mile radius of the 148-acre proposed project site and related linear facilities. These buildings, structures, or complexes are identified as:

- San Luis Canal, construction completed in 1967;
- Avenal City Water Treatment Plant, constructed after 1967 adjacent to the San Luis Canal;
- Kochergen Farms Agricultural Complex;
    - Historic Residence / Administrative Office, dating from at least the 1920s
    - Utilitarian/Agricultural Structures, dating from at least the 1970s
    - Vernacular Outbuildings, dating from at least the 1920s
- 43101 S. Modoc Avenue Agricultural Complex, dating from at least the 1970s-1980s;
- Gates Substation, initially constructed in the mid-1950s; and
- PGE's 230 kV Transmission Lines. These transmission lines have an original in-service date of 1948 and were substantially modified several times since construction including modifications in the 1950s, 1960s. 1970s and the current decade.

The approximate ages of the buildings, structures or agricultural complexes observed are identified as:

- San Luis Canal, approximately 41 years of age;
- Avenal City Water Treatment Plant, approximately 41 years of age or younger;
- Kochergen Farms Agricultural Complex;
    - Historic Residence / Administrative Office, approximately 80 years of age
    - Utilitarian/Agricultural Structures, approximately 28 to 38 years of age
    - Vernacular Outbuildings, approximately 80 years of age
- 43101 S. Modoc Avenue Agricultural Complex, approximately 28 to 38 years of age
- Gates Substation, approximately 53 years of age; and
- PGE's 230 kV Transmission Lines, approximately 60 to 30 years of age.

Photographs of the above-listed properties and brief property descriptions are included in the following pages of this report. Department of Parks and Recreation 523 A forms 'Primary Record' have been completed for each of the properties observed appearing to be over 45 years of age, and are attached to this report. Based on the investigation work described in this report and the project description for the power plant and linear facility development, no substantial adverse change to historical resources are expected to occur from the project, and thus no mitigation measures have been recommended.

II. INTRODUCTION

This Reconnaissance Report was completed by Wendy L. Tinsley, Principal of Urbana Preservation & Planning (Urbana) at the request of TRC Solutions, Inc. to provide cultural resources information to the California Energy Commission as part of the project review and application approval process for an electric power generating plant proposed for installation on a 148-acre site in Avenal, California. The proposed project site is just west of the Bureau of Reclamation right-of-way for the San Luis Canal – a segment of the California Aqueduct, and is accessible from exit 319 'CA-269 / S. Lassen Avenue' off of Interstate 5.

Methodology

According to *The Secretary of the Interior's Standards and Guidelines for Identification* and *National Register Bulletin 24: Guidelines for Local Survey, A Basis for Preservation Planning* a reconnaissance survey may be considered as a 'once-over' inspection of an area that is useful for characterizing an area and the resources located within. The results of a reconnaissance survey effort provide a general understanding of historic properties in a particular area, or the potential for the occurrence of historic properties within a particular area, and permit management decisions that consider the sensitivity of the survey area in terms of historic preservation concerns and the resulting implications for future land use planning.[1]

Urbana completed field survey activities for the Avenal Energy Project on March 11-12, 2008. The field survey effort entailed a windshield (driving) survey of the proposed project site, related linear facilities, and the surrounding lands within a one-half mile radius. Subsequent reconnaissance-level activities completed by Urbana are as follows.

- Every building, structure, and agricultural complex observed within the survey area was photographed for inclusion in this report. Roadside signage for local businesses was also photographed to assist in the identification of survey area property owners and uses.

- Property owner listings and Assessors Parcel Numbers were identified for each of the privately developed properties observed, and approximate construction dates were obtained for these parcels from the Real Property Division of the Fresno County Assessors Office.

- Environmental documents previously prepared as part of the proposed project's review and application approval process were reviewed by Urbana to inform the reconnaissance survey effort and subsequent report findings. The documentation reviewed included the project description, land use and cultural resources sections of the *Application for Certification* for the project filed with the California Energy Commission and dated February 2008.

- Aerial view maps and photographs were reviewed to determine the extent, location and settlement patterns of developed parcels in the survey area, which may not be readily visible or accessible due to the agricultural uses which characterize the landscape.

- Properties determined to be over 45 years of age were documented using State of California Department of Parks & Recreation (DPR) 523 A forms (Primary Record).

CEQA & Historical Resources

This Reconnaissance Report has been prepared to assist in the identification of potential historical resources pursuant to the California Environmental Quality Act and the related California Register of Historical Resources.

CEQA Public Resources Code §21084.1 provides that any project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. Public Resources Code §5020.1(q) defines "substantial adverse change" as demolition,

[1] http://www.nps.gov/history/local-law/arch_stnds_2.htm & http://www.nps.gov/nr/publications/bulletins/nrb24.

destruction, relocation, or alteration such that the significance of the historical resource would be impaired. According to Public Resources Code §5024.1, an historical resource is a resource that is listed in, or determined to be eligible for listing in the California Register of Historical Resources; included in a local register of historical resources; or is identified as significant in an historic resource survey if that survey meets the criteria specified in Public Resources Code §5024.1(g).

California Register of Historical Resources
The California Register program is modeled after the National Register program, but with a greater focus on those resources considered to have local, regional, or statewide importance in California history. A California property found ineligible for listing in the California Register of Historical Resources is not eligible for listing in the National Register.

The California Register of Historical Resources is an authoritative guide to California's significant historical and archaeological resources to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state, and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change.[2] Properties eligible for listing in the California Register of Historical Resources include buildings, structures, objects, or historic districts that retain historic integrity and are historically significant at the local, state or national level under one or more of the following four criteria.

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or

2. It is associated with the lives of persons important to local, California, or national history; or

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or

4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, state or the nation.

III. SURVEY AREA SETTING

The survey area is located east of Interstate 5 and west of the San Luis Canal and is accessible from exit 319 'CA-269/Lassen Avenue' from Interstate 5. Avenal Cutoff Road, a two-lane asphalt road, spans through the southern portion of the survey area and Jayne Avenue, a two-lane asphalt road, spans through the northern portion of the survey area. The survey area is utilized entirely for agricultural purposes featuring rows of planted crops and orchards lined by apiary boxes. Development patterns observed are consistent with the United States Public Lands Township and Range Survey system in that the lands are planted according to section boundaries generally in whole, half, or quarter-sections. PG&E electric transmission line and related towers traverse the survey area and connect to the Gates substation, located on Jayne Avenue approximately 4.5 miles to the northwest of the proposed project site. Unmarked dirt roads lead into the survey area from paved roads; these roads are identified as named avenues on USGS 7.5 minute quadrangle topographic maps including:

- East/West Avenues - Firestone Avenue, Goodrich Avenue, Republic Avenue, and Pueblo Avenue, and
- North/South Avenues – 33rd Avenue, 34th Avenue, S. Modoc Avenue, and S. Lassen.

[2] California Public Resources Code §5024.1.

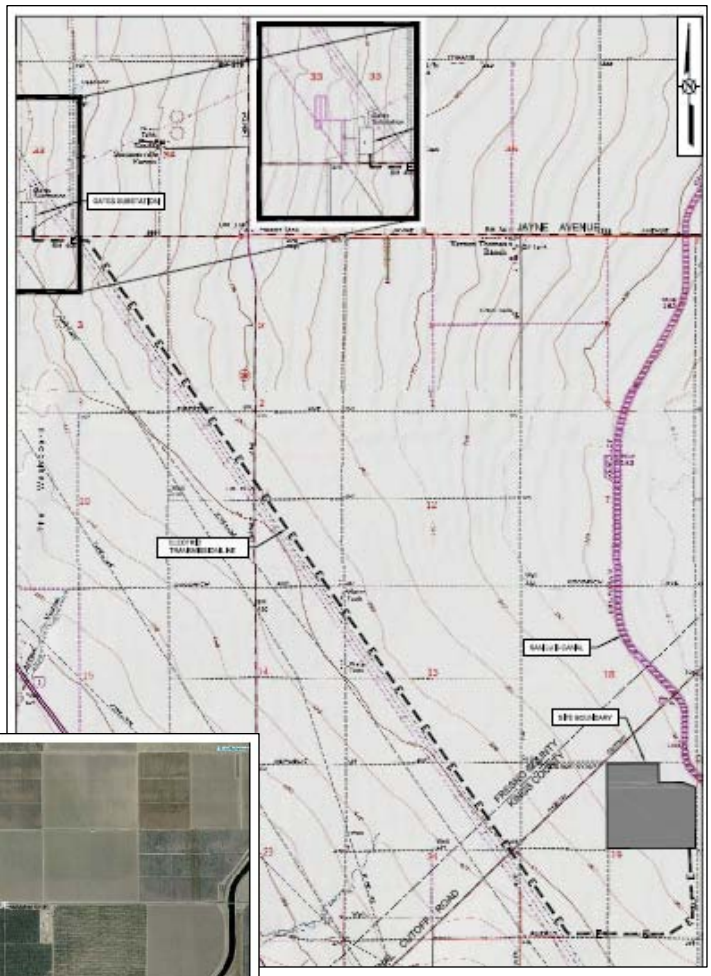


Figure 1: USGS Topographic 7.5 minute map, Huron & La Cima Quadrangles, showing the survey area and proposed project boundaries. Map provided by TRC Solutions, Inc.

Figure 2: Aerial photograph showing the survey area and proposed project boundaries. Aerial image provided by TRC Solutions, Inc.

Figure 3: View easterly of the survey area from Interstate 5 Exit 319 'CA-269/Lassen Avenue' showing low-density agricultural land development patterns and general bucolic setting that characterizes the survey area.

Figure 4: View westerly of the survey area from the intersection of Avenal Cutoff Road & Orange Avenue – immediately outside of the east survey boundary.

Figure 5: View southwesterly of the survey area and proposed project area from the San Luis Canal – the eastern survey area and project area boundary.

Figure 6: Typical view of the survey area showing planted fields beneath PGE transmission lines and towers.

IV. Survey Area Observations

Field survey observations identified the presence of six buildings, structures, or agricultural complexes within a one-half mile radius of the proposed 148-acre project site and related linear facilities. These buildings, structures, or complexes are identified as:

- San Luis Canal,
- Avenal City Water Treatment Plant – 33115 Avenal Cutoff Road,
- Kochergen Farms Agricultural Complex – 33915 Avenal Cutoff Road & 34th / Republic intersection,
- Airway Farms Duster's Ranch Agricultural Complex – 43101 S. Modoc Avenue,
- PGE Gates Substation – Jayne Avenue, and
- PGE Gates-Arco-Midway Transmission Lines & Towers.

Properties & Property Types Observed

Property types observed in the survey area include utilitarian agricultural / industrial, farm support, cylindrical metal water storage tanks, vernacular outbuildings, and public-serving infrastructure.

Utilitarian Agricultural / Industrial Structures

Utilitarian structures which support agricultural and industrial uses are the primary property types observed in the survey area, with the structures observed featuring corrugated aluminum panels for both siding and roofing or standing seam metal siding and roofing. Sections of wood boards installed in a horizontal or vertical pattern were also observed, although metal is the predominant building material employed. Many of these structures are covered by gabled roofs of very low pitch, and appear to equal approximately two-stories in height (thirty-plus feet). Some structures observed are unenclosed with open-sides while others are fully enclosed and feature truck loading/unloading bays with roll-up metal doors. Following are photographs of the utilitarian agricultural / industrial structures observed within the survey area.

Figure 7:
Avenal City Water Treatment Plant, 33115 Avenal Cutoff Road. Constructed sometime after 1967 when the adjacent San Luis Canal was completed.

Figure 8:
Kochergen Farms Composting Facility, 33915 Avenal Cutoff Road. Constructed in 2007..

Figure 9:
Three Kochergen Farms Agricultural Structures, intersection of 34th & Republic Avenues. These structures are built of corrugated aluminum siding with front gabled roofs covered by additional aluminum panels. Wall enclosures vary, material condition is poor. Assessors records date this parcel to 1951, however, it is unclear as to when these structures were originally erected.

Figure 10: Airway Farms Agricultural Structure, 43101 S. Modoc Avenue. This structure appears to be comprised of two volumes – one original and one addition resultant from a later construction campaign. Features include a low pitched gable and shed roof, horizontal board siding in the gable, exposed roof rafter tails, & corrugated aluminum siding. Fenestration includes an auto bay enclosed by a roll-up metal door and a single-entry pedestrian door.

Figure 11: Airway Farms Agricultural Structure, 43101 S. Modoc Avenue. This structure is approximately two stories in height with a symmetrically composed visible façade that features a center-set auto bay enclosed by a roll-up metal door. Siding and roofing consists of corrugated aluminum panels.

Figure 12: Airway Farms Agricultural Structure, 43101 S. Modoc Avenue. This two-story structure appears to exhibit the best material condition, and may be the most recently constructed on the property. The structure is rectilinear with a front auto bay and roll-up door and a small single-story shed rood volume that appears to house and administrative use.

Farm Support

Three buildings in this category were observed in the survey area. The approximate construction dates of these properties are estimated from visual observations of building materials, architectural styles, and features employed. Additionally, parcel construction dates were obtained from the Fresno County Assessors Office Real Property Division in order to correlate reconnaissance-level field observations with municipal property records. The ages of the three buildings observed range from approximately 88 years of age (construction date of approximately 1920) through 28 years of age (construction date of approximately 1980).

Figure 13: Kochergen Farms Property – Farm Support Building – Intersection of 34th & Republic Avenues. This building is a single-story vernacular Craftsman style residence built in a modified T-shaped plan with a cross gabled roof line. Exterior building materials consist of horizontal board siding and composition shingle roofing. Windows are one-over-one single-or-double-hung wood sash with wood surrounds. A small porch overhang is at the front façade supported by two simple wood posts. Two separate entry doors are recessed beneath the porch, indicating the building interior has been subdivided into two separate units. A small shed roof volume is appended to the northwest corner at the front elevation. Material condition appears to be fair to good. Assessor's records date this parcel to 1951; however, this building appears to date to the 1920s. Section 6.9 of the AFC disclosed that this building houses Kochergen Farms administrative activities and no longer serves a residential use.

Figure 14: Airway Farms Property – Farm Support Building, 43101 S. Modoc Avenue. This building is a double-wide trailer comprised of two rectilinear shed roof volumes featuring T1-11 exterior siding, composition roofing, and vinyl slider windows. Multiple entry doors are located along the perimeter with wood stairs and decking attached. Assessor's records date this parcel to 1926. This building clearly dates to a more recent decade and likely was not constructed earlier than the 1970s or 1980s.

Figure 15: Airway Farms Property – Farm Support Building, 43101 S. Modoc Avenue. This single-story building is rectangular in plan covered by a side gabled roof, with T1-11 siding, composition shingle roofing & vinyl sliders windows. Assessor's records date this parcel to 1926. This building clearly dates to a more recent decade and likely was not constructed earlier than the 1970s or 1980s.

Cylindrical Metal Water Storage Tanks

Non-descript cylindrical water storage tanks of metal construction are sited throughout the agricultural fields observed. These tanks are installed vertically and horizontally and support the agricultural operations that characterize the survey area. Following is a representative photograph of a typical water storage tank observed.

Figure 16: Typical cylindrical metal storage water tank.

Vernacular Outbuildings

These single-story buildings previously housed farm laborers and likely also served as additional miscellaneous storage for the farm property. Today the outbuildings are in poor material condition, and no longer serve as farm staff housing due to the poor condition. A cluster of these vernacular outbuildings was observed at the Kochergen Farms property near the intersection of 34th & Republic Avenues. Following is a representative photograph.

Figure 17: Kochergen Farms Property – Vernacular Outbuildings – Intersection of 34th & Republic Avenues. Building materials observed are horizontal board siding and composition roofing with one-over-one wood sash windows. Exposed rafter tails are visible. Assessors records date this parcel to 1951, however, these buildings appear to date to the 1920s.

Public-Serving Infrastructure

Two types of public-serving infrastructure were observed in the survey area; the San Luis Canal and PG&E Transmission Lines & Towers. Following are representative photographs of each infrastructure system observed.

Figure 18: San Luis Canal – a segment of the Central Valley Project – authorized in 1960 and completed in 1967. The San Luis Canal right-of-way borders the eastern boundary of the proposed project site and is adjacent to the Avenal City water Treatment Plant accessible from Avenal Cutoff Road.

Figure 19: Pacific Gas & Electric Company Gates Substation (Jayne Avenue) and associated Transmission Lines & Towers. Construction of the transmission line was completed in 1948 and the Gates substation was installed in the mid-1950s. Major system modifications have occurred at the line and substation from the 1970s forward.

Survey Area Property Locations
The locations of the developed parcels observed as part of reconnaissance-level survey activities are illustrated here in Figure 20 using an aerial image of the survey area.

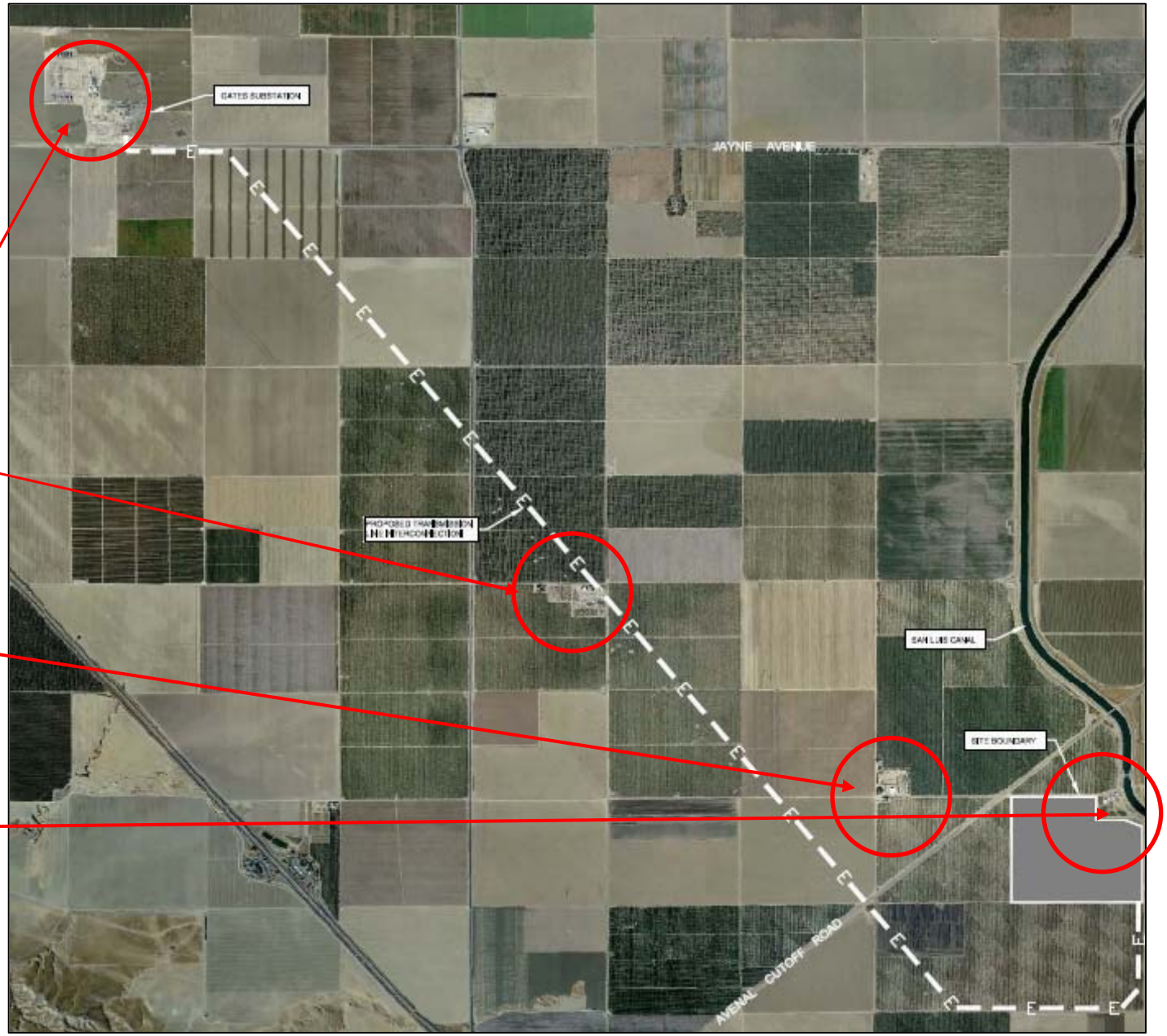
Figure 20: Property Locations.

PGE Gates Substation & Associated Transmission Lines & Towers.

Airway Farms Property, 43101 S. Modoc Avenue.

Kochergen Farms Property, Intersection of 34th & Republic Avenues.

Avenal City Water Treatment Plant & San Luis Canal



URBANA PRESERVATION & PLANNING

V. RECONNAISSANCE SURVEY FINDINGS

The survey area contains two parcels developed with buildings and structures that support the agricultural uses which characterize the surrounding communities of Avenal and Huron. The two owners identified for these developed parcels are Kochergen Farms (Assessors Parcel Number 078-090-26S) and Airway Farms (085-090-26S). Fresno County Assessors Records disclose construction dates of 1951 and 1926 respectively for these two farming parcels. The dates on file with the County do not appear to coincide with the buildings observed at these two sites. Based on the appearance and architectural styles observed, the buildings at the Kochergen site appear to date to the 1920s. These buildings are identified as the farm support buildings and the cluster of vernacular outbuildings. Based on the appearance and architectural styles observed, the buildings at the Airway Farms site appear to date to the 1970s or a more recent decade. The tax assessor's recorded construction date of 1920 appears to be related to an older structure that is no longer present.

- The Kochergen Farms Property has been documented on a DPR 523 A form (Primary Record) that is attached to this reconnaissance survey report. The property has been documented at a reconnaissance level based on the assumption that the buildings at the property are at least 45 years of age.
    - Preliminary findings and field observations suggest that the Kochergen Farms property, and the individual buildings identified on the property, do not appear to be eligible for inclusion on the California Register of Historical Resources.
- The Airway Farms Property has not been documented on a DPR 523 A form (Primary Record). The property has not been officially documented at a reconnaissance level based on the assumption that the buildings at the property are not at least 45 years of age.

Two public-serving infrastructure systems traverse the survey area and the immediate vicinity; these two systems are the San Luis Canal and the PG&E electric transmission system including the Gates Substation and the 230 kV Transmission Lines. The San Luis Canal was authorized in 1960 and completed in 1967 as a segment of the Central Valley Project. The Canal is 41 years of age. The PG&E 230kV Transmission Lines were originally put in service in 1948 and modified several times in the 1950s, 1960,s 1970,s and the current decade. The Gates substation was constructed in the mid-1950s and modified several times since then. Therefore, the oldest infrastructure at the Gates substation is approximately 53 years of age.

- The San Luis Canal has not been documented on a DPR 523 A form (Primary Record). The property has not been officially documented at a reconnaissance level based on the knowledge that this section of the water conveyance system is not at least 45 years of age.
    - It should be noted, however, that the segments of the California Aqueduct / Central Valley constructed through 1956 have been identified as eligible for the National Register of Historic Places by the United States Bureau of Reclamation (BoR).
    - The San Luis Canal, completed in 1967, was not included in the BoR *National Register of Historic Places Multiple Property Documentation Form* (MPDF) completed in June 2007.
        - The proposed project would be constructed at least 200 feet away from the banks of the San Luis Canal, and would not result either material or visual impacts to the modern-period water conveyance system because of the existing BoR right-of-way boundaries, which would ensure that any future efforts to update the MPDF by including the San Luis Canal would be successful with respect to integrity.
- The Gates Substation and associated Transmission Lines & Towers have been documented on a DPR 523 A form (Primary Record) that is attached to this reconnaissance survey report. The infrastructure has been documented at a reconnaissance level based on the knowledge that the substation and transmission lines/towers are at least 45 years of age.
    - Preliminary findings and field observations suggest that the PG&E facilities, including the Gates Substation and related Transmission Lines/Towers, do not appear to be eligible for inclusion on the California Register of Historical Resources.

The survey area contains one parcel developed with a local water treatment plant that serves the city of Avenal. The Avenal City Water Treatment Plant was installed at its present site along the banks of the San

Luis Canal sometime after the canal section was completed in 1967. Thus the oldest possible age of the water treatment facility is 41 years.

- The Avenal City Water Treatment Plant has not been documented on a DPR 523 A form (Primary Record). The property has not been officially documented at a reconnaissance level based on the knowledge that the facility is not at least 45 years of age.

VI. Proposed Project & Preliminary Regulatory Considerations / Findings

The proposed project entails construction and operation of a 600 MW combined-cycle electric power generating plant and ancillary facilities. The power plant is proposed for installation at a 148-acre site adjacent to the San Luis Canal and the Avenal City Water Treatment Plant. Both of these facilities are less than 45 years of age. The proposed power plant site is currently utilized as active agricultural land with planted crops.

- No impacts to historical resources would appear to occur resultant from the installation of a proposed power generating plant at the project site.
- Because no impact to historical resources has been identified, no mitigation measures have been identified or recommended for this component of the proposed project.

Related linear facilities are proposed for installation adjacent to the alignment of the existing PG&E Transmission Lines that traverse the survey area. The Airway Farms property at 43101 S. Modoc Avenue is sited immediately adjacent to footings of existing PG&E Transmission Towers. Construction activities would likely occur in and around the parcel as part of the proposed project. Reconnaissance survey activities have identified the buildings at the Airway Farms complex date to the 1970s or more recent decades and are less than 45 years of age.

- No impacts to historical resources would appear to occur resultant from installation of the related linear facilities at or on the Airway Farms parcel. None of the buildings observed at the property appear to be at least 45 years of age, and none of the properties appear to meet the definition of an historical resource under the California Environmental Quality Act.
- No impacts to historical resources would appear to occur resultant from installation of the related linear facilities within the existing alignment of the PG&E Transmission Lines and Gates Substation. The Transmission Line and substation do not appear to meet the definition of an historical resource under the California Environmental Quality Act.
- Because no impact to historical resources has been identified, no mitigation measures have been identified or recommended for this component of the proposed project

VII. Conclusions

This Reconnaissance Report was completed by Wendy L. Tinsley, Principal of Urbana Preservation & Planning at the request of TRC Solutions, Inc. to provide information related to existing cultural resources as part of the project review and application approval process for an electric power generating plant proposed for installation on a 148-acre site in Avenal, California. The proposed project site is adjacent to the San Luis Canal – a segment of the California Aqueduct, and is accessible from exit 319 'CA-269 / S. Lassen Avenue' off of Interstate 5.

The methodological approach for the reconnaissance level field survey and subsequent report preparation activities is consistent with *The Secretary of the Interior's Standards and Guidelines for Identification* and *National Register Bulletin 24: Guidelines for Local Survey, A Basis for Preservation Planning*. Photographs of the reconnaissance properties observed as well as brief property descriptions have been included in the previous pages of this report and Department of Parks and Recreation 523 A forms 'Primary Record' have been completed for the properties observed which appeared to be more than 45 years of age. The completed DPR forms are attached to this report. Preliminary impacts and mitigation findings have been discussed in this report. No buildings, structures, or objects were identified as part of the reconnaissance-level survey effort which would appear to meet the definition of an historical resource and thus no mitigation measures have been recommended.

ATTACHMENTS

A. Department of Parks & Recreation (DPR) 523 A Forms (Prepared by Urbana Preservation & Planning)

- *Kochergen Farms Property, 34th & Republic Avenues, Avenal, California*
- *PGE Gates Substation & Transmission Lines/Towers, Jayne Avenue, Avenal, California*

B. Curriculum Vitae - Wendy L. Tinsley, Principal: Urbana Preservation & Planning

END

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary#: _____
HRI#: _____
Trinomial #: _____
NRHP Status Code: _____
Other Listings: _____

Review Code _____ Reviewer _____ Date

Page 1 **of** 1 ***Resource Name or #:** (Assigned by recorder) Kochergen Farms Agricultural Complex

P1. Other Identifier: None

***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**

***a. County** **Fresno / Kings**

***b. USGS 7.5' Quad:** Huron / La Cima Date: 1971 **T** _; **R** _; _ **¼ of** _ **¼ of Sec** _; **B.M.** _____

c. Address: 33915 Avenal Cutoff Rd. Intersection of 34th & Republic Avenues City: Avenal Zip: 93204

d. UTM: (Give more than one for large and/or linear resources) Zone _____, _____ mE/ _____ mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)

Assessors Parcel Number 078-090-26S

Sited immediately east of the northbound lanes of Interstate 5 and is accessible from exit 319 'CA-269/Lassen Avenue' on Avenal Cutoff Road.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

The Kochergen Farms complex is comprised of approximately 9 separate buildings and structures; 1 historic-era residence built with horizontal board siding in a vernacular Craftsman style and dating to the 1920s (approximate) that today is utilized for administrative purposes, 4 vernacular outbuildings also with horizontal board siding and dating to the 1920s (approximate) that likely serve as supply storage and/or laborer shelter, and 4 utilitarian agricultural / industrial structures covered in either standing seam metal or corrugated aluminum panels. The farming property's core is centered from the intersection of 34th Avenue and Republic Avenue, and is accessible from Avenal Cutoff Road. Rows of planted crops and orchards lined by apiary boxes characterize the Kochergen property. Development patterns observed throughout the property are consistent with the United States Public Lands Township and Range Survey system in that the Kochergen lands are planted according to section boundaries generally in whole, half, or quarter-sections. Material condition of the buildings at the site appears to vary from poor to fair. No indicators were observed to support a future statement of significance with respect to architecture.

***P3b. Resource Attributes:** (List attributes and codes) HP33 – Farm/Ranch

***P4. Resources Present:** ☒Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

Top:
ca. 1920s residence / current office

Middle:
metal storage structures

Bottom:
ca. 1920s outbuildings

P5b. Description of Photo:
(View, date, accession #)
Residence, storage structures, & outbuildings

***P6. Date Constructed/Age and Source:**
☒Historic
ca.1920-2007
site observations & 02/2008 AFC
☐ Prehistoric
☐ Both

***P7. Owner and Address:**
J.A. Kochergen Properties, Inc.
P.O. Box 11006
Fresno, CA 93771

***P8. Recorded by:**
(Name, affiliation, and address)
Wendy L. Tinsley, Principal
Urbana Preservation & Planning
248 3rd Street #841, Oakland, CA 94607
255 G Street, San Diego, CA 92101

***P9. Date Recorded:**
March 2008

***P10. Survey Type:** (Describe)
Reconnaissance-Level

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Urbana Preservation & Planning, *Avenal Energy Project Reconnaissance Level Architectural Survey Report*, March 2008.

***Attachments:** ☒NONE ☐Location Map ☐Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary#: _____
HRI#: _____
Trinomial #: _____
NRHP Status Code: _____
Other Listings: _____

Review Code _____ Reviewer _____ Date

Page 1 **of** 1 ***Resource Name or #:** (Assigned by recorder) PGE Gates Substation & Transmission Lines
P1. Other Identifier: Gates-Arco-Midway Transmission Lines
***P2. Location:** ☐ **Not for Publication** ☑ **Unrestricted**
***a. County** **Fresno / Kings**
***b. USGS 7.5' Quad:** Huron / La Cima Date: 1971 **T** _; **R** _; _ ¼ **of** _ ¼ **of Sec** _; **B.M.** _____
c. Address: Jayne Avenue City: Avenal Zip: 93204
d. UTM: (Give more than one for large and/or linear resources) Zone _____, _____ mE/ _____ mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate)
Sited immediately east of the northbound lanes of Interstate 5 and is accessible from exit 319 'CA-269/Lassen Avenue' on Jayne Avenue.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The Pacific Gas & Electric Company's Gates Substation was erected in the mid-1950s (approximately 1953-1955) to support the growing electrical power needs of the San Joaquin Valley and the nearby communities of Avenal, Huron and surrounding areas. The 230 kV Lines and related steel Transmission Towers were initially installed in 1948 to carry and distribute electrical power throughout the region. Major modifications in the form of engineering upgrades were made to the substation and associated transmission lines from the 1970s forward, and in circa 2001-2002 a 500kV transmission upgrade was analyzed and approved by the California Public Utilities Commission as part of the 'Path 15' project. The Gates substation appears to be comprised of multiple single-story buildings dating to the mid-century with rectilinear plans and flat or shed roofs. Transmission towers and lines are installed throughout the substation facility. The lines traverse the surrounding agricultural lands and serve as the predominant visual feature in an otherwise rural environment. Installation of a 230 kV line in the late 1940s does not appear to be represent innovative engineering technology as 230 kV level technology was achieved and in use in the early to mid-1920s.

***P3b. Resource Attributes:** (List attributes and codes) HP9 – Public Utility Building, HP11 – Engineering Structure
***P4. Resources Present:** ☒Building ☒Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5b. Description of Photo: (View, date, accession #)
View northerly from Jayne Avenue

***P6. Date Constructed/Age and Source:**
☒Historic
ca.1948-1953
previous surveys & 02/2008 AFC
☐ Prehistoric
☐ Both

***P7. Owner and Address:**
Pacific Gas & Electric Co.
159 East Elm Street
Coalinga, CA 93210

***P8. Recorded by:**
(Name, affiliation, and address)
Wendy L. Tinsley, Principal
Urbana Preservation & Planning
248 3rd Street #841, Oakland, CA 94607
255 G Street, San Diego, CA 92101

***P9. Date Recorded:**
March 2008

***P10. Survey Type:** (Describe)
Reconnaissance-Level

***P11. Report Citation**: (Cite survey report and other sources, or enter "none.")
Urbana Preservation & Planning, *Avenal Energy Project Reconnaissance Level Architectural Survey Report*, March 2008.

***Attachments:** ☒NONE ☐Location Map ☐Continuation Sheet ☐Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

WENDY L. TINSLEY
PRINCIPAL HISTORIAN / PRESERVATION PLANNER
wendy@urbanapreservation.com

Ms. Tinsley brings a solid background in history, architectural history and urban planning, with a particular emphasis on issues relating to historic preservation. Her statewide experience includes extensive historical resources survey work, design review under *The Secretary of the Interior's Standards for the Treatment of Historic Properties*, single-site historic property research and documentation, and practice in municipal regulatory planning and cultural resources compliance issues including code compliance, revision and review, CEQA, NEPA, and Section 106 of the National Historic Preservation Act. As a preservation planning consultant she participates in the development and administration of local land use regulations, policies, programs and projects; prepares reports involving research and analysis of various planning issues; conducts site-specific project and design review; and facilitates project coordination between contractors, architects, developers, citizens and other stakeholders. Wendy meets the *Secretary of the Interior's Historic Preservation Professional Qualifications Standards* in the disciplines of History and Architectural History and the *draft standards* established for Historic Preservation and Land Use/Community Planning.

Ms. Tinsley was the founding President of the Jack London District Association, a non-profit community advocacy organization for the Jack London District, an emerging neighborhood located along the historic industrial waterfront of Oakland, California that is anchored by a ten-block district of intact historically and architecturally significant warehouse properties listed on the National Register of Historic Places. In this position Ms. Tinsley regularly facilitated community visioning workshops, presided over community meetings, corresponded and negotiated with City Staff and Council representatives, and development interests on behalf of the Jack London District.

Wendy has authored invited contributions for the *Encyclopedia of the City* publication and authored the United States Research Bibliography for the newly published book *The International Faces of Urban Sprawl*. She is currently completing a book on the planning and development history of San Diego, which will be a valuable reference resource to historic preservation and planning professionals, academics, and local historians.

Wendy served as a Board member of the Northern California Chapter of the American Planning Association (APA) from 2004 through 2006 where she was appointed as the San Francisco and East Bay Chair for the group's Regional Advisory Council. She currently serves as the California Representative for the APA National Urban Design & Preservation Division. In the fall of 2006 she joined the instructor team at the University of California at San Diego's (UCSD) Urban Planning & Development professional certificate program, where she teaches courses on Historic Preservation Planning, Architectural History and City Planning, and serves as a program advisory group member to further historic preservation in local planning and development education curriculums.

Wendy has assisted jurisdictions in preservation planning program development efforts through:

- Crafting historic preservation ordinance language and related procedural and administrative guidelines;
- Reviewing existing programs for specialized use in historic preservation strategies;
- Establishing preservation incentive and benefit programs;
- Navigating proposed programs through the participatory process including educating advisory committees and established municipal historic preservation boards;
- Facilitating public workshops, and presenting conclusions and recommendations to city decision-makers;
- Conducting comprehensive historical resource/historic property surveys to identify and evaluate eligible properties and inform the current and long-range planning and development process.

She is currently the lead historic preservation consultant for the City of Chula Vista's Proposed Municipal Preservation Planning Program where she works closely with City Staff and the Interim-Historic Preservation Advisory Committee to develop a local historic preservation program including a historic preservation ordinance, historic design review guidelines, and incentives and benefits for historic property owners and project applicants. Additionally Wendy provides on-call architectural history and historic preservation planning services for the Southern California Edison Company as part of the Tehachapi Renewable Transmission Project.

WENDY L. TINSLEY
PRINCIPAL HISTORIAN / PRESERVATION PLANNER
wendy@urbanapreservation.com

EDUCATION

Master of City Planning, Historic Preservation & Urban Design Concentration
Thesis Title: *How Cities Grow: A History Of San Diego Neighborhood Development Patterns, 1769-1955*
California State University, San Diego

Bachelor of Arts – History, Public History & Urban Studies Concentration
Senior Research Thesis: *Another Streetcar Suburb: The Development of Mission Beach, 1914-1930*
California State University, San Diego

PROFESSIONAL EXPERIENCE

Principal: Urbana Preservation & Planning, (Oakland & San Diego) 04/2005-present
Architectural Historian & Preservation Planner: Architectural Resources Group (San Francisco & Los Angeles), 10/2002-04/2005
Architectural Historian & Preservation Planner: Historic Research Services, (San Diego) 12/2001-10/2002
Historian & Historic Preservation Planner: Office of Marie Burke Lia, Attorney at Law, (San Diego) 01/2000-11/2001
Assistant Coordinator: SHPO/CHRIS-South Coastal Information Center, 07/1998-08/1999
Consultant, East Side Survey and Oral History Program: City of Oceanside Department of Planning and Land Use, 01/1999-06/1999
Consultant, National Register of Historic Places Travel Itinerary: City of San Diego Historic Site Board, 06/1998-06/1999
Research Assistant: SHPO/CHRIS-South Coastal Information Center, 12/1996-07/1998

SELECT RELATED EXPERIENCE / PROFESSIONAL SEMINARS / CONTINUING EDUCATION

Instructor: UCSD Urban Planning & Development Extension Certificate Program. Courses Taught:
Architectural History – Winter Quarter 2008
Historic Preservation Planning –Winter Quarter 2007, Summer Quarter 2007, Winter Quarter 2008
Fundamentals of City Planning – Summer Quarter 2007
Seminar Facilitator / Panel Speaker: *Planning for Preservation: A Survey of Municipal Preservation Programs Throughout San Diego County*, UCSD Extension–UPD Cert. Program, 11/2006
Invited Speaker: *Local Historic Site Designation & The Mills Act Historic Property Tax Credit Program*, City of San Leandro (CA), 04/2005
Attendee: CA Preservation Foundation & CA Office of Historic Preservation, *Historical Resource Surveys for Local Governments*, San Diego (CA) 02/2004
Attendee: National Charrette Institute, *Introduction to Dynamic Planning* (Level 1 NCI Charrette Manager Certification Training), San Diego (CA) 10/2003
Attendee: CA Preservation Foundation, *Incentives for Historic Preservation Projects*, Berkeley (CA) 09/2003
Attendee: University of Southern CA, *Preservation Planning & Law*, Los Angeles (CA) 07/2003
Attendee: League of CA Cities, *Smart Growth Zoning Codes*, Lodi (CA) 12/2002
Invited Participant: *Second Natures, Redefining The Los Angeles Riverfront*, Los Angeles (CA) 01/2002 (2-Day Planning & Design Charrette hosted by MOCA & The Geffen)
Graduate Instructor: Urban Studies & Planning Program, University of CA at San Diego, Courses Taught: USP 124-Land Use Planning, Dr. Nico Calavita, 09/2001 – 12/2001
Graduate Teaching Assistant: City Planning Graduate Program, San Diego State University, Dr. Nico Calavita, 01/2000 – 08/2000, 09/2001 – 12/2001, 01/2002 – 05/2002
Selected Smart Growth Researcher: San Diego State University Foundation & City Planning Graduate Program, Dr. Roger Caves, 01/2001 – 08/2001 (Grant Topic: Planning for Sprawl in the U.S)
Attendee: *Section 106 An Introductory Course*, National Preservation Institute, San Francisco (CA) 04/1999

MEMBERSHIPS

American Planning Association (APA)
Society of Architectural Historians (SAH)
Society for American City and Regional Planning History (SACRPH)
National Trust for Historic Preservation (NTHP)
California Preservation Foundation (CPF)

BOARDS & COMMITTEES

Consultant Advisor – City of Chula Vista Interim Historic Preservation Advisory Committee, 2007
California Representative – Urban Design & Preservation Division, American Planning Association, 2007
Member – UCSD Extension Advisory Group Urban Planning & Development Certificate Program, 2007
President – Jack London District Association, 2005-2006
East Bay Co-Chair – Regional Advisory Council, APA Northern Section-CA Chapter, 2005-2006
San Francisco Chair – Regional Advisory Council, APA Northern Section-CA Chapter, 2004-2005

SELECT PUBLICATIONS

Article in-progress	*The General Plan and Historic Preservation; An Overview of Historic Preservation Elements in the State of CA.*
Article in-progress	*San Diego County's Municipal Preservation Report Card*
2006	"United States Research Bibliography" *The International Faces of Urban Sprawl: Lessons Learned From North America*. Fritz Wagner (ed.) Geography Dept. University of Waterloo: Waterloo, Ontario.
2005	"Courtyards" invited entry for *Encyclopedia Of The City*. Roger Caves (ed.) Routledge: London.
2005	"Robert Venturi" invited entry for *Encyclopedia Of The City*. Roger Caves (ed.) Routledge: London.

SELECT PROJECTS / REPORTS / DOCUMENTATION

In-Progress	*Lombardi Ranch CEQA Review, San Ardo, California*
In-Progress	*Historic Site Designation & Mills Act Historic Property Tax Consulting for the Goldberg Residence, 4654 Iowa Street, San Diego, CA*
In-Progress	*Storefront Improvement / Façade Revitalization Historical Resource Analysis & Design Review Assistance, 3201 Adams Avenue, San Diego, CA*
In-Progress	*Proposed Heidi Square Project Historical Resource, Preservation Planning & Subdivision Re-Design Consulting, San Lorenzo, CA*
In-Progress	*Lead Architectural History/Preservation Planning Consultant – Southern California Edison Company On-Call Contract for the Tehachapi Renewable Energy Project*
In-Progress	*Lead Consultant – City of Chula Vista Historic Preservation Program Development*
February 2008	*Del-Sur Saugus Mining Complex Historical Resource Review, Grass Valley, CA*
February 2008	*Foothill Ranch Historical Resource Review, Palmdale, CA*
January 2008	*Section 106 Review 1425-1475 South Main Street, Walnut Creek, CA*
January 2008	*Historic Site Designation Report & Mills Act Property Tax Consulting - Ocean Beach Cottage Emerging Historic District Contributor, 4670 Del Monte Ave., San Diego, CA*
November 2007	*Historic Site Designation & Mills Act Historic Property Tax Consulting for the Olmstead Building Company's Calavo Gardens Project #531, Mt. Helix, CA*
October 2007	*Southern CA Edison Company's Del Sur-Saugus Transmission Line Historical Resource Review, Lancaster - Palmdale, CA*
October 2007	*Southern CA Edison Company's Antelope Substation Historical Resource Review, Lancaster, CA*
September 2007	*Historical Resource Review & Data Responses for the Proposed SDG&E Orange Grove Energy Project in Pala, CA*
September 2007	*Southern CA Edison Company's Kaiser Pass Cabin Historic Property Assessment, Fresno Co., CA*
August 2007	*USDA Forest Service Meeks Creeks Historic Bridge Assessment, Lake Tahoe, CA*
July 2007	*Historical Resource Analysis Report, 433 W. Meadow Drive, Palo Alto, CA*
May 2007	*Historic Preservation Assessment & New Project Planning and Design Consulting – 3994 Jackdaw Street, San Diego (CA)*
February 2007	*419 Park Way Historical Resource Analysis Report, Chula Vista, CA*
January 2007	*Upper Triangle Areas Historic Property Survey (Historic Context Statement and Architectural/Historical Documentation of 50 Properties over 15 City Blocks), Fresno, CA*
December 2006	*Historic Site Designation & Mills Act Historic Property Tax Consulting for the Charles Wakefield Cadman Residence, Mt. Helix, CA.*
November 2006	*Historical Resource Analysis of the 4303 Narragansett Avenue Property, San Diego, CA*
September 2006	*Section 106 Review of the 1333 Balboa Street Property, San Francisco, CA*

September 2006	*Section 106 Review of the Historic Delta-Mendota Canal, Los Banos, CA*
August 2006	*Historical Evaluation Report – 2959 East Avenue, Hayward, CA*
June 2006	*Historical Resource Analysis Report: 418-450 10th Avenue Properties, San Diego, CA*
May 2006	*Section 106 Review of the Cocoanut Grove Building – Santa Cruz Beach Boardwalk, Santa Cruz, CA*
May 2006	*Historical Resource Evaluation Report for the 70 15th Street Warehouse, San Diego, CA*
April 2006	*Historic Site Designation Report & Mills Act Property Tax Consulting - Ocean Beach Cottage Emerging Historic District Contributor, 4528 Saratoga Avenue, San Diego, CA*
March 2006	*City of Fresno Arts-Culture District Historic Property Survey (Historic Context Statement and Architectural/Historical Documentation of 90-100 Properties over 18 City Blocks), Fresno, CA*
March 2006	*South Mossdale Historic-Era House Evaluation, Lathrop, CA*
February 2006	*Westwind Barn Historic Preservation Study, Los Altos Hills, CA*
January 2006	*Section 106 Review of the 2654 Mission Street Property, San Francisco, CA*
January 2006	*Section 106 Review of the 325 Mowry Avenue Property, Fremont, CA 94536*
January 2006	*Section 106 Review of Ardenwood 34551 Ardenwood Bouevard, Fremont, CA 94555*
December 2005	*Section 106 Review of the 1230 N Street Property, Sacramento, CA 95814*
December 2005	*Section 106 Review of the Sacramento City College Water Tower, Sacramento, CA*
November 2005	*Section 106 Review of Fair Oaks Watts, 525 La Sierra Drive, Sacramento, CA*
November 2005	*Napa Valley College Bus Shelter West Historical Resource Analysis Report, Napa, CA*
October 2005	*Section 106 Review of the 1025 3rd Street Property, Sacramento, CA 95818*
September 2005	*City of Davis, Historic Anderson Bank Building Research, Documentation & Design Review Analysis, 203 G Street, Davis, CA*
September 2005	*Historical Resource Analysis Report, 1212 & 1214 Second Street, San Rafael, CA*
August 2005	*Historical Resource Analysis Report – Somky Property/Thompson's Soscol Ranch, Napa, CA 94558*
July 2005	*Walnut Creek Women's Club Environmental Impact Report, 1224 Lincoln Avenue, Walnut Creek, CA*
June 2005	*Tam Property Lot Split Historic Preservation Consulting, Castro Valley, CA*
May 2005	*Historical Resource Analysis Report, 7329-7331 Eads Avenue, San Diego, CA*
March 2005	*Ehlers Estate Historical Resource Analysis, 3222 Ehlers Lane, St. Helena, CA*
March 2005	*University of CA at Santa Cruz Preservation Consulting (Campus Wide Cultural Resources Inventory, Historic Context Statement – Campus Planning History)*
February 2005	*Hall Winery Historical Resource Analysis, St. Helena, CA*
January 2005	*Historical Resource Evaluation, 700 28th Avenue, San Mateo, CA*
January 2005	*Historical Resource Evaluation, 312 & 318 Highland Avenue, San Mateo, CA*
December 2004	*San Mateo Motel Historical Resource Report – Park Bayshore Townhomes – Environmental Impact Report* (Revised February 2005)
November 2004	*Historical Evaluation of the San Mateo Motel, 801 South Bayshore Boulevard, San Mateo, CA*
October 2004	*Stonegate Homes Subdivision Plan, and Single-and-Multi-Family Dwellings Design Review, San Mateo, CA*
September 2004	*University of CA at Santa Cruz, Getty Campus Heritage Grant Application*
September 2004	*City of Riverside Downtown Fire Station No.1 Cultural Resources Analysis, Riverside, CA*
August 2004	*Residential Remodel Design Review – Glazenwood Historic District Contributor, 929 Laurel Avenue, San Mateo, CA*
August 2004	*Odd Fellows Hall, Historic Structure Report, 113 South B Street, San Mateo, CA* (with Conservator Seth Bergstein)
July 2004	*Design Review Analysis – Schneider's Building, 208 East Third Street, San Mateo, CA 94401*
July 2004	*Embarcadero Cove Development Project Initial Study – Preliminary Historical Resource Analysis, Oakland, CA 94606*
July 2004	*Historical Resource Evaluation Report – 4830 Cape May Avenue, San Diego, CA 92107* (Revised January 2005)
June 2004	*City of Monterey Alvarado Street Mixed-Use Project - APE Survey, Monterey, CA*
June 2004	*City and County of San Francisco Historical Resource Evaluation Report – 450 Frederick Street, San Francisco, CA 94117*
June 2004	*Design Review Analysis – 117 Clark Drive, San Mateo, CA 94402*
May 2004	*Historical Evaluation of the 426 Clark Drive Residence, San Mateo, CA 94402*

April 2004	*City and County of San Francisco Historical Resource Evaluation Report – 1272 42nd Avenue, San Francisco, CA 94122*
April 2004	*City of Fresno Broadway Row Historical Resource Survey, Fresno, CA*
March 2004	*Historical Evaluation of the 117 Clark Drive Residence, San Mateo, CA 94402*
March 2004	*Historical Evaluation Of The Fresno Republican/McMahan's Building, 2030 Tulare Street, Fresno, CA 93721*
February 2004	*Crocker Bank Building Preservation Planning Considerations Memorandum*
January 2004	*Historical Evaluation of the 501 Walnut Street Residence, San Carlos, CA 94070*
January 2004	*Historical Evaluation of the 20 Madison Avenue and 29 Hobart Avenue Properties, San Mateo, CA 94402*
January 2004	*Historical Evaluation Of The Residence Located At 571 Valley Street, San Francisco, CA 94131*
January 2004	*Historical Evaluation Of The 3925 20th Street Residence, San Francisco, CA 94131*
November 2003	*Historical Evaluation of Commercial Building Located at 1022 El Camino Real, San Carlos, CA 94070*
November 2003	*Peer Review Statement for the K & T Foods Building, 451 University Avenue, Palo Alto, CA 94301*
November 2003	*Historical Evaluation of the Greer-O'Brine Property, 51 Encina Avenue, Palo Alto, CA, 94301*
November 2003	*Embarcadero Hotel Environmental Impact Report, Historical Resources Analysis and Design Review Statement*
October 2003	*City of San Leandro Historical Resources Survey, Historic Context Statement, Historic Preservation Ordinance, and Draft Historic Preservation Benefits/Incentive Program*
August 2003	*Palm Theater Environmental Impact Report, Historical Resources Analysis*
July 2003	*Historical Evaluation Of The First Christian Church Building, 2701 Flores Street, San Mateo, CA 94403*
June 2003	*Alameda Naval Air Station Reuse Project Historic Preservation Regulatory and Policy Memorandum* (Prepared for Alameda Point Community Partners-Master Developer for NAS Alameda)
May 2003	*Historical Evaluation Of The Residence Located At 606 Dorchester Road, San Mateo, CA 94403*
March 2003	*Ames Aeronautical Laboratory 40' x 80' Wind Tunnel National Register Nomination* (Prepared for NASA Ames Research Center)
March 2003	*Ames Aeronautical Laboratory 6' x 6' Supersonic Wind Tunnel National Register Nomination* (Prepared for NASA Ames Research Center)
March 2003	*Ames Aeronautical Laboratory Administration Building National Register Nomination* (Prepared for NASA Ames Research Center)
March 2003	*Historical Evaluation Of The Residence Located At 1015 South Grant Street, San Mateo, CA 94402*
February 2003	*8th & Market, 10 United Nations Plaza, Cell Site Impact Review*
February 2003	*Existing Conditions and Subdivision Design Alternatives For The Proposed Hayman Homes Tract No. 7267, Proctor Road, Castro Valley, CA*
February 2003	*Historical Evaluation Of The Residence Located At 336 West Poplar Avenue, San Mateo, CA 94402*
January 2003	*Historical Evaluation Of The Residence Located At 744 Occidental Avenue, San Mateo, CA 94402*
January 2003	*Historical Evaluation Of The 131 and 141 West Third Avenue Apartment Buildings, San Mateo, CA, 94402*
December 2002	*CA State Capitol Building, Sacramento, CA Wireless Antenna Site Review*
November 2002	*Wireless Antenna Site Review, Medical Arts Building, 2000 Van Ness Avenue, San Francisco, CA 94109*
October 2002	*Historical Evaluation Of The LeDucq Winery Estate, 3222 Ehlers Lane, St. Helena, CA 94574* (Revised June 2003)
October 2002	*Historical Assessment Of The St. Patrick's Parish Community Building Located At 3585 30th Street, San Diego, CA, 92104*
September 2002	*Historical Assessment Of The Building Located At 4257 Third Street, San Diego, CA, 92103*
April 2002	*Historical Assessment Of The Building Located At 3567 Ray Street, San Diego, CA, 92104*

October 2001	*Historical Assessment Of The Gustafson's Furniture Building Located At 2930 El Cajon Boulevard, San Diego, CA, 92104*
September 2001	*Historical Review Of Lots A, B, K & L, Block 93, Horton's Addition Lockling*
August 2001	*Core Inventory Of All Sites Appearing To Be More Than 45 Years Of Age Not Previously Documented* (Prepared For Centre City Development Corporation)
August 2001	*Urbana Project Abstract Bibliography* (Prepared for Dr. Roger Caves, San Diego State University and San Diego State University Foundation)
July 2001	*Historical Assessment Of The Kirkland Apartments Building Located At 2309 Fifth Avenue, San Diego, CA, 92103*
July 2001	*Historical Assessment Of The Building Located At 4230 Maryland Street, San Diego, CA, 92103* (With Kathleen A. Crawford)
June 2001	*Historical Assessment Of The 2525-2529, 2537-2547, 2561 First Avenue Residences, San Diego, CA 92103*
May 2001	*Update Of The November 1988 Historic Site Inventory Of Centre City East For Centre City Development Corporation*
April 2001	*East Village Inventory Of All Sites Appearing To Be More Than 45 Years Of Age Not Previously Documented* (Prepared For Centre City Development Corporation)
April 2001	*Update Of The May 1989 Historic Site Inventory Of Bayside For Centre City Development Corporation*
January 2001	*Historic Survey Report Of The Former Teledyne-Ryan Aeronautical Complex 2701 North Harbor Drive San Diego, CA 92101*(with Scott Moomjian)
January 2001	*Historical Assessment Of The Fletcher-Salmons Building 602-624 Broadway, San Diego, CA 92101*
December 2000	*Cultural Resource Report for The Winona Avenue Area Elementary School Preferred Site, Alternative 1 Site, and Alternative 2 Site*
November 2000	*Cultural Resource Report for The Edison/Hamilton/Parks Area Elementary School Preferred Site and Alternative Sites*
November 2000	*Cultural Resource Report for The Adams/Franklin Area Elementary School Preferred Site and Alternative Site*
October 2000	*The National Register of Historic Places Travel Itinerary; Old Town San Diego*
August 2000	*Cultural Resource Report for The Winona Avenue Area Elementary School Preferred Site and Alternative Sites*
July 2000	*Cultural Resource Report For The 52nd Street Area Elementary School Preferred And Alternative Sites*
July 2000	*Historical Assessment Of The 3658 Warner Street Residence, San Diego, CA 92106*
July 2000	*Historical Assessment Of The 367 Catalina Boulevard Residence, San Diego, CA 92106*
July 2000	*Historical Assessment Of The 906 West Lewis Street Residence, San Diego, CA 92103*
May 2000	*Historical Assessment Of The 501-503, 507 and 509 14th Street Residences, San Diego, CA 92101*
May 2000	*The San Diego Flume Company System Redwood Pipeline, San Diego County, CA*
March 2000	*Historical Assessment of The Society For Crippled Children's Hydrotherapy Gymnasium Located at 851 South 35th Street, San Diego, CA 92113*

ATTACHMENT C.4

LETTER TO NAHC

Pacific Legacy Incorporated

Central Coast Division/Administration
1525 Seabright Ave.
Santa Cruz, California 95062

Phone: 831.423.0588
Fax: 831.423.0587
www.pacificlegacy.com

August 18, 2006

RECEIVED
AUG 21 2006

Ms. Debbie Pilas-Treadway
Associate Governmental Program Analyst
Native American Heritage Commission
915 Capitol Mall, room 364
Sacramento, CA 95814

Re: Project # 1856-01 (Avenal Energy) located on Private Lands near Avenal, Fresno and Kings counties.

Dear Ms. Pilas-Treadway,

This project is located on the Huron and La Cima, CA 7.5' USGS Topographic Quadrangles, in Fresno and Kings counties. The project area is in Township 20 South, Range 17 East, Sections 34 and 35; and Township 21 South, Range 17 East, Sections 1, 2, 3, 11, 12, 13, 14, 23, 25 and 26; and Township 21 South Range 18 East, Sections 6, 7, 18, 19 and 30. Please refer to the attached 3 maps for the exact location.

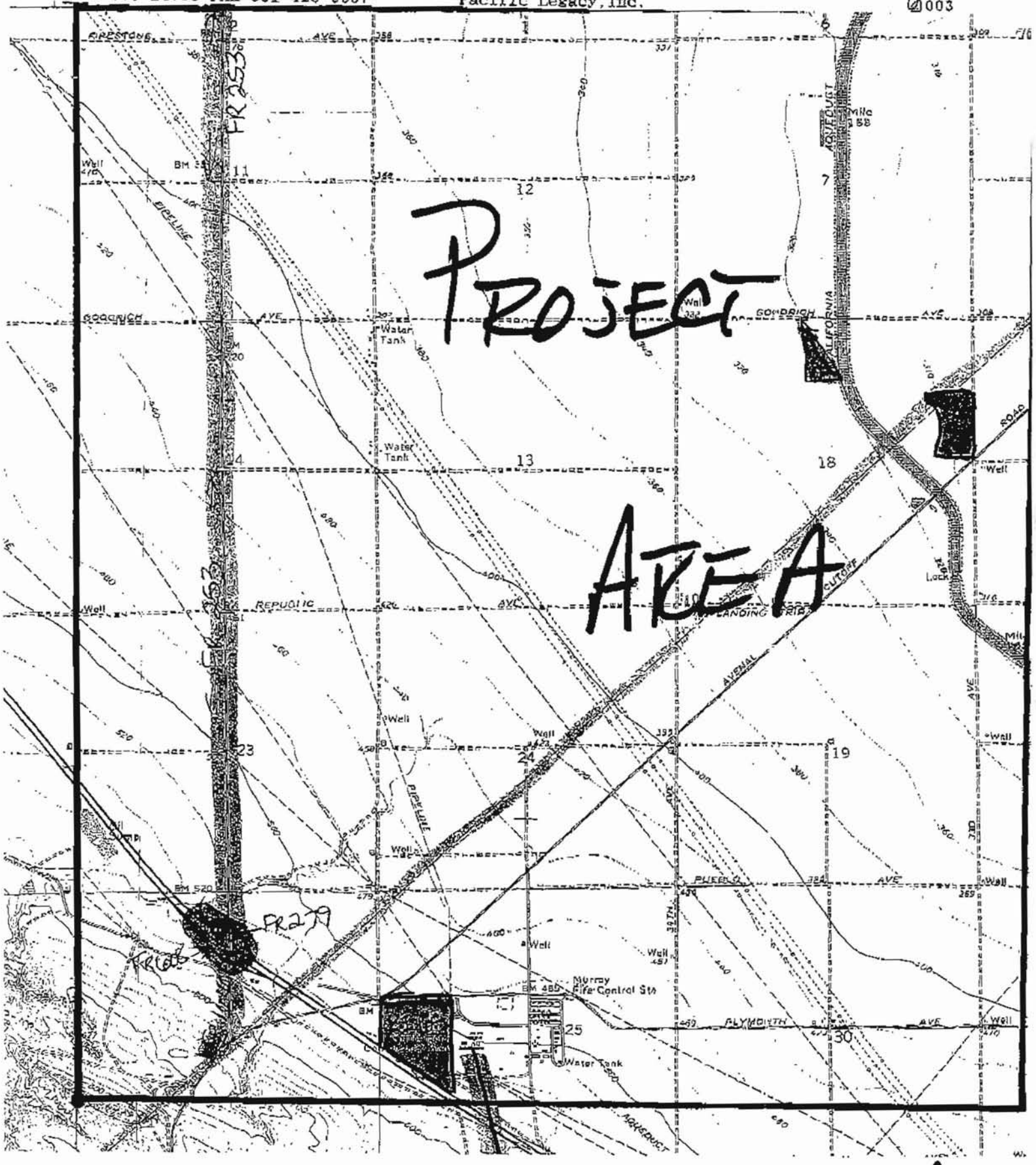
Please consult the Sacred Lands File maintained by your office to determine if there are any Native American cultural resources in the immediate project area. Please also provide a list of Native American individuals or organization that may be able to assist with the identification and preservation of cultural resources in the area.

Thank you for your assistance. Please call me at (831) 423-0588 ext. 16 if you have any questions.

Sincerely,

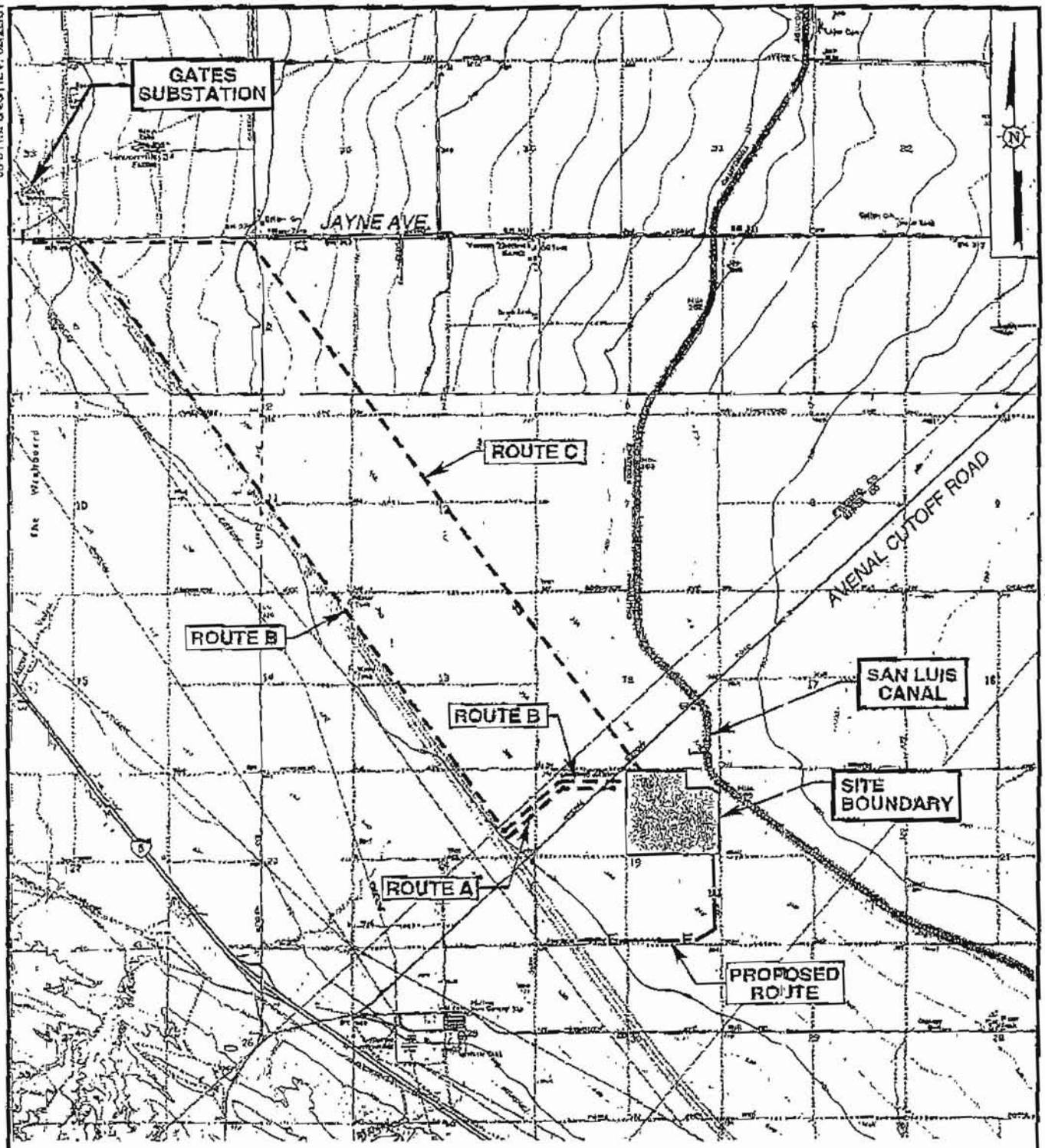
Thomas L. Jackson, Ph.D.
Senior Archaeologist

Attachment: location map



USGS La Cima 7.5' Fresno & Kings Co.
T21S R17 & 18E

USGS Huron 7.5'
FRESNO, Co.
PROJECT
AREA
R17E
21
22
23
28
27
26
33
34
35
3
TRINITY
SISKIYOU
PHELPS
JAYNE
Reservoir
Well
Grain Tank
Sommerville Farms
Substation
Cotton Gin
Water Tank
370 Well
BM 401
BM 353
BM 376
BM 375
300 000 FEET
670 000 FEET
36°07'30"
120°07'30"
Vern
Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Culture and drainage compiled from aerial photographs taken 1955. Topography by planetable surveys 1956
Polyconic projection. 1927 North American datum
10,000-foot grid based on California coordinate system, zone 4
(AVENAL) 1956 11 SW
GN
MN
31 MILS
284 MILS



0 4,000 8,000 FEET
SCALE

REFERENCE: U.S.G.S 7.5 MINUTE TOPOGRAPHIC SERIES MAPS OF HURON, CALIFORNIA, DATED 1971 AND LA CIMA, CALIFORNIA, DATED 1976.

TRANSMISSION LINE ALTERNATIVES

[redacted]

[redacted] FIGURE 5.5-1

ATTACHMENT S.1

AGENCY CONTACTS FOR SOCIOECONOMICS

ADMINISTRATIVE AGENCY CONTACTS FOR SOCIOECONOMICS

AGENCY CONTACT	PERMITTING/APPROVAL AUTHORITY FOR SOCIOECONOMICS
Kings County Fire Department 280 North Campus Drive Hanford, California 93230 (559) 582-3211 J. Kilner, Chief	None
Kings County Sheriff's Department - Avenal Station 501 East Kings Avenal, California 93202 (559) 386-5361 D. Putnam, Commander, Avenal Station	None
Kings County Office of Education 1144 Lacey Boulevard Hanford, California 93230 (559) 589-7091 S. Corl, Assistant Superintendent of Business	None
Kings County Auditor's Office 1400 West Lacey Boulevard Hanford, California 93230 (559) 582-3211 ext. 2460 H. Nikoghosian, Auditor	None
Kings County Appraiser's Office 1400 West Lacey Boulevard Hanford, California 93230 (559) 582-3211 ext. 2497 M. Loya, Chief Appraiser	None
City of Avenal 919 Skyline Boulevard Avenal, California 93204 (559) 386-5766 M. Whitten, City Manager	None
Reef-Sunset Unified School District 205 North Park Avenue Avenal, California 93204 (449) 386-9083 ext. 5 Charles Price, Senior Account Clerk	None

ATTACHMENT T.1

INTERCONNECTION FEASIBILITY STUDY REPORT

Interconnection Feasibility Study Report

Generation Interconnection

Avenal Power Center, LLC

Avenal Energy Project

(Revision 1)

March 24, 2008

This study has been completed in coordination with Pacific Gas & Electric per the Large Generator Interconnection Procedures.

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A. **Interconnection Feasibility Study Plan**
B. **Contingency Lists for Outages**
C. **Steady State Power Flow Results**
D. **Steady State Power Flow Plots**

1. Summary

Avenal Power Center, LLC, an Interconnection Customer (IC), has submitted a completed Interconnection Request (IR) to the California Independent System Operator Corporation (CAISO) for their proposed Avenal Energy Project (Project). The Project is a combined cycle generation project. The maximum net output to the grid will be 600 MW. The proposed commercial operation date of the Project is June 1, 2012. The primary Point of Interconnection (POI) will be the 230 kV bus at Pacific Gas and Electric Company's (PG&E) Gates Substation in Kings County, California. The alternative POI will be the Gates – Arco 230 kV Line or the Gates – Midway 230 kV Line via looped connection.

In accordance with FERC's Large Generation Interconnection Procedures (LGIP), the IC, CAISO, and PG&E have agreed that an Interconnection Feasibility Study (IFS) would be required for this Project to determine the impact of the Project on the CAISO Controlled Grid. The purpose of this study is to:

1) Identify transmission system impacts caused solely by the addition of the proposed project

2) Identify the system reinforcements, if any, necessary to mitigate the adverse impact of the proposed project under various system conditions

3) Preliminarily evaluate the feasibility of the proposed interconnection, and if necessary, the alternative interconnection on the CAISO Controlled Grid

4) Indicate expected results of the Interconnection System Impact Study (ISIS)

To determine the system impacts caused by the Project, studies were performed using the 2013 Summer Peak, Summer Off-Peak, and Spring Peak Full Loop Base Cases.

The power flow analysis concluded that the Project will not cause any new Category "A" normal overloads. However, it will cause four (4) summer peak, one (1) summer off-peak, and two (2) spring peak new Category "B" emergency overloads. The Project will also cause seven (7) summer peak, six (6) summer off-peak, and five (5) spring peak new Category "C" emergency overloads.

The power flow analysis indicated that the Project causes no reactive power deficiencies.

The non-binding cost estimate of the Interconnection Facilities[1] to interconnect the project would be approximately **$2.1 million**, exclusive of ITCC[2].

[1] The transmission facilities necessary to physically and electrically interconnect the Project to the CAISO Controlled Grid at the point of interconnection.
[2] Income Tax Component of Contribution

The non-binding cost estimate for the Network Upgrades[3] needed to interconnect the project would be approximately **$44.2 million**, exclusive of ITCC.

The non-binding construction schedule to engineer and construct the facilities is approximately 24 to 48 months from the signing of the Large Generator Interconnection Agreement.

Based on initial inspection the IFS determined that the interconnection is technically feasible.

2. Project and Interconnection Information

Table 2-1 provides general information about the Project.

Table 2-1: Project General Information

Project Location	Kings County, California
PG&E Planning Area	Fresno Division
Number and Type of Generators	2x1 Combined Cycle Generators
Maximum Generator Output	635.6 MW
Generator Auxiliary Load	35.6 MW
Maximum Net Output to Grid	600 MW
Power Factor	0.85 Lag to 0.95 Lead
Step-up Transformer	Two CTG GSU 238/18 kV, each 220 MVA, One STG GSU 238/18 kV, 390 MVA
Description Of Interconnection Configuration	A Single Tie Line to 230 kV Bus at Gates Substation
Connection Voltage	230 kV
Description Of Alternative Interconnection Configuration	Loop into Gates – Arco 230 kV Line or Gates – Midway 230 kV Line
Alternative Connection Voltage	230 kV

[3] The transmission facilities, other than Interconnection Facilities, beyond the point of interconnection necessary to interconnect the Project safely and reliably to the CAISO Controlled Grid.

Figure 2-1 provides the map for the Project and the transmission facilities in the vicinity. Figure 2-2 shows the single line diagram of the Project.

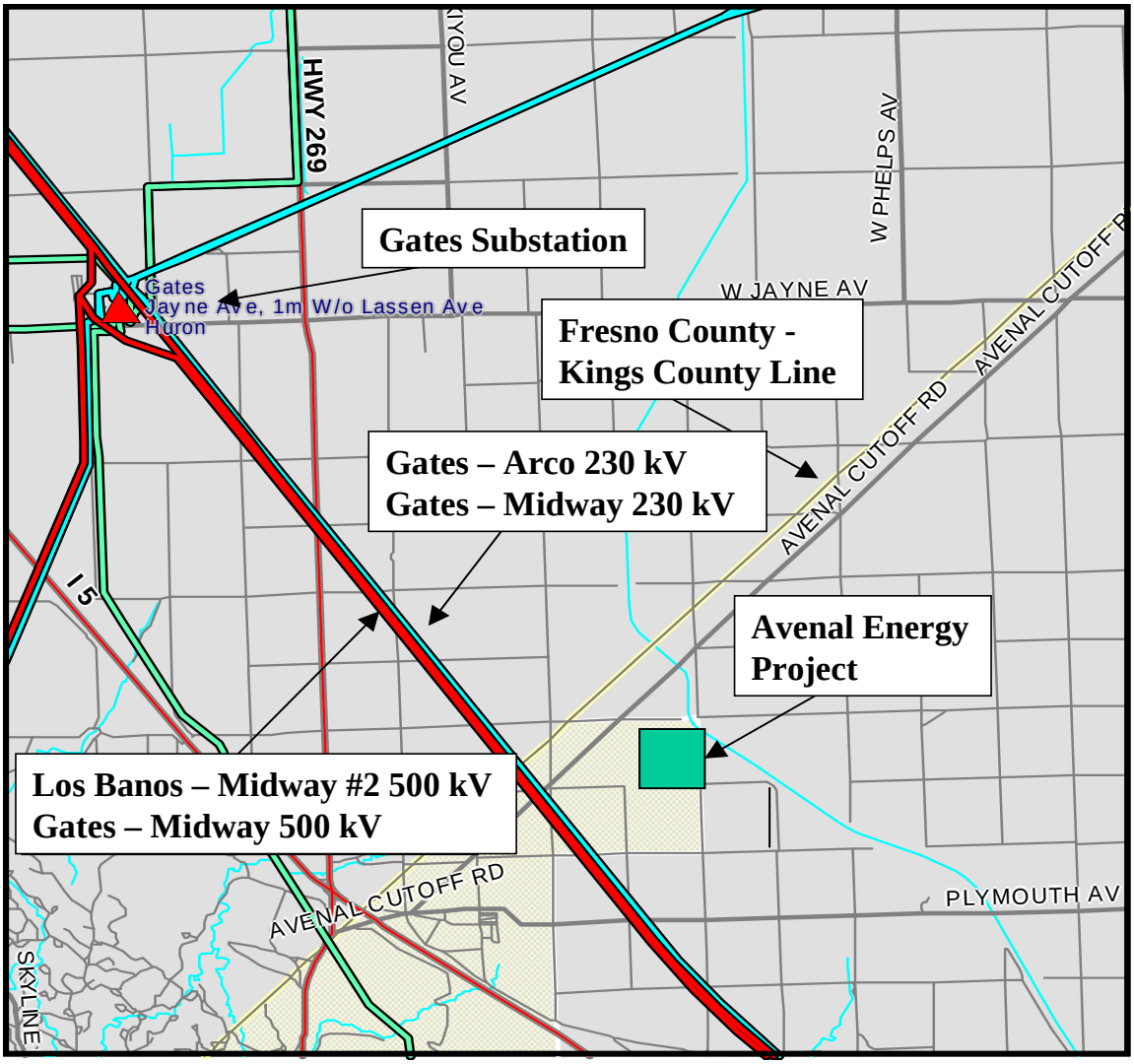

Figure 2-1: Location Map

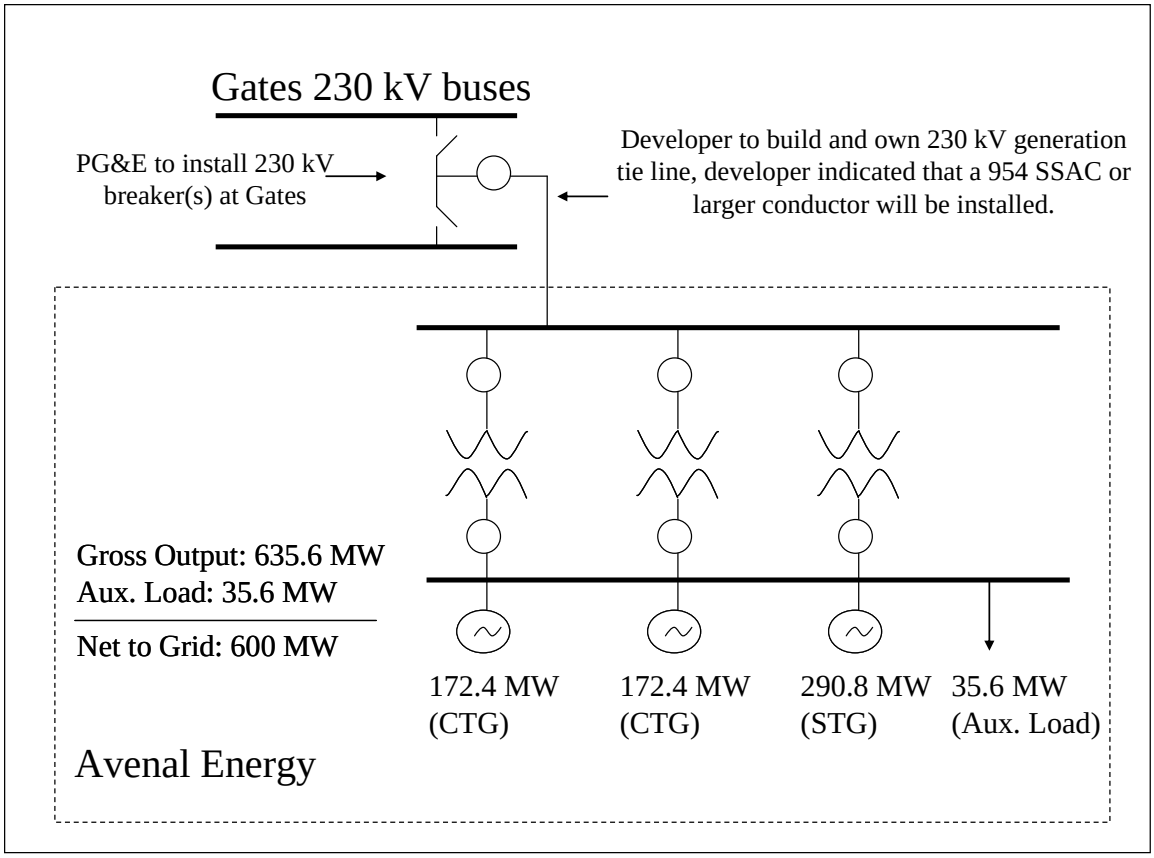

Figure 2-2: Conceptual one-line Diagram

3. Study Assumptions

The CAISO and PG&E conducted the IFS under the following assumptions:

1) The maximum net output of the Project into the CAISO Controlled Grid is 600 MW.
2) The expected commercial operation date is June 1, 2012.
3) The IC will engineer, procure, construct, own, and maintain its project facility.
4) The IC will engineer, procure, construct, own, and maintain the generator tie line.
5) This study performed the future year study to take into account all proposed generating facilities located in PG&E's service territory with higher queue positions as listed in the CAISO Generation Queue. Based on the September 30, 2007 Generation Queue List, the future year for this study is 2013.

4. Power Flow Study Base Cases

Three power flow base cases, 2013 Summer Peak, Summer Off-Peak, and Spring Peak full loop base cases, were used to evaluate the feasibility of the proposed project and its impacts on the CAISO Controlled Grid. While it is impractical to study all combinations of system load and generation levels during all seasons and at all times of the day, the base cases represent extreme loading and generation conditions for the study area.

The CAISO and PG&E cannot guarantee that the Project can operate at maximum rated output 24 hours a day, year round, without system impacts, nor can the CAISO and PG&E guarantee that the Project will not have system impacts during the times and seasons not studied in the IFS.

- **2013 Summer Peak Full Loop Base Case**

  Power flow analysis was performed using PG&E's 2013 Summer Peak Full-Loop Base Case (in General Electric Power Flow format). This base case was developed from PG&E's 2007 base case series and has a 1-in-10 year extreme weather load level for the Greater Fresno Area.

- **2013 Spring Peak Full Loop Base Case**

  Power flow analysis was also performed using the 2013 Spring Peak Full Loop Base Case in order to evaluate the potential congestion on transmission facilities under reduced load and increased generation levels during a typical Spring season. Typical Spring season load was applied in this base case. Hydro generation was modeled in a very high level as typical in the spring season.

- **2013 Summer Off-Peak Full Loop Base Case**

  Power flow analysis was also performed using the 2013 Summer Off-Peak Full Loop Base Case in order to evaluate potential congestion on transmission facilities during the off-peak system condition. The summer off-peak load was modeled at 50% of summer peak load level in the Greater Fresno Area. The Path 15 flow was around 5,000 MW in a south-to-north direction. Two units at Helms PGP (620 MW total) were assumed in pumping mode.

The base cases modeled all approved CAISO transmission reliability projects that will be operational by 2013. It also modeled all proposed queued generation projects that are ahead of this project in the CAISO queue. However, some generation projects that are electrically far from the proposed project were either turned off or modeled with reduced generation to balance the loads and resources in the power flow model. The major generation projects included are shown in Attachment 1 of the IFS Study Plan.

5. Study Criteria Summary

The CAISO Controlled Grid Reliability Criteria, which incorporate the Western Electricity Coordinating Council (WECC) and the North American Electric Reliability Council (NERC) planning criteria, were used to evaluate the impact of the Project on the CAISO Controlled Grid.

5.1 Steady State Study Criteria – Normal Overloads

Normal overloads are those that exceed 100 percent of normal ratings. The CAISO Controlled Grid Reliability Criteria requires the loading of all transmission system facilities be within their normal ratings.

5.2 Steady State Study Criteria – Emergency Overloads

Emergency overloads are those that exceed 100 percent of emergency ratings. The emergency overloads refer to overloads that occur during single element contingencies (Category “B”) and multiple element contingencies (Category “C”).

6. Steady State Power Flow Study and Results

The IFS studied the impact of the Project on the CAISO Controlled Grid. Three base cases, identified in Section 4, were used to simulate the impact of the new facility during normal operating conditions, as well as during single and multiple (Categories “B” and “C”) contingency conditions:

6.1 Contingencies

The Category “B” and “C” contingencies used in this analysis are provided in Appendix B. The single (Category “B”) and selected multiple (Category “C”) contingencies include the following outages:

6.1.1 Category “B”

- All single (60 - 230 kV) generator outages within the study area
- All single (60 - 230 kV) transmission circuit outages within the study area
- All single (60 - 230 kV) transformer outages within the study area
- Selected overlapping single generator and transmission circuit outages for the transmission lines and generators within the study area

6.1.2 Category "C"

- Selected bus (60-230 kV) outages within the study area
- Selected outages caused by selected breaker failures (excluding bus tie and sectionalizing breakers) at the same above bus section
- Selected combination of any two-generator/transmission line/transformer outages (except ones included above in Category "B") within the study area
- Selected outages of double circuit tower lines (60-230 kV) within the study area

6.2 Study Results

Appendix B provides a list of the contingencies studied. Appendix C shows the steady state power flow analysis results. Appendix D includes selected power flow plots.

6.2.1 Category "A" Normal Overloads

The Project causes no new and exacerbates some pre-project Category "A" normal overloads during the 2013 summer peak, summer-off-peak, and spring peak conditions. Table 6-2.1 summarizes the normal overload condition. Facilities with pre-project overloads are shown as shaded in the table.

Table 6-2.1: Category "A" Normal Overloads

Over Loaded Component	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
2013 Summer Peak Conditions						
Warnerville – Wilson 230kV Line	675.3	894.04	132.4	981.12	145.3	12.9
Los Banos – Westley 230kV Line	1484	1519.55	102.39	1705.73	114.94	12.55
Bellota – Warnerville 230kV Line (@ Warnerville)	675.3	980.43	145.2	1050.75	155.61	10.41
Bellota – Warnerville 230kV Line (@Bellota)	675.3	903.75	133.84	973.75	144.21	10.37
Wilson – Borden #1 Line (@Borden)	675.3	1019.24	150.94	1079.48	159.86	8.92
Wilson – Borden #1 Line (@Wilson)	743	922.04	124.09	982.65	132.25	8.16
Wilson – Borden #2 Line (@Borden)	675.3	869.96	128.84	921.8	136.51	7.68
Wilson – Borden #2 Line (@Wilson)	675.3	783.16	115.98	834.41	123.57	7.59
Midway – Q194SWST 230kV Line	825.9	1487.94	180.17	1528.26	185.05	4.88
Q166 – Midway 230kV Line	825.9	1474.47	178.54	1514.74	183.41	4.88
Q166 – Q194SWST 230kV Line	825.9	1021.2	123.65	1059.97	128.35	4.69

Over Loaded Component	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Oro Loma – Canal 70kV Line (@Oro Loma)	243.3	252.39	103.73	260.26	106.97	3.23
Morro Bay – Gates #2 230kV Line	825.1	919.79	111.47	877.83	106.39	-5.09
2013 Summer Off-Peak Conditions						
Bellota – Warnerville 230kV Line (@Warnerville)	675.25	866.99	128.4	895.6	132.63	4.24
Bellota – Warnerville 230kV Line (@Bellota)	675.25	831.61	123.16	860.21	127.39	4.24
Los Banos Westley 230kV Line (@Los Banos)	1484.04	1871.62	126.12	1900.31	128.05	1.93
McCall - Sanger #3 115kV Line (@McCall)	823.35	824.82	100.18	836.12	101.55	1.37
Templeton – Gates 230kV Line (@Gates)	825.11	846.8	102.63	782.83	94.88	-7.75
Morro Bay – Gates #2 230kV Line (@Morro Bay)	825.11	909.59	110.24	845.24	102.44	-7.8
2013 Spring Peak Conditions						
Warnerville – Wilson 230kV Line	675.25	787.89	116.68	875.59	129.67	12.99
Bellota – Warnerville 230kV Line (@Warnerville)	675.25	814.17	120.57	881.94	130.61	10.04
Bellota – Warnerville 230kV Line (@Bellota)	675.25	752.22	111.4	819.62	121.38	9.98
Wilson – Borden #1 230kV Line (@Borden)	675.25	884.47	130.98	943.65	139.75	8.76
Wilson – Borden #1 230kV Line (@Wilson)	743.02	808.41	108.8	868.07	116.83	8.03
Wilson – Borden #2 230kV Line (@Borden)	675.25	754.38	111.72	805.21	119.25	7.53
Wilson – Borden #2 230kV Line (@Wilson)	675.25	686.45	101.66	736.93	109.13	7.48

6.2.2 Category "B" Emergency Overloads

The Project causes four (4), one (1), and two (2) new Category "B" emergency overloads during the 2013 summer peak, summer off-peak, and spring peak conditions, respectively. Table 6-2.2 summarizes the emergency overload conditions. Facilities with pre-project overloads are shown as shaded in the table.

Table 6-2.2: Category "B" Emergency Overloads

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
2013 Summer Peak							
Warnerville – Wilson 230kV Line	T-1 (Gates 500/230kV Bank #11)	793	1030	129.8	1172	147.7	17.9
Panoche-Dos Amigos PP 230kV Line	T-1 (Gates 500/230kV Bank #11)	850	784	92.3	931.2	109.6	17.3
Bellota – Warnerville 230kV Line (@Warnerville)	T-1 (Gates 500/230kV Bank #11)	793	1074	135.4	1180.7	148.9	13.5
Bellota – Warnerville 230kV Line (@Bellota)	T-1 (Gates 500/230kV Bank #11)	793	997	125.7	1103.4	139.1	13.4

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Los Banos – Westley 230kV Line	T-1 (Gates 500/230kV Bank #11)	1700	1629	95.8	1851.3	108.9	13.1
Wilson – Borden #1 230kV Line (@ Borden)	T-1 (Gates 500/230kV Bank #11)	793	1115	140.6	1215.4	153.2	12.7
Wilson – Borden #2 230kV Line (@ Borden)	L-1/G-1 (Wilson – Borden #1 230kV Line and Melones PH#1)	793	1459	184	1546.5	195	11
Q194SWST – Midway 230kV Line	T-1 (Gates 500/230kV Bank #11)	976	1626	166.5	1729.9	177.2	10.7
Q166 – Midway 230kV Line	T-1 (Gates 500/230kV Bank #11)	976	1612	165.1	1716.1	175.7	10.7
Bellota – Melones 230kV Line (@Melones)	L-1/G-1 (Warnerville – Wilson 230kV Line and Kerckhoff PH#2)	850	828	97.4	894.3	105.2	7.8
Wilson – Le Grand 115kV Line	L-1/G-1 (Wilson – Borden #1 230kV Line and Melones PH#1)	512	559	109.3	595.4	116.3	7
Le Grand – Chowchilla 115kV Line	L-1/G-1 (Wilson – Borden #1 230kV Line and Exchequer PH)	397	431	108.7	455.4	114.8	6.1
Oro Loma - Canal #1 70kV Line	T-1 (Gates 500/230kV Bank #11)	282	273	96.9	290	102.8	5.9
Oro Loma - Mendota 70kV Line	T-1 (Oro Loma 115/70kV Bank #2)	396	404	102	418	105.6	3.6
Merced Falls – Exchequer 115kV Line	L-1/G-1 (Exchequer – Le Grand 115kV Line and Exchequer PH (due to SPS))	280	308	109.9	313	111.6	1.8
Templeton – Gates 230kV Line	L-1 (Morro Bay – Gates #2 230kV Line)	975	1186	121.7	1130.1	115.9	-5.8
Morro Bay – Gates #2 230kV Line	L-1 (Templeton – Gates 230kV Line)	975	1263	129.6	1206.5	123.8	-5.8
2013 Summer Off-Peak							
Bellota – Warnerville 230kV Line (@Warnerville)	T-1 (Gates 500/230kV Bank #11)	793	907	114.4	978.2	123.3	8.9
Bellota – Warnerville 230kV Line (@Bellota)	T-1 (Gates 500/230kV Bank #11)	793	872	109.9	942.7	118.8	8.9
Dos Amigos – Panoche #3 230kV Line	L-1/G-1 (Los Banos - Panoche 230kV Line and Helms Pump #1)	850	800	94.2	865.5	101.8	7.7
Warnerville – Wilson 230kV Line	L-1/G-1 (Melones – Wilson 230kV Line and Helms Pump #1)	793	828	104.3	876.5	110.5	6.2
Wilson - Borden #1 230kV Line (@Borden)	L-1/G-1 (Wilson – Borden #2 230kV Line and Helms Pump #1)	793	899	113.4	941.7	118.7	5.3
Wilson – Borden #2 230kV Line (@Borden)	L-1/G-1 (Wilson-Borden #1 230kV Line and Helms Pump #1)	793	838	105.6	877.7	110.7	5
Wilson – Borden #2 230kV Line (@Wilson)	L-1/G-1 (Wilson-Borden #1 230kV Line and Helms Pump #1)	793	801	101	840.5	106	5
Wilson - Borden #1 230kV Line (@Wilson)	L-1/G-1 (Wilson – Borden #2 230kV Line and Helms Pump #1)	851	854	100.4	897.1	105.4	5
Los Banos – Westley 230kV Line	T-1 (Gates 500/230kV Bank #11)	1700	1919	112.9	1993.6	117.3	4.4
McCall – Sanger #3 115kV Line	L-1 (Helm – McCall 230kV Line)	974	992	101.8	1010.8	103.8	1.9

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Barton – Sanger 115kV Line	L-1 (Manchester – Sanger 115kV Line)	1125	1125	100.1	1139.7	101.4	1.3
Coalinga No.1 – Coalinga No. 2 70kV Line	L-1 (Gates – Coalinga No.1 70kV Line)	378	382	101	373.1	98.8	-2.2
Templeton – Gates 230kV Line	L-1/G-1 (Morro Bay – Gates #2 230kV Line and Helms Pump #1)	975	1191	122.2	1103.3	113.2	-9
2013 Spring Peak							
Warnerville-Wilson 230kV Line	T-1 (Gates 500/230kV Bank #11)	793	912	115	1057	133.3	18.3
Bellota-Warnerville 230kV Line (@Warnerville)	T-1 (Gates 500/230kV Bank #11)	793	905	114	1014	127.8	13.8
Bellota-Warnerville 230kV Line (@Bellota)	T-1 (Gates 500/230kV Bank #11)	793	842	106.2	951	119.9	13.7
Wilson-Borden #1 230kV Line (@Borden)	T-1 (Gates 500/230kV Bank #11)	793	972	122.5	1073	135.2	12.7
Wilson-Borden #1 230kV Line (@Borden)	T-1 (Gates 500/230kV Bank #11)	851	896	105.3	998	117.3	11.9
Wilson-Borden #1 230kV Line (@Borden)	L-1/G-1 (Wilson – Borden #1 230kV Line and Helms PH#1)	793	1055	133	1144	144.2	11.2
Wilson – Borden #2 230kV Line (@Borden)	T-1 (Gates 500/230kV Bank #11)	793	829	104.5	916	115.4	10.9
Bellota – Melones 230kV Line (@Bellota)	L-1 (Warnerville – Wilson 230kV Line)	850	849	99.8	914	107.5	7.7
Chowchilla – Kerckhoff 2 115kV Line	L-1/G-1 (Wilson – Borden #2 230kV Line and Exchequer PH)	397	391	98.5	416	105	6.5
Oro Loma – Canal 70kV Line	Los Banos – Canal – Oro Loma 70kV Line	282	294	104.3	310	109.9	5.6
McCall – Kingsburg #1 115kV Line	McCall – Kingsburg #2 115kV Line	282	294	104.3	310	109.9	5.6

6.2.3 Emergency Overloads (Category "C")

The Project causes nine (9), six (6), and five (5) new Category "C" emergency overloads during the 2013 summer peak, summer off-peak, and spring peak conditions. Table 6-2.3 summarizes the emergency overload conditions. Facilities with pre-project overloads are shown as shaded in the table.

Table 6-2.3: Category "C" Contingency Overloads

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
2013 Summer Peak							
Los Banos – Panoche #2 230kV Line	B-1 (Los Banos 230kV Bus Section #2)	850	852	100	979.5	115.3	15
Wilson – Warnerville 230kV Line	B-1 (Los Banos 230kV Bus Section #1)	793	1026	129	1136.3	143.3	13.8

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Los Banos – Panoche #1 230kV Line	L-2 (Los Banos – Panoche #2 and Dos Amigos PP – Panoche #3 230kV Lines)	975	978	100	1111.3	114	13.7
Los Banos – Dos Amigos PP 230kV Line	B-1 (Panoche 230kV Bus Section 2)	850	760	89	872.7	102.7	13.3
Dos Amigos PP - Panoche #3 230kV Line	B-1 (Panoche 230kV Bus Section 2)	850	977	115	1089.5	128.2	13.2
Los Banos – Westley 230kV Line	L-2 (Melones – Wilson and Warnerville – Wilson 230kV Lines)	1700	1655	97	1873.1	110.2	12.8
Wilson – LeGrand 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	512	1013	198	1076.5	210.2	12.5
Chowchilla – Kerckhoff 2 115kV Line	L-2 (Wilson - Borden #1 and #2 230kV Lines)	397	596	150	643.4	162.2	11.9
Warnerville – Bellota (@Warnerville)	L-2 (Bellota - Melones and Melones - Wilson 230kV Lines)	793	991	125	1078.8	136	11
Warnerville – Bellota (@Bellota)	L-2 (Bellota - Melones and Melones - Wilson 230kV Lines)	793	914	115	1001.8	126.3	11
Le Grand – Chowchilla 115kV Line	L-2 (Wilson - Borden #1 and #2 230kV Lines)	397	675	170	716.3	180.6	10.4
Wilson – Borden #1 230kV Line (@ Borden)	B-1 (Los Banos 230kV Bus Section 1)	793	1086	137	1158.8	146.1	9.1
Wilson – Le Grand 115kV Line	L-2 (Wilson - Borden #1 and #2 230kV Lines)	398	389	98	424	106.5	8.8
Wilson – Borden #1 230kV Line (@Wilson)	B-1 (Los Banos 230kV Bus Section 1)	851	990	116	1062.3	124.8	8.5
Wilson – Borden #2 230kV Line (@Borden)	B-1 (Los Banos 230kV Bus Section 1)	793	928	117	989.9	124.8	7.8
Wilson – Borden #2 230kV Line (@Wilson)	B-1 (Los Banos 230kV Bus Section 1)	793	840	106	901.8	113.7	7.8
Wilson – Oro Loma 115kV Line	L-2 (Wilson - Borden #1 and #2 230kV Lines)	512	512	100	549.4	107.3	7.2
Warnerville – Standiford #7 or 8 115kV Lines	L-2 (Bellota - Melones and Bellota - Warnerville 230kV Lines)	939	994	106	1061.6	113.1	7.2
Helm – McCall 230kV Line	B-1 (Gates 230kV Bus Section 2D)	850	902	106	958.7	112.8	6.7
Panoche – Helm 230kV Line	B-1 (Gates 230kV Bus Section 2D)	850	813	96	869.5	102.3	6.6
Oro Loma – Canal 70kV Line	L-2 (Melones - Wilson and Warnerville - Wilson 230kV Lines)	282	281	100	295.2	104.7	5.1
Herndon – Kearney 230kV	L-2 (Wilson - Borden #1 and #2 230kV Lines)	976	1243	127	1292.5	132.4	5.1

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Line							
Panoche – Kearney 230kV Line	L-2 (Wilson - Borden #1 and #2 230kV Lines)	975	1021	105	1068.9	109.6	4.9
Q194SWST – Midway 230kV Line	L-2 (Gates - Panoche #1 and #2 230kV Lines)	975	969	99	1017	104.3	4.9
Q166 – Midway 230kV Line	L-2 (Gates - Panoche #1 and #2 230kV Lines)	976	1499	154	1546.3	158.4	4.9
Q194SWST – Q166	L-2 (Gates - Panoche #1 and #2 230kV Lines)	976	1485	152	1532.7	157	4.9
McCall – Sanger 115kV Line	L-2 (McCall - Sanger #1 and #2 115kV Lines)	976	1031	106	1077	110.3	4.7
Oro Loma - Mendota 70kV Line	B-1 (Panoche 115kV Bus Section 1)	974	1076	110	1118	114.8	4.4
Schindler - Coalinga #2 70kV Line	B-1 (Gates 230kV Bus Section 2D)	396	401	101	416.1	105.1	3.8
Atwater - Merced 115kV Line	L-2 (Wilson - Atwater and El Capitan - Wilson 115kV Lines)	398	432	108	442.3	111	2.6
Merced Falls – Exchequer 115kV Line	B-1 (Exchequer 115kV Bus)	512	1013	198	1024.6	200.1	2.3
Wilson – Merced #1 or #2 115kV Line	L-2 (Wilson - Atwater and El Capitan - Wilson 115kV Lines)	280	305	109	310.1	110.6	1.7
Helm – Stroud SW STA 70kV Line	L-2 (Panoche - Helm and Panoche - Kearney 230kV Lines)	472	710	150	716.9	151.9	1.5
Herndon – Woodward 115kV Line	B-1 (Gates 230kV Bus Section 2D)	378	468	124	473	125.2	1.2
Sanger – Reedley 70kV Line	B-1 (Gates 230kV Bus Section 2D)	974	1100	113	1111.9	114.2	1.2
Gregg – Ashlan 230kV Line	L-2 (Gregg - Herndon #1 and #2 230kV Lines)	396	566	143	570.5	144.1	1.2
Templeton – Gates 230kV Line	B-1 (Gates 230kV Bus Section 2D)	850	1254	148	1244.2	146.4	-1.2
Morro Bay – Gates #2 230kV Line	B-1 (Gates 230kV Bus Section 2D)	975	1182	121	1121.7	115.1	-6.2
2013 Summer Off-Peak							
Gates – Panoche #1 230kV Line	B-1 (Panoche 230kV Bus Section 2)	850	794	93.4	892.4	105	11.6
Los Banos – Panoche #2 230kV Line	B-1 (Los Banos 230kV Bus Section 2)	850	810	95.3	897.5	105.6	10.3
Los Banos – Panoche #1 230kV Line	L-2 (Los Banos – Panoche #2 and Dos Amigos – Panoche 230kV Lines)	975	931	95.5	1021.8	104.8	9.3
Los Banos – Dos Amigos PP 230kV Line	B-1 (Panoche 230kV Bus Section 1)	850	773	91	850.7	100.1	9.1
Dos Amigos PP -	B-1 (Panoche 230kV Bus Section 1)	850	987	116.1	1064.1	125.2	9.1

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Panoche #3 230kV Line							
Wilson – LeGrand 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	512	679	132.5	708.2	138.3	5.8
Chowchilla – Kerckhoff 2 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	397	391	98.6	413.6	104.3	5.7
Warnerville-Wilson 230kV Line	L-2/G-1 (Panoche – Kearney and Helm – McCall 230kV Lines and Helms Pump (HTT-RAS))	793	756	95.3	800.3	100.9	5.6
Bellota – Warnerville 230kV Line (@Warnerville)	L-2/G-1 (Bellota – Melones and Melones – Wilson 230kV Lines and Helms Pump (HTT-RAS))	793	998	125.8	1034.6	130.4	4.7
Bellota – Warnerville 230kV Line (@Bellota)	L-2/G-1 (Bellota – Melones and Melones – Wilson 230kV Lines and Helms Pump (HTT-RAS))	793	962	121.3	999.2	126	4.7
Panoche – Helm 230kV Line	B-1 (Sanger 115kV Bus Section #2)	850	1024	120.5	1055	124.1	3.6
Helm - McCall 230kV Line	B-1 (Sanger 115kV Bus Section #2)	850	1166	137.2	1197	140.8	3.6
Los Banos - Westley 230kV Line	L-2/G-1 (Melones – Wilson and Warnerville – Wilson 230kV Lines and Helms Pump (HTT-RAS))	1700	2078	122.2	2122.8	124.9	2.7
Sanger – McCall #3 115kV Line	L-2 (McCall – Sanger #1 and #2 115kV Lines)	974	1550	159.2	1571.3	161.3	2.2
Tivy Valley – Reedley 70kV Line	B-1 (Sanger 115kV Bus Section #2)	298	376	126.4	382.7	128.5	2.1
Tivy Valley – Coppermine 70kV Line	B-1 (Sanger 115kV Bus Section #2)	298	344	115.5	350.1	117.6	2.1
Kerckhoff – Clovis – Sanger 115kV Line	L-2 (Barton – Sanger and Manchester – Sanger 115kV Line)	743	851	114.6	865	116.4	1.9
Paso Robles – San Miguel 115kV Line	B-1 (Gates 230kV Bus Section 1D)	346	374	108	365.6	105.6	-2.5
Templeton – Gates 230kV Line	B-1 (Gate 230kV Bus Section 2D)	975	1194	122.5	1103.6	113.2	-9.3
Morro Bay – Gates #2 230kV Line	B-1 (Gates 230kV Bus Section 1D)	975	1219	125	1125.6	115.4	-9.6
2013 Spring Peak							
Los Banos – Panoche #2 230kV Line	B-1 (Los Banos 230kV Bus Section 2)	850	752	88.4	872	102.5	14.1
Warnerville-Wilson 230kV Line	B-1 (Los Banos 230kV Bus Section 1)	793	888	111.9	993	125.2	13.3
Panoche-Dos Amigo PP 230kV Line	B-1 (Panoche 230kV Bus Section 1)	850	818	96.3	924	108.7	12.4
Wilson – Le Grand 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	512	756	147.7	819	159.9	12.2

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Chowchilla-Kerckhoff 2 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	397	598	150.7	642	161.9	11.2
Le Grand – Chowchilla 115kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	397	507	127.8	550	138.7	10.9
Bellota – Warnerville 230kV Line (@Warnerville)	L-2 (Moss Landing – Panoche and Coburn – Panoche 230kV Lines)	793	845	106.6	919	115.9	9.4
Bellota – Warnerville 230kV Line (@ Bellota)	L-2 (Moss Landing – Panoche and Coburn – Panoche 230kV Lines)	793	783	98.7	857	108	9.3
Wilson – Borden #1 230kV Line (@ Borden)	B-1 (Panoche 230kV Bus Section 1)	793	1004	126.6	1072	135.1	8.5
Wilson – Borden #1 230kV Line (@ Wilson)	B-1 (Los Banos 230kV Bus Section 1)	851	859	100.9	927	109	8
Wilson – Borden #2 230kV Line (@Borden)	B-1 (Los Banos 230kV Bus Section 1)	793	797	100.5	856	107.9	7.3
Wilson – Borden #2 230kV Line (@Wilson)	B-1 (Panoche 230kV Bus Section 1)	793	788	99.4	846	106.6	7.3
Warnerville – Stanidford #7, or #8 115kV Line	L-2 (Bellota – Melones and Warnerville – Wilson 230kV Lines)	939	1056	112.4	1121	119.4	7
Helm – McCall 230kV Line	B-1 (Sanger Bus Fault)	850	820	96.5	872	102.6	6.2
Herndon – Kearney 230kV Line	L-2 (Wilson – Borden #1 and #2 230kV Lines)	976	1347	138	1394	142.8	4.8
Panoche – Kearney 230kV Line (@Kearney)	L-2 (Wilson – Borden #1 and #2 230kV Lines)	975	1087	111.5	1131	116	4.5
Panoche – Kearney 230kV Line (@Panoche)	L-2 (Wilson – Borden #1 and #2 230kV Lines)	975	1046	107.2	1089	111.7	4.5
Mendota – San Jouquin – Helm 70kV Line (San Joaquin Jct – San Joaquin)	L-2 (Panoche – Kearney and Helm – McCall 230kV Lines)	396	437	110.4	447	112.9	2.5
Caruthers – Kingsburg 70kV Line (Camden – Kingsburg)	B-1 (Kearney 230kV Bus Fault)	398	404	101.4	409	102.8	1.4
Oro Loma – Canal 70kV Line (Oro Loma – Dos Palos)	B-1 (Los Banos 230kV Bus Fault)	282	427	151.4	430	152.5	1.1
Atwater – Merced 115kV Line	L-2 (Wilson – Atwater and El Capitan – Wilson 115kV Lines)	512	747	145.9	753	147	1.1

Over Loaded Component	Contingency	Rating (Amps)	Pre- Project Loading (Amps | %Rating)		Post-Project Loading (Amps | %Rating)		% Change from Pre-Project Loading
Gregg – Ashlan 230kV Line	L-2 (Gregg – Herndon #1 and #2 230kV Line)	850	1137	133.8	1125	132.3	-1.4
McCall – Kingsburg #1 230kV Line	L-2 (Helm – McCall and Gates – McCall 230kV Lines)	600	722	120.4	706	117.6	-2.8
McCall – Kingsburg #1 230kV Line	Kingsburg 115kV Bus Section E	600	661	110.1	639	106.5	-3.6
Gates – McCall 230kV Line (Henrietta – McCall)	L-2 (Panoche – Kearney and Helm – McCall 230kV Lines)	975	1003	102.8	957	98.2	-4.7
Caruthers – Kingsburg 70kV (Camden – Camden Jct)	L-2 (McCall – Kingsburg #1 and #2 115kV Lines)	297	499	167.9	482	162.5	-5.4

7. Reactive Power Deficiency Analysis

The power flow studies of Category "B" and "C" contingencies indicated that the Project did not cause voltage drops of 5% or more from the pre-project levels, or cause the PG&E system to fail to meet applicable voltage criteria.

8. System Fault Duty Study

Short circuit studies were performed to determine the impact of adding the Project to the transmission system. The fault duties were calculated before and after the Project.

8.1 System Protection Study Input Data

The following input data provided by the IC was used in this study:

Combustion Turbine Generators (CTGs): Two CTGs each rated 205 MW.

- Positive Sequence subtransient reactance (X''1) = 0.135
- Negative Sequence subtransient reactance (X''2) = 0.133
- Zero sequence reactance (X''0) = 0.110

The MVA base for the above impedance values is 205 MVA.

Steam Turbine Generators (STGs): One STG rated 373 MW.

- Positive Sequence subtransient reactance (X''1) = 0.214
- Negative Sequence subtransient reactance (X''2) = 0.204
- Zero sequence reactance (X''0) = 0.122

The MVA base for the above impedance values is 373 MVA.

CTG Step-up Transformers: Two, three phase, each 18/238 kV and rated for 220 MVA at 65 degree C temperature rise with 9.0% impedance at 132 MVA base.

STG Step-up Transformers: One, three phase, 18/238 kV and rated for 390 MVA at 65 degree C temperature rise with 9.0% impedance at 234 MVA base.

8.2 Results

Table 7-1 lists the available short circuit duty at the buses electrically adjacent to the Project. This data was used to determine if any equipment would be overstressed by the interconnection of the Project.

Table 7-1: Short circuit study results

Fault Location	Pre-Project		Post-Project			
	3∅	L-G	3∅	% Increase	L-G	% Increase
ARCO 230 KV BUS	8288.71	6062.17	8364.51	0.91%	6096.18	0.56%
GATES 70 KV BUS	12817.2	13326	12841	0.19%	13350.6	0.18%
GATES 115 KV BUS	10390.9	11493.4	10459.1	0.66%	11583.2	0.78%
GATES 230 KV BUS	34466	30384.2	39691.3	15.16%	35870.1	18.06%
GATES 500 KV BUS	26181.8	17326.7	26770.9	2.25%	18214	5.12%
GREGG 230 KV BUS	22659	22610.3	22690.8	0.14%	22625.7	0.07%
HENRIETTA 230 KV BUS	13922.6	11411.1	14267	2.47%	11644.2	2.04%
MCCALL 230 KV BUS B1	21884.9	21759.9	21938	0.24%	21791.1	0.14%
MIDWAY 230 KV BUS D	63118.6	60973.6	63523.4	0.64%	61257.9	0.47%

Gates 230 kV Bus - All breakers are rated 39,500 amps Interrupting Capacity or higher.

Gates 500 kV Bus - All breakers are rated 40,000 amps Interrupting Capacity or higher.

McCall 230 kV Bus - All breakers are rated 12,551 amps Interrupting Capacity or higher.

Midway 230 kV Bus - All breakers are rated 63,000 amps Interrupting Capacity or higher.

9. Substation Evaluation

9.1 Overstressed Breakers

PG&E uses the following policy to allocate breaker replacement responsibility for projects that overstress or increase overstress[4] on existing circuit breakers:

- If a breaker is not overstressed and a project results in an overstressed condition of the breaker.
- If a breaker is already overstressed and a project increases the overstress by 5% or more, or the overstress level exceeds 25%.
- If the overstress level exceeds 25% before the project, and for all other circumstances, PG&E or other generation projects will be responsible for any replacement costs.

Overstressed breakers will be determined by the maximum close-in fault current seen by each breaker which will be performed in the Interconnection System Impact Study (ISIS).

10. Mitigation

Mitigation alternatives have been developed for the Category "A" normal and Category "B" normal contingency overloads identified in Section 6.

The preferred method to mitigate these normal as well as Category "B" emergency overloads is to re-conductor these overloaded lines with larger conductors. The alternative method to mitigate the normal overloads is by generation reduction.

For CAISO Category "C" contingencies (according to WECC reliability criteria), the overloads may be mitigated by load shedding or generation dropping. PG&E or CAISO or both may require new generators to take part in and be responsible for the costs of operating procedures and/or Special Protection Schemes (SPS) for the Category "C" emergency overloads caused by the project. Category "C" overload mitigation will be determined in the Facilities Study.

10.1 Category "A" Normal Overload Mitigation

The power flow study indicates that the Project does not cause any new Category "A" normal overloads. However, if one or more higher Queue position project withdraws from the project Queue, this project could cause new Category "A"

[4] Overstressed Circuit Breaker – The percent of overstress, or level of overstress, is the percent of maximum fault current above the breaker's nameplate rating. For example, a breaker rated at 40,000 amps symmetrical current interrupting a 44,000 amp symmetrical fault is overstressed by 10%.

normal overloads that may not be present pre-project. In this case, additional mitigation cost would be assigned to this project.

10.2 Category "B" Emergency Overload Mitigation

The power flow study indicates that the Project causes three new Category "B" emergency overloads.

Table 10-1 summarizes Category "B" emergency overloads from Table 6-2.2 as well as recommended minimum new conductor sizes and their associated cost estimates for reconductoring.

Table 10-1 Category "B" Emergency Overload Mitigation

Over Loaded Component	Worst Case	Existing Conductor			Post-Project Loading N/E (Amps)	Re-conductor To			Cost Estimates ($)
		Size	Ratings (Amps)			Size	Ratings (Amps)		
			N	E			N	E	
Panoche-Dos Amigos PP 230kV Line (24 miles)	Summer Peak	795 ACSR	742	850	931.2	954 ACSR	831	954	$12.0 m
Bellota – Melones 230kV Line (@Bellota) (23 miles)	Spring Peak	795 ACSR	742	850	914	954 ACSR	831	954	$11.5 m
Chowchilla – Kerckhoff 2 115kV Line (Oakhurst Jct-Sharon T section) (27 miles)	Spring Peak	266.8 AAC	343	397	416	397.5 AAC	440	514	$13.5 m

11. Cost and Construction Schedule Estimates

A non-binding good faith cost estimate for the Project interconnection to the CAISO Controlled Grid is **$46.3 million**, exclusive of ITCC. The cost responsibility breakdown is provided in the sections below. These costs have no associated degree of accuracy and are provided for informational purpose only.

11.1 Interconnection Facilities Costs

Table 10-1 shows the Interconnection Facilities required for the Project to interconnect to the CAISO Controlled Grid.

Table 10-1: Interconnection Facilities Cost Estimates

Substation Work

Provide support on one line position at Gates and general support at	$2,000,000

generation site	
Subtotal Substation Work	**$2,000,000**
Building & Land Work	
Land engineering support and permitting activities	$100,000
Subtotal Building & Land Work	**$100,000**
Total Interconnection Facilities Cost before ITCC	**$2,100,000**

11.2 Network Upgrades Costs

Table 10-2 shows the Network Upgrades required for the Project to be interconnected to the CAISO Controlled Grid.

Table 10-2: Network Upgrades Cost Estimates

Substation Work	
Expand Gates Substation	$3,000,000
Subtotal Substation Work	**$3,000,000**
Transmission Line Work	
Install necessary structure and provide interconnection	$200,000
Reconductor lines (See Section 10 for reconductoring scope and cost estimates)	$37,000,000
Subtotal Transmission Line Work	**$37,200,000**
Plant Work	
Install Special Protection Systems (SPS) for Category "C" emergency overload mitigation	$4,000,000
Subtotal Plant Work	**$4,000,000**
Total Network Upgrades Interconnection Cost	**$44,200,000**

11.3 Tentative Construction Schedule

The non-binding construction schedule to engineer and construct the facilities based on the assumptions outlined in this IFS is approximately 24 to 48 months from the signing of the Large Generator Interconnection Agreement (LGIA) and payment of the estimated Interconnection Facilities and Network Upgrades costs. This schedule reflects only the time PG&E requires to engineer, design, schedule, procure materials, and construct the necessary facilities. This schedule is based upon the assumption that the environmental permitting obtained by The IC is adequate for permitting all PG&E activities.

12. Environmental Evaluation/ Permitting

12.1 CPUC General Order 131-D

Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the California Public Utilities Commission (CPUC) and must comply with CPUC General Order 131-D (Order) on the construction, modification, alteration, or addition of all electric transmission facilities (i.e., lines, substations, etc.). This includes facilities to be constructed by others and deeded to PG&E. The Order exempts PG&E from obtaining a formal permit from the CPUC on facilities over 200 kV provided the planned facilities involve the replacement of existing facilities or supporting structures with equivalent facilities or structures, the minor relocation of existing facilities, the conversion of existing facilities to underground or the placing of new or additional conductors, insulators, or their accessories on or replacement of structures already built. These exemptions do not apply under certain circumstances when significant environmental impacts may be caused by the work. If the project does not qualify for an exemption, PG&E will need to seek

formal approval from the CPUC (i.e., Certificate of Public Convenience and Necessity) taking as much as 18 months or more since the CPUC may decide to conduct its own environmental evaluation (i.e., Negative Declaration or Environmental Impact Report).

For cases where PG&E can claim a valid exemption, PG&E would file an Advice Letter with the CPUC and publish public notice of the proposed construction of the facilities. The noticing process takes about 90 days if no protests are filed, but should be done as early as possible so that a protest does not delay construction. PG&E has no control over the time it takes the CPUC to respond when issues arise. If the protest is granted, PG&E will then need to apply for a formal permit to construct the project (i.e., Certificate of Public Convenience and Necessity).

Facilities built or modified under this procedure must also be designed to include electric and magnetic field (EMF) mitigation measures pursuant to PG&E "EMF Design Guidelines of New Electrical Facilities: Transmission, Substation and Distribution".

Please see Section III, B.1 (f) in General Order 131-D. This document can be found in the CPUC's web page at:

http://www.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/589.htm

12.2 CPUC Section 851

Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the California Public Utilities Commission (CPUC) and must comply with Public Utilities Code Section 851, which among other things requires CPUC approval of leases and licenses to use PG&E property. This includes rights-of-way granted to third parties for interconnection facilities. Obtaining CPUC approval for a Section 851 application can take several months, and requires compliance with the California Environmental Quality Act (CEQA). PG&E recommends that Section 851 issues be identified as early as possible so that the necessary application can be prepared and processed.

13. Standby Power

The IFS did not address any requirements for standby power that the Project may require. The IC should contact their Generation Interconnection Services representative regarding this service.

Note: The IC is urged to contact their Generation Interconnection Services representative promptly regarding standby service in order to ensure its availability for the project's start-up date.

14. Study Updates

This IFS is performed according to the assumptions shown in the Sections titled "Study Assumptions" and "Power Flow Study Base Cases". If these assumptions are changed, an updating study may be required to re-evaluate the project's impact on the CAISO Controlled Grid. The IC would be responsible for paying for any such updating study. Examples of changes that might prompt such a study are:

- Change in interconnection date
- Change in Interconnection Queue position
- Change in Project's MW size beyond the provisions set forth in the LGIP
- Change in interconnection plan
- Withdrawal of a higher queued project from the CAISO queue

15. ISIS Expected Results

The results of the Interconnection System Impact Study (ISIS) are not expected to be significantly different from the results of the IFS.

Appendix A

Interconnection Feasibility

Study Plan: Revision 2

Interconnection Feasibility Study Plan

Generation Interconnection

Federal Power Avenal, LLC

Avenal Energy Project

Revison 2

California ISO
Your Link to Power

January 2, 2008

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Attachment 1 Generation Projects

1. Project Summary

Federal Power Avenal, LLC, an Interconnection Customer (IC), has submitted a completed Interconnection Request (IR) to the California Independent System Operator Corporation (CAISO) for their proposed Avenal Energy Project (Project). The Project is a combined cycle generation project. The maximum net output to the grid will be 600 MW. The proposed commercial operation date of the Project is June 1, 2012. The primary point of interconnection (POI) will be the 230 bus at Pacific Gas and Electric Company's (PG&E) Gates Substation in Fresno County, California. The alternative POI will be Gates – Arco 230 kV Line or Gates – Midway 230 kV Line via looped connection.

2. Interconnection Feasibility Study (IFS) Scope Summary

In accordance with Federal Energy Regulatory Commission's (FERC) Large Generation Interconnection Procedures (LGIP), the IC, CAISO, and PG&E have determined to perform an Interconnection Feasibility Study (IFS). The IFS will:

1. Identify transmission system impacts caused solely by the addition of the Project.

2. Identify the system reinforcements necessary to mitigate the adverse impact of the Project under various system conditions.

3. Preliminarily evaluate the feasibility of the proposed interconnection to the CAISO Controlled Grid.

4. Provide a list of required facilities and a non-binding good faith estimate of cost responsibility and a non-binding good faith estimate of time to construct.

5. Describe what results are expected in the Interconnection System Impact Study (ISIS).

This IFS Study Plan will form the basis for the IFS Agreement (IFSA) by defining the scope, content, assumptions, and terms of reference of the IFSA.

3. Study Fee

CAISO has estimated a study fee of $55,000 for performing the IFS. The final cost to complete the IFS will be based on actual cost. According to the LGIP, a $10,000 deposit will be needed when the IC returns the signed IFSA to CAISO.

CAISO will provide the IC a record of actual costs for performing the IFS. If the actual cost is higher than the collected deposit, CAISO will invoice the IC for the remaining balance. If the actual cost is less than the collected deposit, CAISO will refund the balance to the IC.

4. Schedule

Table 4-1 shows the tentative milestones/schedules associated with the IFS.

Table 4-1: Study Schedule

Task	Milestone Description	Target Date
1	CAISO tender the signed IFSA to the IC	October 16, 2007
2	The IC returns the signed IFSA, study deposit of $10,000, and Attachment A to Appendix 1 technical data to CAISO	+30 CD
3	CAISO issues final IFS report to IC. CAISO extended to 90 days.	+90 CD
4	IFS Results Meeting	+ 10 BD

5. Project and Interconnection Information

Table 5-1 provides general information about the Project.

Table 5-1: Project General Information

Project Location	Kings County, California
PG&E Planning Area	Fresno Division
Number and Type of Generators	2x1 Combined Cycle Generators
Maximum Generator Output	635.6 MW
Generator Auxiliary Load	35.6 MW
Maximum Net Output to Grid	600 MW
Power Factor	0.85 Lag to 0.95 Lead
Step-up Transformer	Two CTG GSU 238/18 kV, each 220 MVA, One STG GSU 238/18 kV, 390 MVA
Description Of Interconnection Configuration	A Single Tie Line to 230 kV Bus at Gates Substation
Connection Voltage	230 kV
Description Of Alternative Interconnection Configuration	Loop into Gates – Arco 230 kV Line or Gates – Midway 230 kV Line
Alternative Connection Voltage	230 kV

Figure 5-1 provides the map for the Project and the transmission facilities in the vicinity. Figure 5-2 shows the single line diagram of the Project.

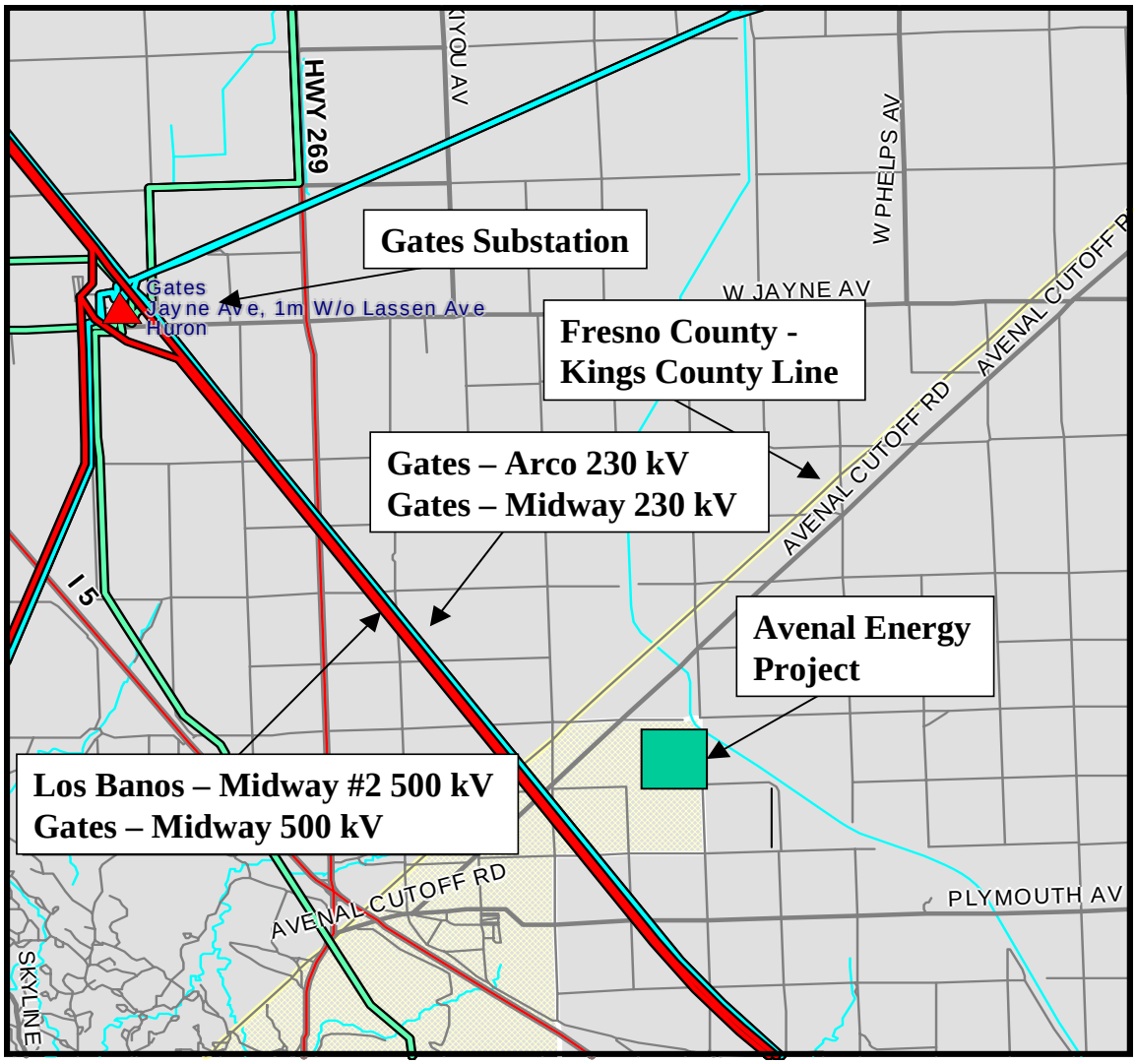

Figure 5-1: Location Map

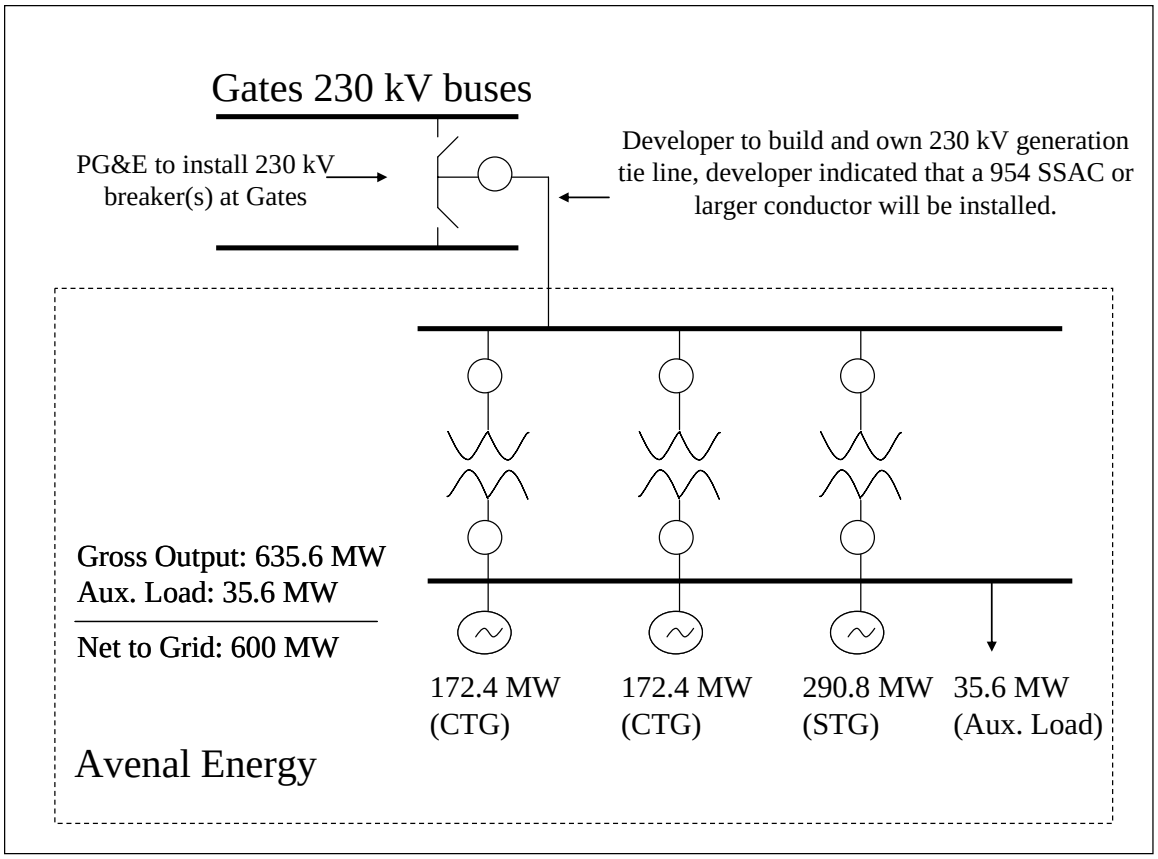

Figure 5-2: Conceptual Single-Line Diagram

6. Study Assumptions

The IFS will be conducted under the following assumptions:

1) The maximum net output of the Project into the CAISO Controlled Grid is 600 MW.

2) The expected Commercial Operation date is June 1, 2012.

3) The IC will engineer, procure, construct, own, and maintain its project facility.

4) The IC will engineer, procure, construct, own, and maintain the generator tie line.

5) The IFS will perform the future year study to take into account all proposed generating facilities located in PG&E's service territory with higher queue positions as listed in the CAISO Generation Queue. Based on September 30, 2007 Generation Queue List, the future year for this study is 2013.

7. Power Flow Study Base Cases

Three power flow base cases will be used to evaluate the feasibility of the proposed interconnection and the transmission system impacts by the interconnection of the Project. While it is impractical to study all combinations of system load and generation levels during all seasons and at all times of the day, these base cases represent extreme loading and generation conditions for the study area.

CAISO and PG&E cannot guarantee that the Project can operate at maximum rated output 24 hours a day, year round, without system impacts, nor can the CAISO or PG&E guarantee that the Project will not have system impacts during the times and seasons other than those studied in the IFS.

The following power flow base cases will be used for the analysis in the IFS:

- **2013 Summer Peak Base Case**

  Power flow analysis will be performed using PG&E's 2013 Summer Peak Full-Loop Base Case (in General Electric Power Flow format). This base case was developed from PG&E's 2007 base case series and has a 1-in-10 year extreme weather load level for the Greater Fresno Area.

- **2013 Spring Peak Base Case**

  Power flow analysis will also be performed using the 2013 Spring Peak Base Case in order to evaluate the potential congestion on transmission facilities under reduced load and increased generation levels during a typical Spring season. Typical Spring season load will be applied in this Spring Peak Base Case. Hydro generation will be modeled in a very high level as typical in the spring season.

- **2013 Summer Off-Peak Base Case**

  Power flow analysis will also be performed using the 2013 Summer Off-Peak Base Case in order to evaluate potential congestion on transmission facilities during the off-peak system condition. The Summer Off-Peak load will be modeled at 50% of summer peak load level in the Greater Fresno areas. The Path 15 flows will be around 5,000 MW in a south-to-north direction. Two units at Helms PGP (620 MW total) will be assumed in pumping mode, and the Madera Unit is generating at 28 MW.

These three base cases will model all approved PG&E transmission reliability projects that will be operational by 2013. These three base cases will also model all proposed generation projects that will be operational by 2013. However, some generation projects that are electrically far from the Project will be either turned off or modeled with reduced generation to balance the loads and resources in the power flow model. The major generation projects included are shown in Attachment 1.

8. Detailed Interconnection Feasibility Study Scope

The IFS will determine the impact of the Project on PG&E's transmission system. The specific studies conducted are outlined below:

8.1 Steady State Power Flow Analysis

Power Flow analysis will be performed using the base case described in Section 7. The base case will be used to simulate the impact of the Project during normal operating conditions, as well as, single (CAISO Categories "B") and selected multiple (CAISO Categories "C") outages. The study will cover the transmission facilities within PG&E's Los Padres and Central Coast Areas.

The single (CAISO Category "B") and selected multiple (CAISO Category "C") contingencies include the following outages:

8.1.1 CAISO Category "B"

- All single generator outages within the study area.
- All single (60 - 230 kV) transmission circuit outages within the study area.
- All single transformer outages within the study area.
- Selected overlapping single generator and transmission circuit outages for the transmission lines and generators within the study area.

8.1.2 CAISO Category "C"

- Selected bus (60-230 kV) outages within the study area.
- Selected outages caused by selected breaker failures (excluding bus tie and sectionalizing breakers) at the same above bus section.
- Selected combination of any two-generator/transmission line/transformer outages (except ones included above in Category "B") within the study area.
- Selected outages of double circuit tower lines (60-230 kV) within the study area.

8.2 Short Circuit Analysis

Short circuit studies will be performed to determine the maximum fault currents on various buses in the vicinity of the Project. The IFS will assess

the impact of increased fault duty resulting from the added generation. Equipment that may become overstressed as a result of the added generation will be identified.

8.3 Reactive Power Deficiency Analysis

With the proposed project included in the system model, CAISO Category "B" and "C" contingencies will be analyzed to identify any reactive power deficiency:

- If they result in voltage drops of 5% or more from the pre-project levels, or
- If they fail to meet applicable voltage criteria.

A post-transient power flow analysis will be performed, if deemed necessary, after considering the network topology or power transfer paths involved when a significant amount of power transfer occurs.

8.4 Substation Evaluation

The substation evaluation will identify any existing equipment requiring upgrades to mitigate problems caused by overstress or overload by the interconnection of the Project, if any.

8.5 Transmission Line Evaluation

PG&E's transmission line evaluation will identify any existing equipment requiring upgrades to mitigate overload or overstress by the interconnection of the Project, if any.

8.6 Land Evaluation

For the IFS, PG&E's Corporate Real Estate Department will not perform an evaluation to determine if any new land rights are necessary to upgrade PG&E facilities that may be impacted by the interconnection of the Project, such as constructing the new generator tie line and reinforcing of existing PG&E transmission lines, if required.

8.7 Cost Estimates and Time to Construct/Schedule Estimates

A non-binding good faith estimate of cost responsibility and a non-binding time to construct will be provided.

9. Summary of Expected Results of the IFS

As discussed in the Scoping Meeting, the results of the IFS may identify some overloaded transmission lines in PG&E portion of the CAISO Controlled Grid.

10. Environmental Evaluation/ Permitting

10.1 CPUC General Order 131-D

Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the California Public Utilities Commission (CPUC); and must comply with CPUC General Order 131-D (Order) on the construction, modification, alteration, or addition of all electric transmission facilities (i.e., lines, substations, etc.). This includes facilities to be constructed by others and deeded to PG&E. The Order exempts PG&E from obtaining a formal permit from the CPUC on facilities over 200 kV provided the planned facilities involve the replacement of existing facilities or supporting structures with equivalent facilities or structures, the minor relocation of existing facilities, the conversion of existing facilities to underground or the placing of new or additional conductors, insulators, or their accessories on or replacement of structures already built. These exemptions do not apply under certain circumstances when significant environmental impacts may be caused by the work. If the Project does not qualify for an exemption, PG&E will need to seek formal approval from the CPUC (i.e., Certificate of Public Convenience and Necessity) taking as much as 18 months or more since the CPUC may decide to conduct its own environmental evaluation (i.e., Negative Declaration or Environmental Impact Report).

For cases where PG&E can claim a valid exemption, PG&E would file an Advice Letter with the CPUC and publish public notice of the proposed construction of the facilities. The noticing process takes about 90 days if no protests are filed, but should be done as early as possible so that a protest does not delay construction. PG&E has no control over the time it takes the CPUC to respond when issues arise. If the protest is granted, PG&E will then need to apply for a formal permit to construct the Project (i.e., Certificate of Public Convenience and Necessity).

Facilities built or modified under this procedure must also be designed to include electric and magnetic field (EMF) mitigation measures pursuant to PG&E "EMF Design Guidelines of New Electrical Facilities: Transmission, Substation and Distribution".

Please see Section III, B.1 (f) in General Order 131-D. This document can be found in the CPUC's web page at:

http://www.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/589.htm

10.2 CPUC Section 851

Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the California Public Utilities Commission (CPUC) and must comply with Public Utilities Code Section 851, which among other things requires CPUC approval of leases and licenses to use PG&E property. This includes rights-of-way granted to third parties for interconnection facilities. Obtaining

CPUC approval for a Section 851 application can take several months, and requires compliance with the California Environmental Quality Act (CEQA). PG&E recommends that Section 851 issues be identified as early as possible so that the necessary application can be prepared and processed.

11. Stand-by Power

The IFS will not address any requirements for stand-by power that the Project may require. The IC should contact their Generation Interconnection Services representative regarding this service.

Note: The IC is urged to contact their Generation Interconnection Services representative promptly regarding stand-by service in order to ensure its availability for the Project start-up date.

12. Re-study

The IFS is performed in according to the assumptions shown in the Sections titled "Study Assumptions" and "Power Flow Study Base Cases". In the event that these assumptions are changed, a re-study according to the LGIP may be required to re-evaluate the Project's impact on PG&E's transmission grid. The IC would be responsible for paying for any such updating re-study.

ATTACHMENT 1 – GENERATION PROJECTS

PG&E Generation Projects					
Project ID #	Project Name	Nearest Facility	Capacity (MW)	Latest Expected On-Line Date	Modeled In Study Cases
1	Confidential	Russell	92	2007	Yes

Non-PG&E Generation Projects to Be Modeled in Base Case per On-line Year					
Project ID #	Project Name	Nearest Facility	Capacity (MW)	Latest Expected On-Line Date	Modeled In Study Cases
TID	Confidential	Walnut (TID)	250	2007	Yes
SVP	Confidential	SSS (SVP)	320	2008	Yes

PG&E Generation Projects - ISO Generation Interconnection Queue					
Project ID #	Project Name	Nearest Facility	Capacity (MW)	Latest Expected On-Line Date	Modeled In Study Cases
1	Confidential	Contra Costa	590	2009	Yes
2	Confidential	Tesla	1156	2010	Yes
3	Confidential	Morro Bay	1200	2008	Yes
P0302	Confidential	Cabrillo	120	2008	Yes
P0304	Confidential	New Birds Landing SW STA	38	2011	Yes
P0401	Confidential	Birds' Landing Switchyard	150	2008	Yes
P0402	Confidential	Potrero	145.1	2008	Yes

PG&E Generation Projects - ISO Generation Interconnection Queue					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
P0403	Confidential	Collector Station at Geysers #17 & Fulton Line	201	2009	Yes
P0404	Confidential	San Francisco Airport	48.7	2008	Yes
P0409	Confidential	Tesla	74.9	2010	Yes
P0411	Confidential	Humboldt Power Plant Substation	146.4	2008	Yes
P0412	Confidential	Birds' Landing Switchyard	200	2008	Yes
P0413	Confidential	East Shore	118	2007	Yes
P0418	Confidential	McCall 115 kV Bus	300	2013	Yes
P0424	Confidential	East Shore	361	2010	Yes
P0429	Confidential	Herndon-Kearney 230 kV Line	200	2008	Yes
P0435	Confidential	Panoche Substation	401	2009	Yes
P0504	Confidential	Panoche Substation	120	2009	Yes
P0506	Confidential	Cottonwood-Vaca Dixon 230 kV lines	715	2010	Yes
P0513	Confidential	Kern Oil Substation (115 kV)	94	2009	Yes
P0526	Confidential	Eastshore 230 kV Bus	245	2008	Yes
P0528L	Confidential	Pit 3-Round Mountain 230 kV	102	2007	Yes
P0529	Confidential	Le Grand- Chowchilla 115 kV	10.5	2007	Yes
P0530	Confidential	Merced #1 70 kV	10.5	2007	Yes
P0532L	Confidential	PG&E Geysers #17 Fulton 230 kV Line	55	2007	Yes
P0602L	Confidential	Diablo Canyon	37	2006	Yes

PG&E Generation Projects - ISO Generation Interconnection Queue					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
P0603L	Confidential	Diablo Canyon	45	2006	Yes
P0605L	Confidential	Coburn 230 kV Bus	210	2008	Yes
P0609L	Confidential	Lambie-Contra Costa 230 kV	128	2011	Yes
P0610L	Confidential	Chevron 70 kV Tap	20	2009	Yes
P0611L	Confidential	Birds' Landing Switchyard	30	2009	Yes
P0615L	Confidential	Mc Call 230 kV Bus	565/600	2010	Yes
P0616L	Confidential	Mesa-Divide #1 & #2 115 kV Lines	105	2009	Yes
P0617L	Confidential	Oakland C Substation 115 kV Bus	300	2010	Yes
P0701L	Confidential	Morro Bay – Midway 230 kV Line	210	2010	Yes
P0702L	Confidential	Vaca – Tesla 500 kV Line	500	2011	Yes
P0703L	Confidential	Tesla – Bellota 230 kV Line	508	2011	Yes
P0704L	Confidential	Bahia-Moraga 230 kV Line	200	2011	Yes
P0706	Confidential	Geysers #3 – Cloverdale 115 kV Line	35	2010	Yes
P0708	Confidential	Geysers – Fulton 230 kV Line	50	2011	Yes
P0709	Confidential	Loop 230kV Lines near Carrizo Plain Sub	190	2011	Yes
P0710	Confidential	Borden Substation 230 kV Bus	508	2011	Yes
P0711	Confidential	60kV bus at Posdef QF Facility	50	2009	Yes
Q0208	Confidential	Tracy – Herdlyn 69kV Line	2	2008	Yes
Q0211	Confidential	230 kV Bus at Caribou Substation	201	2008	Yes

PG&E Generation Projects - ISO Generation Interconnection Queue					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
Q0212	Confidential	Bridgeville Substations	50	2010	Yes
Q0222	Confidential	Birds Landing Substation	100.5	2010	Yes
Q0227	Confidential	Fulton – Ignacio 230kV Line #2	175.5	2010	Yes
Q0235	Confidential	Tesla-Tracy #1 230 kV Line	630	2011	Yes
Q0236	Confidential	Tesla Substation 230 kV Bus	630	2011	Yes
Q0238	Confidential	Temblor-San Luis Obispo 115 kV Line	45	2008	Yes
Q0239	Confidential	Morro Bay-Midway 230 kV Line	250	2010	Yes
Q0242	Confidential	Morro Bay-Midway 230 kV Line	390	2012	Yes
Q0247	Confidential	Borden Substation 230 kv Bus	67	2011	Yes
Q0248	Confidential	Tesla-Bellota 230 kV Line	67	2011	Yes
Q0249	Confidential	Moss Landing-Salinas-Soledad 115 kV #1 & #2	200	2010	Yes
Q0250	Confidential	Redbud-Cortina 115 kV Line	200	2009	Yes
Q0253	Confidential	Cabrillo Substation 115 kV Bus	40	2011	Yes

Appendix B

Contingency Lists for Outages

Category B Contingencies

```
# Q254 2015 sprpk category b contingency list
# Yosemite and Fresno Divisions Zones 313 and 314
#
  # 2013 sprpk category b contingency list
  # Yosemite Zone 313
  #
  #
  # (1)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
 0
  #
  #
  # (2)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30670 30765  "1 "    0     # line from  WESTLEY  230.00  BRKR to BRKR  LOSBANOS 230.00
 0
  #
  #
  # (3)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30750 30790  "1 "    0     # line from  MOSSLND2 230.00  BRKR to BRKR  PANOCHE  230.00
 0
  #
  #
  # (4)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30760 30790  "1 "    0     # line from  COBURN   230.00  BRKR to BRKR  PANOCHE  230.00
 0
  #
  #
  # (5)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30765 30790  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 0
  #
  #
  # (6)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 0
  #
  #
  # (7)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30765 38615  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  DS AMIGO 230.00
 0
  #
  #
  # (8)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30765 38625  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 0
  #
  #
  # (9)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30765 38625  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 0
  #
  #
  # (10)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  30790 30793  "1 "    0     # line from  PANOCHE  230.00  BRKR to (3)   PANO_EC  230.00
 2  30793 34326  "1 "    0     # TRAN from  PANO_EC  230.00   (3) to (1)   PANO_BS1  13.80
 2  30793 34327  "1 "    0     # TRAN from  PANO_EC  230.00   (3) to (1)   PANO_BS2  13.80
 4  34326     0  "ss"    0     # LOAD-DROP    PANO_BS1  13.80  LOAD==4.50(2.49)
```

```
4  34327     0  "ss"    0     # LOAD-DROP    PANO_BS2  13.80  LOAD==4.50(2.49)
3  34326     0  "1 "    0     # GEN-DROP    PANO_BS1  13.80  GEN==102.50(20.25)
3  34326     0  "2 "    0     # GEN-DROP    PANO_BS1  13.80  GEN==102.50(20.25)
3  34327     0  "3 "    0     # GEN-DROP    PANO_BS2  13.80  GEN==102.50(20.25)
3  34327     0  "4 "    0     # GEN-DROP    PANO_BS2  13.80  GEN==102.50(20.25)
0
 #
 #
 # (11)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
0
 #
 #
 # (12)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
0
 #
 #
 # (13)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
0
 #
 #
 # (14)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
0
 #
 #
 # (15)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
0
 #
 #
 # (16)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
0
 #
 #
 # (17)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30805 30806  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  Q196     230.00
0
 #
 #
 # (18)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30805 30806  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  Q196     230.00
0
 #
 #
 # (19)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
0
 #
 #
 # (20)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
```

```
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
0
 #
 #
 # (21)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34017 34010  "1 "    0     # line from  CRWS LDG  60.00   (1) to (3)   CRWS LDJ  60.00
1  34010 34006  "1 "    0     # line from  CRWS LDJ  60.00   (3) to BRKR  PATTERSN  60.00
1  34010 34012  "1 "    0     # line from  CRWS LDJ  60.00   (3) to (2)   GUSTN JT  60.00
1  34012 34014  "1 "    0     # line from  GUSTN JT  60.00   (2) to BRKR  NEWMAN    60.00
4  34017     0  "1 "    0     # LOAD-DROP    CRWS LDG  60.00  LOAD==3.73(0.17)
1  34016 34017  "1 "    1      # Switches in Crows Landing SW 57 to transfer load
4  34017     0  "**"    1      # Restore Load at Crows Landing
0
 #
 #
 # (22)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34100 34101  "1 "    0     # line from  CHWCHLLA 115.00  BRKR to (3)   CERTAN T 115.00
1  34101 34116  "1 "    0     # line from  CERTAN T 115.00   (3) to BRKR  LE GRAND 115.00
1  34101 34107  "1 "    0     # line from  CERTAN T 115.00   (3) to (2)   CERTANJ2 115.00
1  34107 34103  "1 "    0     # line from  CERTANJ2 115.00   (2) to (3)   CHWCGNJT 115.00
1  34103 34102  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (1)   CERTTEED 115.00
1  34103 34109  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (3)   CHWCGN   115.00
1  34109 34111  "1 "    0     # line from  CHWCGN   115.00   (3) to (2)   CHWCHLA2 115.00
2  34109 34301  "1 "    0     # TRAN from  CHWCGN   115.00   (3) to (1)   CHOWCOGN  13.80
2  34111 34305  "1 "    0     # TRAN from  CHWCHLA2 115.00   (2) to (1)   CHWCHLA2  13.80
4  34102     0  "1 "    0     # LOAD-DROP    CERTTEED 115.00  LOAD==9.94(6.94)
4  34305     0  "ss"    0     # LOAD-DROP    CHWCHLA2  13.80  LOAD==2.00(1.11)
3  34301     0  "1 "    0     # GEN-DROP    CHOWCOGN  13.80  GEN==50.00(4.33)
3  34305     0  "1 "    0     # GEN-DROP    CHWCHLA2  13.80  GEN==12.50(7.30)
0
 #
 #
 # (23)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34104 34106  "1 "    0     # line from  ATWATER  115.00  BRKR to (2)   CASTLE   115.00
1  34106 34138  "1 "    0     # line from  CASTLE   115.00   (2) to BRKR  EL CAPTN 115.00
0
 #
 #
 # (24)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34104 34108  "1 "    0     # line from  ATWATER  115.00  BRKR to (3)   CRESEY T 115.00
1  34108 34110  "1 "    0     # line from  CRESEY T 115.00  BRKR to (1)   ATWATR J 115.00
1  34108 34114  "1 "    0     # line from  CRESEY T 115.00   (3) to (3)   JRWD GEN 115.00
1  34114 34124  "1 "    0     # line from  JRWD GEN 115.00   (3) to (2)   JR WOOD  115.00
2  34114 34332  "1 "    0     # TRAN from  JRWD GEN 115.00   (3) to (1)   JRWCOGEN   9.11
1  34124 34140  "1 "    0     # line from  JR WOOD  115.00   (2) to (1)   CRESSEY  115.00
4  34124     0  "1 "    0     # LOAD-DROP    JR WOOD  115.00  LOAD==11.70(10.32)
4  34140     0  "1 "    0     # LOAD-DROP    CRESSEY  115.00  LOAD==19.02(3.86)
3  34332     0  "1 "    0     # GEN-DROP    JRWCOGEN   9.11  GEN==3.80(5.40)
0
 #
 #
 # (25)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34105 34100  "1 "    0     # line from  CERTANJ1 115.00   (2) to BRKR  CHWCHLLA 115.00
1  34105 34121  "1 "    0     # line from  CERTANJ1 115.00   (2) to (3)   SHARON T 115.00
1  34121 34120  "1 "    0     # line from  SHARON T 115.00   (3) to (1)   SHARON   115.00
1  34121 34128  "1 "    0     # line from  SHARON T 115.00   (3) to (3)   OAKH_JCT 115.00
1  34128 34126  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (2)   CORSGOLD 115.00
1  34128 34123  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (2)   K1-JCT   115.00
1  34126 34122  "1 "    0     # line from  CORSGOLD 115.00   (2) to (1)   OAKHURST 115.00
1  34123 34358  "2 "    0     # line from  K1-JCT   115.00   (2) to BRKR  KERCKHF2 115.00
4  34120     0  "1 "    0     # LOAD-DROP    SHARON   115.00  LOAD==7.10(4.96)
4  34126     0  "1 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==2.21(0.45)
4  34126     0  "2 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==26.19(5.32)
4  34122     0  "1 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==11.68(2.37)
4  34122     0  "2 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==15.01(3.05)
```

```
 0
  #
  #
  # (26)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34108 34110  "1 "    0     # line from  CRESEY T 115.00  BRKR to (3)   ATWATR J 115.00
 1  34110 34130  "1 "    0     # line from  ATWATR J 115.00   (3) to (2)   LIVNGSTN 115.00
 1  34110 34144  "1 "    0     # line from  ATWATR J 115.00   (3) to BRKR  MERCED   115.00
 1  34130 34132  "1 "    0     # line from  LIVNGSTN 115.00   (2) to (1)   GALLO    115.00
 4  34130     0  "3 "    0     # LOAD-DROP    LIVNGSTN 115.00  LOAD==24.58(5.00)
 4  34132     0  "1 "    0     # LOAD-DROP    GALLO    115.00  LOAD==4.30(3.68)
 0
  #
  #
  # (27)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34112 34116  "1 "    0     # line from  EXCHEQUR 115.00  BRKR to BRKR  LE GRAND 115.00
 3  34306     0  "1 "    0      # Exchequer Unit will trip for this outage
 4  34228     0  "**"    0      # Mariposa Loads will drop if bus is below 64 kV, this is
anticipate
 0
  #
  #
  # (28)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34116 34134  "1 "    0     # line from  LE GRAND 115.00  BRKR to BRKR  WILSON A 115.00
 0
  #
  #
  # (29)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34116 34154  "1 "    0     # line from  LE GRAND 115.00  BRKR to BRKR  DAIRYLND 115.00
 0
  #
  #
  # (30)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34118 34136  "1 "    0     # line from  LE GRNDJ 115.00   (2) to BRKR  WILSON B 115.00
 1  34118 34168  "1 "    0     # line from  LE GRNDJ 115.00   (2) to (2)   EL NIDO  115.00
 1  34168 34162  "1 "    0     # line from  EL NIDO  115.00   (2) to BRKR  ORO LOMA 115.00
 4  34168     0  "1 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==12.49(2.54)
 4  34168     0  "2 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==15.00(3.05)
 0
  #
  #
  # (31)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34134 34104  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  ATWATER  115.00
 0
  #
  #
  # (32)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34134 34136  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  WILSON B 115.00
 0
  #
  #
  # (33)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34134 34144  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  MERCED   115.00
 0
  #
  #
  # (34)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34136 34138  "1 "    0     # line from  WILSON B 115.00  BRKR to BRKR  EL CAPTN 115.00
 0
  #
  #
  # (35)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
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```
1  34136 34144  "2 "    0     # line from  WILSON B 115.00  BRKR to BRKR  MERCED   115.00
0
 #
 #
 # (36)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34141 34148  "1 "    0     # line from  PAN2_TAP 115.00   (2) to (2)   CHENY    115.00
2  34141 34142  "1 "    0     # TRAN from  PAN2_TAP 115.00   (2) to (1)   WHD_PAN2  13.80
1  34148 34149  "1 "    0     # line from  CHENY    115.00   (2) to (3)   CHENYT   115.00
1  34149 34158  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  PANOCHE  115.00
1  34149 34354  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  SCHINDLR 115.00
4  34148     0  "1 "    0     # LOAD-DROP    CHENY    115.00  LOAD==13.12(2.66)
3  34142     0  "1 "    0     # GEN-DROP    WHD_PAN2  13.80  GEN==49.00(4.03)
0
 #
 #
 # (37)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34150 34154  "1 "    0     # line from  NEWHALL  115.00   (2) to BRKR  DAIRYLND 115.00
1  34150 34178  "1 "    0     # line from  NEWHALL  115.00   (2) to (3)   MADERAPR 115.00
1  34178 34156  "1 "    0     # line from  MADERAPR 115.00   (3) to BRKR  MENDOTA  115.00
2  34178 34179  "1 "    0     # TRAN from  MADERAPR 115.00   (3) to (1)   MADERA_G  13.80
4  34150     0  "2 "    0     # LOAD-DROP    NEWHALL  115.00  LOAD==8.55(1.73)
4  34150     0  "3 "    0     # LOAD-DROP    NEWHALL  115.00  LOAD==10.62(2.16)
4  34179     0  "ss"    0     # LOAD-DROP    MADERA_G  13.80  LOAD==3.60(0.85)
3  34179     0  "1 "    0     # GEN-DROP    MADERA_G  13.80  GEN==28.60(6.34)
0
 #
 #
 # (38)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34157 34156  "1 "    0     # line from  PANOCHET 115.00   (2) to BRKR  MENDOTA  115.00
1  34157 34158  "1 "    0     # line from  PANOCHET 115.00   (2) to BRKR  PANOCHE  115.00
3  34186     0  "1 "    0     # DG_PAN Unit trips for Panoche - Mendota 115 kV outage
0
 #
 #
 # (39)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34158 34189  "1 "    0     # line from  PANOCHE  115.00  BRKR to (3)   STARWOOD 115.00
2  34189 34328  "1 "    0     # TRAN from  STARWOOD 115.00   (3) to (1)   STARGT1   13.80
2  34189 34329  "1 "    0     # TRAN from  STARWOOD 115.00   (3) to (1)   STARGT2   13.80
4  34328     0  "ss"    0     # LOAD-DROP    STARGT1   13.80  LOAD==1.00(0.55)
4  34329     0  "ss"    0     # LOAD-DROP    STARGT2   13.80  LOAD==1.00(0.55)
3  34328     0  "1 "    0     # GEN-DROP    STARGT1   13.80  GEN==60.94(9.59)
3  34329     0  "2 "    0     # GEN-DROP    STARGT2   13.80  GEN==60.94(9.59)
0
 #
 #
 # (40)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34158 34350  "1 "    0     # line from  PANOCHE  115.00  BRKR to (2)   KAMM     115.00
1  34350 34352  "1 "    0     # line from  KAMM     115.00   (2) to (2)   CANTUA   115.00
1  34352 34432  "1 "    0     # line from  CANTUA   115.00   (2) to (2)   WESTLNDS 115.00
1  34432 34354  "1 "    0     # line from  WESTLNDS 115.00   (2) to BRKR  SCHINDLR 115.00
4  34350     0  "1 "    0     # LOAD-DROP    KAMM     115.00  LOAD==3.85(1.75)
4  34352     0  "1 "    0     # LOAD-DROP    CANTUA   115.00  LOAD==16.79(3.41)
4  34432     0  "16"    0     # LOAD-DROP    WESTLNDS 115.00  LOAD==0.94(0.23)
4  34432     0  "18"    0     # LOAD-DROP    WESTLNDS 115.00  LOAD==1.21(0.32)
0
 #
 #
 # (41)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34159 34158  "1 "    0     # line from  PANOCHEJ 115.00   (3) to BRKR  PANOCHE  115.00
1  34159 34160  "1 "    0     # line from  PANOCHEJ 115.00   (3) to (2)   HAMMONDS 115.00
1  34159 34180  "1 "    0     # line from  PANOCHEJ 115.00   (3) to (3)   OXFRDJCT 115.00
1  34160 34161  "1 "    0     # line from  HAMMONDS 115.00   (2) to (3)   DFSTP    115.00
1  34161 34162  "1 "    0     # line from  DFSTP    115.00   (3) to BRKR  ORO LOMA 115.00
1  34161 34164  "1 "    0     # line from  DFSTP    115.00   (3) to (1)   DFS      115.00
1  34180 34166  "1 "    0     # line from  OXFRDJCT 115.00   (3) to (1)   OXFORD   115.00
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1  34180 34181  "1 "    0     # line from  OXFRDJCT 115.00   (3) to (3)   WSTLDJCT 115.00
1  34181 34182  "1 "    0     # line from  WSTLDJCT 115.00   (3) to (1)   WSTLD1RA 115.00
1  34181 34183  "1 "    0     # line from  WSTLDJCT 115.00   (3) to (3)   LUISJCT  115.00
1  34183 34163  "1 "    0     # line from  LUISJCT  115.00   (3) to (1)   LUIS_#3  115.00
1  34183 34165  "1 "    0     # line from  LUISJCT  115.00   (3) to (1)   LUIS_#5  115.00
4  34160     0  "1 "    0     # LOAD-DROP    HAMMONDS 115.00  LOAD==10.00(2.03)
4  34164     0  "1 "    0     # LOAD-DROP    DFS      115.00  LOAD==1.37(1.06)
4  34166     0  "1 "    0     # LOAD-DROP    OXFORD   115.00  LOAD==3.87(1.76)
4  34182     0  "1 "    0     # LOAD-DROP    WSTLD1RA 115.00  LOAD==2.98(0.71)
4  34163     0  "1 "    0     # LOAD-DROP    LUIS_#3  115.00  LOAD==3.30(0.78)
4  34165     0  "1 "    0     # LOAD-DROP    LUIS_#5  115.00  LOAD==3.40(0.81)
0
 #
 #
 # (42)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34172 34170  "1 "    0     # line from  WESTLAND  70.00   (2) to (1)   WESIX     70.00
1  34172 34271  "1 "    0     # line from  WESTLAND  70.00   (2) to (3)   WSTLDJCT  70.00
1  34271 34269  "1 "    0     # line from  WSTLDJCT  70.00   (3) to (3)   BIOMSJCT  70.00
1  34271 34469  "1 "    0     # line from  WSTLDJCT  70.00   (3) to (3)   GFFNJCT   70.00
1  34269 34268  "1 "    0     # line from  BIOMSJCT  70.00   (3) to BRKR  MENDOTA   70.00
1  34269 34270  "1 "    0     # line from  BIOMSJCT  70.00   (3) to (2)   BIOMASS   70.00
2  34270 34334  "1 "    0     # TRAN from  BIOMASS   70.00   (2) to (1)   BIO PWR    9.11
1  34469 34470  "1 "    0     # line from  GFFNJCT   70.00   (3) to (1)   GIFFEN    70.00
1  34469 34471  "1 "    0     # line from  GFFNJCT   70.00   (3) to (3)   SNJQJCT   70.00
1  34471 34472  "1 "    0     # line from  SNJQJCT   70.00   (3) to BRKR  SAN JOQN  70.00
1  34471 34474  "1 "    0     # line from  SNJQJCT   70.00   (3) to BRKR  HELM      70.00
4  34172     0  "1 "    0     # LOAD-DROP    WESTLAND  70.00  LOAD==3.20(0.76)
4  34170     0  "1 "    0     # LOAD-DROP    WESIX     70.00  LOAD==1.60(0.38)
4  34470     0  "1 "    0     # LOAD-DROP    GIFFEN    70.00  LOAD==9.59(1.95)
3  34334     0  "1 "    0     # GEN-DROP    BIO PWR    9.11  GEN==21.80(10.99)
1  34472 34473  "1 "    1      # Switches in San Joaquin CB22 to transfer load
4  34472     0  "**"    1      # Restore Load at San Joaquin
0
 #
 #
 # (43)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34200 34218  "1 "    0     # line from  ORO LOMA  70.00  BRKR to (2)   DOS PALS  70.00
1  34218 34216  "1 "    0     # line from  DOS PALS  70.00   (2) to BRKR  SNTA RTA  70.00
4  34218     0  "1 "    0     # LOAD-DROP    DOS PALS  70.00  LOAD==10.29(2.09)
0
 #
 #
 # (44)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34200 34222  "1 "    0     # line from  ORO LOMA  70.00  BRKR to (3)   MRCYSPRS  70.00
1  34222 34220  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ORTIGA    70.00
1  34222 34224  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ARBURUA   70.00
1  34220 34206  "1 "    0     # line from  ORTIGA    70.00   (2) to BRKR  CANAL     70.00
1  34224 34272  "1 "    0     # line from  ARBURUA   70.00   (2) to (2)   WRGHT PP  70.00
1  34272 34214  "1 "    0     # line from  WRGHT PP  70.00   (2) to BRKR  LOS BANS  70.00
4  34220     0  "1 "    0     # LOAD-DROP    ORTIGA    70.00  LOAD==6.88(1.40)
4  34224     0  "1 "    0     # LOAD-DROP    ARBURUA   70.00  LOAD==3.77(1.83)
4  34272     0  "1 "    0     # LOAD-DROP    WRGHT PP  70.00  LOAD==9.50(1.93)
0
 #
 #
 # (45)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34200 34234  "1 "    0     # line from  ORO LOMA  70.00  BRKR to (2)   POSO J1   70.00
1  34234 34266  "1 "    0     # line from  POSO J1   70.00   (2) to (2)   FIREBAGH  70.00
1  34266 34267  "1 "    0     # line from  FIREBAGH  70.00   (2) to (2)   TOMATAK   70.00
1  34267 34268  "1 "    0     # line from  TOMATAK   70.00   (2) to BRKR  MENDOTA   70.00
4  34266     0  "1 "    0     # LOAD-DROP    FIREBAGH  70.00  LOAD==11.13(2.26)
4  34267     0  "1 "    0     # LOAD-DROP    TOMATAK   70.00  LOAD==6.40(4.97)
0
 #
 #
 # (46)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
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1  34202 34203  "1 "    0     # line from  MERCED    70.00  BRKR to (3)   ELNIDOTP  70.00
1  34203 34205  "1 "    0     # line from  ELNIDOTP  70.00   (3) to (2)   ELNIDO    70.00
1  34203 34236  "1 "    0     # line from  ELNIDOTP  70.00   (3) to (1)   POSO J2   70.00
2  34205 34330  "1 "    0     # TRAN from  ELNIDO    70.00   (2) to (1)   ELNIDO    13.80
4  34330     0  "ss"    0     # LOAD-DROP    ELNIDO    13.80  LOAD==2.00(1.11)
3  34330     0  "1 "    0     # GEN-DROP    ELNIDO    13.80  GEN==12.50(5.69)
0
 #
 #
 # (47)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34202 34230  "1 "    0     # line from  MERCED    70.00  BRKR to BRKR  MRCDFLLS  70.00
0
 #
 #
 # (48)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34204 34212  "1 "    0     # line from  LIVNGSTN  70.00   (1) to (3)   LVNGSTNT  70.00
1  34212 34206  "1 "    0     # line from  LVNGSTNT  70.00   (3) to BRKR  CANAL     70.00
1  34212 34210  "1 "    0     # line from  LVNGSTNT  70.00   (3) to (2)   SNTA NLA  70.00
1  34210 34208  "1 "    0     # line from  SNTA NLA  70.00   (2) to (2)   CHEVPIPE  70.00
1  34208 34214  "1 "    0     # line from  CHEVPIPE  70.00   (2) to BRKR  LOS BANS  70.00
4  34204     0  "2 "    0     # LOAD-DROP    LIVNGSTN  70.00  LOAD==5.51(1.12)
4  34210     0  "1 "    0     # LOAD-DROP    SNTA NLA  70.00  LOAD==6.75(1.37)
4  34210     0  "2 "    0     # LOAD-DROP    SNTA NLA  70.00  LOAD==9.50(1.93)
4  34208     0  "1 "    0     # LOAD-DROP    CHEVPIPE  70.00  LOAD==0.63(0.42)
0
 #
 #
 # (49)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34206 34216  "1 "    0     # line from  CANAL     70.00  BRKR to BRKR  SNTA RTA  70.00
0
 #
 #
 # (50)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34214 34278  "1 "    0     # line from  LOS BANS  70.00  BRKR to (2)   PCHCO PP  70.00
1  34278 34280  "1 "    0     # line from  PCHCO PP  70.00   (2) to (2)   INTL TUR  70.00
2  34280 34342  "1 "    0     # TRAN from  INTL TUR  70.00   (2) to (1)   INT.TURB   9.11
4  34278     0  "1 "    0     # LOAD-DROP    PCHCO PP  70.00  LOAD==18.00(4.10)
3  34342     0  "1 "    0     # GEN-DROP    INT.TURB   9.11  GEN==1.10(0.00)
0
 #
 #
 # (51)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34214 34282  "1 "    0     # line from  LOS BANS  70.00  BRKR to (2)   ONLL PMP  69.00
2  34282 34316  "1 "    0     # TRAN from  ONLL PMP  69.00   (2) to (1)   ONEILPMP   9.11
4  34282     0  "1 "    0     # LOAD-DROP    ONLL PMP  69.00  LOAD==6.00(1.20)
3  34316     0  "1 "    0     # GEN-DROP    ONEILPMP   9.11  GEN==0.50(0.00)
0
 #
 #
 # (52)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34228 34232  "1 "    0     # line from  MARIPOS2  70.00   (1) to BRKR  EXCHEQUR  70.00
4  34228     0  "1 "    0     # LOAD-DROP    MARIPOS2  70.00  LOAD==9.01(1.83)
4  34228     0  "2 "    0     # LOAD-DROP    MARIPOS2  70.00  LOAD==9.37(1.90)
1  34228 34244  "1 "    1      # Switches in Mariposa SW 39 to transfer load
4  34228     0  "**"    1      # Restore Load at Mariposa
0
 #
 #
 # (53)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34232 34242  "1 "    0     # line from  EXCHEQUR  70.00  BRKR to (2)   BER VLLY  70.00
1  34242 34244  "1 "    0     # line from  BER VLLY  70.00   (2) to (2)   BRCEBG J  70.00
1  34244 34246  "1 "    0     # line from  BRCEBG J  70.00   (2) to (3)   SAXONCRK  70.00
1  34246 34248  "1 "    0     # line from  SAXONCRK  70.00   (3) to (2)   INDN FLT  70.00
2  34246 34346  "1 "    0     # TRAN from  SAXONCRK  70.00   (3) to (1)   SAXNCK L   4.16
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1  34248 34250  "1 "    0     # line from  INDN FLT  70.00   (2) to (1)   YOSEMITE  70.00
4  34242     0  "1 "    0     # LOAD-DROP    BER VLLY  70.00  LOAD==5.91(1.20)
4  34246     0  "1 "    0     # LOAD-DROP    SAXONCRK  70.00  LOAD==0.03(0.02)
4  34248     0  "1 "    0     # LOAD-DROP    INDN FLT  70.00  LOAD==2.02(0.41)
4  34250     0  "1 "    0     # LOAD-DROP    YOSEMITE  70.00  LOAD==2.90(0.00)
0
 #
 #
 # (54)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34237 34255  "1 "    0     # line from  CANANDGA  70.00   (2) to (3)   TRIGO J   70.00
1  34237 34240  "1 "    0     # line from  CANANDGA  70.00   (2) to BRKR  GLASS     70.00
1  34255 34238  "1 "    0     # line from  TRIGO J   70.00   (3) to BRKR  BONITA    70.00
1  34255 34254  "1 "    0     # line from  TRIGO J   70.00   (3) to (3)   TRIGO     70.00
1  34254 34252  "1 "    0     # line from  TRIGO     70.00   (3) to BRKR  MADERA    70.00
1  34254 34264  "1 "    0     # line from  TRIGO     70.00   (3) to (1)   EL PECO   70.00
4  34237     0  "1 "    0     # LOAD-DROP    CANANDGA  70.00  LOAD==7.60(5.70)
4  34238     0  "1 "    0     # LOAD-DROP    BONITA    70.00  LOAD==14.37(2.92)
4  34264     0  "1 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==9.86(2.01)
4  34264     0  "2 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==7.26(1.48)
1  34238 34236  "1 "    1      # Switches in Bonita SW23 to transfer load
4  34238     0  "1 "    1      # Restore Load at Bonita
0
 #
 #
 # (55)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34252 34256  "1 "    0     # line from  MADERA    70.00  BRKR to BRKR  BORDEN    70.00
0
 #
 #
 # (56)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34252 34256  "2 "    0     # line from  MADERA    70.00  BRKR to BRKR  BORDEN    70.00
0
 #
 #
 # (57)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34256 34240  "1 "    0     # line from  BORDEN    70.00  BRKR to BRKR  GLASS     70.00
0
 #
 #
 # (58)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34256 34262  "1 "    0     # line from  BORDEN    70.00  BRKR to (2)   CASSIDY   70.00
1  34262 34454  "1 "    0     # line from  CASSIDY   70.00   (2) to (2)   RIVERROC  70.00
1  34454 34464  "1 "    0     # line from  RIVERROC  70.00   (2) to BRKR  COPPRMNE  70.00
4  34262     0  "1 "    0     # LOAD-DROP    CASSIDY   70.00  LOAD==14.31(2.90)
4  34454     0  "1 "    0     # LOAD-DROP    RIVERROC  70.00  LOAD==2.01(1.83)
0
 #
 #
 # (59)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34259 34261  "1 "    0     # line from  NRTHFORK  70.00   (3) to (2)   SJNO3     70.00
1  34259 34260  "1 "    0     # line from  NRTHFORK  70.00   (3) to (3)   SJNO2     70.00
2  34259 34340  "1 "    0     # TRAN from  NRTHFORK  70.00   (3) to (1)   N.FORK E   9.11
2  34261 34633  "1 "    0     # TRAN from  SJNO3     70.00   (2) to (1)   SJ3GEN     9.11
1  34260 34452  "1 "    0     # line from  SJNO2     70.00   (3) to BRKR  WISHON    70.00
2  34260 34631  "1 "    0     # TRAN from  SJNO2     70.00   (3) to (1)   SJ2GEN     9.11
4  34261     0  "2 "    0     # LOAD-DROP    SJNO3     70.00  LOAD==6.95(1.41)
4  34260     0  "2 "    0     # LOAD-DROP    SJNO2     70.00  LOAD==3.22(0.66)
4  34340     0  "1 "    0     # LOAD-DROP    N.FORK E   9.11  LOAD==1.21(0.25)
3  34633     0  "1 "    0     # GEN-DROP    SJ3GEN     9.11  GEN==1.00(0.00)
3  34631     0  "1 "    0     # GEN-DROP    SJ2GEN     9.11  GEN==2.00(0.00)
0
 #
 #
 # (60)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
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 1  34321 34226  "1 "    0     # line from  MCSWAINJ  70.00   (3) to (2)   MC SWAIN  70.00
 1  34321 34230  "1 "    0     # line from  MCSWAINJ  70.00   (3) to BRKR  MRCDFLLS  70.00
 1  34321 34232  "1 "    0     # line from  MCSWAINJ  70.00   (3) to BRKR  EXCHEQUR  70.00
 2  34226 34320  "1 "    0     # TRAN from  MC SWAIN  70.00   (2) to (1)   MCSWAIN    9.11
 3  34320     0  "1 "    0     # GEN-DROP    MCSWAIN    9.11  GEN==10.00(2.00)
 0
  #
  #
  # (61)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  37563 30800  "1 "    0     # line from  MELONES  230.00  BRKR to BRKR  WILSON   230.00
 3  34604     0  "**"    0      # Drop unit#3 with a loss Melones - Wilson line
 0
  #
  #
  # (62)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  38615 30790  "1 "    0     # line from  DS AMIGO 230.00  BRKR to BRKR  PANOCHE  230.00
 0
  #
  #
  # (63)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30765  (30069)  30050  34302 :
 2  30765 30050  "1 "    0     # TRAN from  LOSBANOS 230.00  BRKR to (1)   LOSBANOS 500.00
 0
  #
  #
  # (64)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30790  (30791)  34158  34310 :
 2  30790 34158  "1 "    0     # TRAN from  PANOCHE  230.00  BRKR to (1)   PANOCHE  115.00
 0
  #
  #
  # (65)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
 2  30790 34158  "2 "    0     # TRAN from  PANOCHE  230.00  BRKR to BRKR  PANOCHE  115.00
 0
  #
  #
  # (66)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  34112  (34176)  34232  34306 :
 2  34112 34232  "1 "    0     # TRAN from  EXCHEQUR 115.00  BRKR to (4)   EXCHEQUR  70.00
 1  34232 34228  "1 "    0     # line from  EXCHEQUR  70.00  BRKR to (1)   MARIPOS2  70.00
 1  34232 34242  "1 "    0     # line from  EXCHEQUR  70.00  BRKR to (1)   BER VLLY  70.00
 1  34232 34321  "1 "    0     # line from  EXCHEQUR  70.00  BRKR to (1)   MCSWAINJ  70.00
 4  34228     0  "1 "    0     # LOAD-DROP    MARIPOS2  70.00  LOAD==9.01(1.83)
 4  34228     0  "2 "    0     # LOAD-DROP    MARIPOS2  70.00  LOAD==9.37(1.90)
 1  34228 34244  "1 "    1      # Switches in Mariposa SW 39 to transfer load
 4  34228     0  "**"    1      # Restore Load at Mariposa
 0
  #
  #
  # (67)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
 2  34134 30800  "1 "    0     # TRAN from  WILSON A 115.00  BRKR to BRKR  WILSON   230.00
 0
  #
  #
  # (68)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
 2  34136 30800  "2 "    0     # TRAN from  WILSON B 115.00  BRKR to BRKR  WILSON   230.00
 0
  #
  #
  # (69)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  34144  (34146)  34202  34312 :
 2  34144 34202  "2 "    0     # TRAN from  MERCED   115.00  BRKR to (1)   MERCED    70.00
```

```
0
 #
 #
 # (70)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34200 34162  "2 "    0     # TRAN from  ORO LOMA  70.00  BRKR to (3)   ORO LOMA 115.00
1  34162 34161  "1 "    0     # line from  ORO LOMA 115.00  BRKR to (1)   DFSTP    115.00
1  34162 34168  "1 "    0     # line from  ORO LOMA 115.00  BRKR to (1)   EL NIDO  115.00
0
 #
 #
 # (71)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34214 30765  "3 "    0     # TRAN from  LOS BANS  70.00  BRKR to BRKR  LOSBANOS 230.00
0
 #
 #
 # (72)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34214 30765  "4 "    0     # TRAN from  LOS BANS  70.00  BRKR to BRKR  LOSBANOS 230.00
0
 #
 #
 # (73)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34256 30805  "1 "    0     # TRAN from  BORDEN    70.00  BRKR to BRKR  BORDEN   230.00
0
 #
 #
 # (74)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34256 30805  "2 "    0     # TRAN from  BORDEN    70.00  BRKR to BRKR  BORDEN   230.00
0
 #
 #
 # (75)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34268 34156  "1 "    0     # TRAN from  MENDOTA   70.00  BRKR to (3)   MENDOTA  115.00
1  34156 34178  "1 "    0     # line from  MENDOTA  115.00  BRKR to (1)   MADERAPR 115.00
1  34156 34157  "1 "    0     # line from  MENDOTA  115.00  BRKR to (1)   PANOCHET 115.00
4  34156     0  "1 "    0     # LOAD-DROP    MENDOTA  115.00  LOAD==24.55(4.99)
0
 #
 #
 # (76)  B1 GENERATOR OUTAGE
 #
3  34142     0  "1"     0     # WHD_PAN2  13.80       PGEN=49.00  QGEN=-22.43
0
 #
 #
 # (77)  B1 GENERATOR OUTAGE
 #
3  34179     0  "1"     0     # MADERA_G  13.80       PGEN=28.60  QGEN=3.67
0
 #
 #
 # (78)  B1 GENERATOR OUTAGE
 #
3  34186     0  "1"     0     # DG_PAN1   13.80       PGEN=49.00  QGEN=-17.22
0
 #
 #
 # (79)  B1 GENERATOR OUTAGE
 #
3  34301     0  "1"     0     # CHOWCOGN  13.80       PGEN=50.00  QGEN=0.72
0
 #
 #
 # (80)  B1 GENERATOR OUTAGE
 #
3  34305     0  "1"     0     # CHWCHLA2  13.80       PGEN=12.50  QGEN=7.35
```

```
0
 #
 #
 # (81)  B1 GENERATOR OUTAGE
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (82)  B1 GENERATOR OUTAGE
 #
3  34316     0  "1"     0     # ONEILPMP   9.11       PGEN=0.52  QGEN=0.00
0
 #
 #
 # (83)  B1 GENERATOR OUTAGE
 #
3  34320     0  "1"     0     # MCSWAIN    9.11       PGEN=10.00  QGEN=0.00
0
 #
 #
 # (84)  B1 GENERATOR OUTAGE
 #
3  34322     0  "1"     0     # MERCEDFL   9.11       PGEN=3.50  QGEN=2.00
0
 #
 #
 # (85)  B1 GENERATOR OUTAGE
 #
3  34326     0  "1"     0     # PANO_BS1  13.80       PGEN=102.50  QGEN=25.42
0
 #
 #
 # (86)  B1 GENERATOR OUTAGE
 #
3  34326     0  "2"     0     # PANO_BS1  13.80       PGEN=102.50  QGEN=25.42
0
 #
 #
 # (87)  B1 GENERATOR OUTAGE
 #
3  34327     0  "3"     0     # PANO_BS2  13.80       PGEN=102.50  QGEN=25.42
0
 #
 #
 # (88)  B1 GENERATOR OUTAGE
 #
3  34327     0  "4"     0     # PANO_BS2  13.80       PGEN=102.50  QGEN=25.42
0
 #
 #
 # (89)  B1 GENERATOR OUTAGE
 #
3  34328     0  "1"     0     # STARGT1   13.80       PGEN=60.94  QGEN=13.94
0
 #
 #
 # (90)  B1 GENERATOR OUTAGE
 #
3  34329     0  "2"     0     # STARGT2   13.80       PGEN=60.94  QGEN=13.94
0
 #
 #
 # (91)  B1 GENERATOR OUTAGE
 #
3  34330     0  "1"     0     # ELNIDO    13.80       PGEN=12.50  QGEN=4.15
0
 #
 #
 # (92)  B1 GENERATOR OUTAGE
 #
```

```
3  34332     0  "1"     0     # JRWCOGEN   9.11       PGEN=3.80  QGEN=5.40
0
 #
 #
 # (93)  B1 GENERATOR OUTAGE
 #
3  34334     0  "1"     0     # BIO PWR    9.11       PGEN=21.80  QGEN=8.92
0
 #
 #
 # (94)  B1 GENERATOR OUTAGE
 #
3  34342     0  "1"     0     # INT.TURB   9.11       PGEN=1.10  QGEN=0.00
0
 #
 #
 # (95)  B1 GENERATOR OUTAGE
 #
3  34631     0  "1"     0     # SJ2GEN     9.11       PGEN=2.00  QGEN=0.00
0
 #
 #
 # (96)  B1 GENERATOR OUTAGE
 #
3  34633     0  "1"     0     # SJ3GEN     9.11       PGEN=1.00  QGEN=0.00
0
 #
 #
 # (97)  B1 GENERATOR OUTAGE
 #
3  34335     0  "1"     0     # Q196GT1   16.50       PGEN=192.50  QGEN=31.08
0
 #
 #
 # (98)  B1 GENERATOR OUTAGE
 #
3  34336     0  "2"     0     # Q196GT2   16.50       PGEN=192.50  QGEN=31.08
0
 #
 #
 # (99)  B1 GENERATOR OUTAGE
 #
3  34337     0  "3"     0     # Q196ST1   13.80       PGEN=68.50  QGEN=11.04
0
 #
 #
 # (100)  B1 GENERATOR OUTAGE
 #
3  34338     0  "4"     0     # Q196ST2   13.80       PGEN=68.50  QGEN=11.04
0
 #
 #
 # (101)  B CAPACITOR OUTAGE
 #
6  30765     0  "v"     0     # LOSBANOS  230.0  SVD
0
 #
 #
 # (102)  B CAPACITOR OUTAGE
 #
6  30796     0  "v"     0     # STOREY 1  230.0  SVD
0
 #
 #
 # (103)  B CAPACITOR OUTAGE
 #
6  34134     0  "v"     0     # WILSON A  115.0  SVD
0
 #
 #
 # (104)  B CAPACITOR OUTAGE
```

```
 #
6  34252     0  "v"     0     # MADERA     70.0  SVD
0
 #
 #
 # (105)  B CAPACITOR OUTAGE
 #
6  34302     0  "v"     0     # L.BANS T   13.8  SVD
0
 #
 #
 # (106)  L-1/G-1 OVERLAPPING OUTAGE
 # Le Grand - Chowchilla 115 kV Line and Exchequer
1  34100 34101  "1 "    0     # line from  CHWCHLLA 115.00  BRKR to (3)   CERTAN T 115.00
1  34101 34116  "1 "    0     # line from  CERTAN T 115.00   (3) to BRKR  LE GRAND 115.00
1  34101 34107  "1 "    0     # line from  CERTAN T 115.00   (3) to (2)   CERTANJ2 115.00
1  34107 34103  "1 "    0     # line from  CERTANJ2 115.00   (2) to (3)   CHWCGNJT 115.00
1  34103 34102  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (1)   CERTTEED 115.00
1  34103 34109  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (3)   CHWCGN   115.00
1  34109 34111  "1 "    0     # line from  CHWCGN   115.00   (3) to (2)   CHWCHLA2 115.00
2  34109 34301  "1 "    0     # TRAN from  CHWCGN   115.00   (3) to (1)   CHOWCOGN  13.80
2  34111 34305  "1 "    0     # TRAN from  CHWCHLA2 115.00   (2) to (1)   CHWCHLA2  13.80
4  34102     0  "1 "    0     # LOAD-DROP    CERTTEED 115.00  LOAD==9.94(6.94)
4  34305     0  "ss"    0     # LOAD-DROP    CHWCHLA2  13.80  LOAD==2.00(1.11)
3  34301     0  "1 "    0     # GEN-DROP    CHOWCOGN  13.80  GEN==50.00(4.33)
3  34305     0  "1 "    0     # GEN-DROP    CHWCHLA2  13.80  GEN==12.50(7.30)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (107)  L-1/G-1 OVERLAPPING OUTAGE
 # Chowchilla - Kerckhoff #2 115 kV Line and Exchequer
1  34105 34100  "1 "    0     # line from  CERTANJ1 115.00   (2) to BRKR  CHWCHLLA 115.00
1  34105 34121  "1 "    0     # line from  CERTANJ1 115.00   (2) to (3)   SHARON T 115.00
1  34121 34120  "1 "    0     # line from  SHARON T 115.00   (3) to (1)   SHARON   115.00
1  34121 34128  "1 "    0     # line from  SHARON T 115.00   (3) to (3)   OAKH_JCT 115.00
1  34128 34126  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (2)   CORSGOLD 115.00
1  34128 34123  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (2)   K1-JCT   115.00
1  34126 34122  "1 "    0     # line from  CORSGOLD 115.00   (2) to (1)   OAKHURST 115.00
1  34123 34358  "2 "    0     # line from  K1-JCT   115.00   (2) to BRKR  KERCKHF2 115.00
4  34120     0  "1 "    0     # LOAD-DROP    SHARON   115.00  LOAD==7.10(4.96)
4  34126     0  "1 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==2.21(0.45)
4  34126     0  "2 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==26.19(5.32)
4  34122     0  "1 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==11.68(2.37)
4  34122     0  "2 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==15.01(3.05)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (108)  L-1/G-1 OVERLAPPING OUTAGE
 # Atwater - El Capitan 115 kV Line and Exchequer
1  34104 34106  "1 "    0     # line from  ATWATER  115.00  BRKR to (2)   CASTLE   115.00
1  34106 34138  "1 "    0     # line from  CASTLE   115.00   (2) to BRKR  EL CAPTN 115.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (109)  L-1/G-1 OVERLAPPING OUTAGE
 # Atwater - Merced 115 kV Line and Exchequer
1  34104 34108  "1 "    0     # line from  ATWATER  115.00  BRKR to (3)   CRESEY T 115.00
1  34108 34110  "1 "    0     # line from  CRESEY T 115.00  BRKR to (1)   ATWATR J 115.00
1  34108 34114  "1 "    0     # line from  CRESEY T 115.00   (3) to (3)   JRWD GEN 115.00
1  34114 34124  "1 "    0     # line from  JRWD GEN 115.00   (3) to (2)   JR WOOD  115.00
2  34114 34332  "1 "    0     # TRAN from  JRWD GEN 115.00   (3) to (1)   JRWCOGEN   9.11
1  34124 34140  "1 "    0     # line from  JR WOOD  115.00   (2) to (1)   CRESSEY  115.00
4  34124     0  "1 "    0     # LOAD-DROP    JR WOOD  115.00  LOAD==11.70(10.32)
4  34140     0  "1 "    0     # LOAD-DROP    CRESSEY  115.00  LOAD==19.02(3.86)
3  34332     0  "1 "    0     # GEN-DROP    JRWCOGEN   9.11  GEN==3.80(5.40)
```

```
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (110)  L-1/G-1 OVERLAPPING OUTAGE
 # Cressy Tap 115 kV Line and Exchequer
1  34108 34110  "1 "    0     # line from  CRESEY T 115.00  BRKR to (3)   ATWATR J 115.00
1  34110 34130  "1 "    0     # line from  ATWATR J 115.00   (3) to (2)   LIVNGSTN 115.00
1  34110 34144  "1 "    0     # line from  ATWATR J 115.00   (3) to BRKR  MERCED   115.00
1  34130 34132  "1 "    0     # line from  LIVNGSTN 115.00   (2) to (1)   GALLO    115.00
4  34130     0  "3 "    0     # LOAD-DROP    LIVNGSTN 115.00  LOAD==24.58(5.00)
4  34132     0  "1 "    0     # LOAD-DROP    GALLO    115.00  LOAD==4.30(3.68)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (111)  L-1/G-1 OVERLAPPING OUTAGE
 # Le Grand - Dairyland 115 kV Line and Exchequer
1  34116 34154  "1 "    0     # line from  LE GRAND 115.00  BRKR to BRKR  DAIRYLND 115.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (112)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Oro Loma 115 kV Line and Exchequer
1  34118 34136  "1 "    0     # line from  LE GRNDJ 115.00   (2) to BRKR  WILSON B 115.00
1  34118 34168  "1 "    0     # line from  LE GRNDJ 115.00   (2) to (2)   EL NIDO  115.00
1  34168 34162  "1 "    0     # line from  EL NIDO  115.00   (2) to BRKR  ORO LOMA 115.00
4  34168     0  "1 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==12.49(2.54)
4  34168     0  "2 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==15.00(3.05)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (113)  L-1/G-1 OVERLAPPING OUTAGE
 # El Capitan - Wilson 115 kV Line and Exchequer
1  34136 34138  "1 "    0     # line from  WILSON B 115.00  BRKR to BRKR  EL CAPTN 115.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (114)  L-1/G-1 OVERLAPPING OUTAGE
 # Dairyland - Mendota 115 kV Line and Exchequer
1  34150 34154  "1 "    0     # line from  NEWHALL  115.00   (2) to BRKR  DAIRYLND 115.00
1  34150 34178  "1 "    0     # line from  NEWHALL  115.00   (2) to (3)   MADERAPR 115.00
1  34178 34156  "1 "    0     # line from  MADERAPR 115.00   (3) to BRKR  MENDOTA  115.00
2  34178 34179  "1 "    0     # TRAN from  MADERAPR 115.00   (3) to (1)   MADERA_G  13.80
4  34150     0  "2 "    0     # LOAD-DROP    NEWHALL  115.00  LOAD==8.55(1.73)
4  34150     0  "3 "    0     # LOAD-DROP    NEWHALL  115.00  LOAD==10.62(2.16)
4  34179     0  "ss"    0     # LOAD-DROP    MADERA_G  13.80  LOAD==3.60(0.85)
3  34179     0  "1 "    0     # GEN-DROP    MADERA_G  13.80  GEN==28.60(6.34)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (115)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Mendota 115 kV Line and Exchequer
1  34157 34156  "1 "    0     # line from  PANOCHET 115.00   (2) to BRKR  MENDOTA  115.00
1  34157 34158  "1 "    0     # line from  PANOCHET 115.00   (2) to BRKR  PANOCHE  115.00
3  34186     0  "1 "    0     # DG_PAN Unit trips for Panoche - Mendota 115 kV outage
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
```

```
 # (116)  L-1/G-1 OVERLAPPING OUTAGE
 # Glass - Biola - Madera 70 kV Line and Exchequer
1  34237 34255  "1 "    0     # line from  CANANDGA  70.00   (2) to (3)   TRIGO J   70.00
1  34237 34240  "1 "    0     # line from  CANANDGA  70.00   (2) to BRKR  GLASS     70.00
1  34255 34238  "1 "    0     # line from  TRIGO J   70.00   (3) to BRKR  BONITA    70.00
1  34255 34254  "1 "    0     # line from  TRIGO J   70.00   (3) to (3)   TRIGO     70.00
1  34254 34252  "1 "    0     # line from  TRIGO     70.00   (3) to BRKR  MADERA    70.00
1  34254 34264  "1 "    0     # line from  TRIGO     70.00   (3) to (1)   EL PECO   70.00
4  34237     0  "1 "    0     # LOAD-DROP    CANANDGA  70.00  LOAD==7.60(5.70)
4  34238     0  "1 "    0     # LOAD-DROP    BONITA    70.00  LOAD==14.37(2.92)
4  34264     0  "1 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==9.86(2.01)
4  34264     0  "2 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==7.26(1.48)
1  34238 34236  "1 "    1      # Switches in Bonita SW23 to transfer load
4  34238     0  "1 "    1      # Restore Load at Bonita
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (117)  L-1/G-1 OVERLAPPING OUTAGE
 # Merced Falls - Exchequer 70 kV Line and Exchequer
1  34321 34226  "1 "    0     # line from  MCSWAINJ  70.00   (3) to (2)   MC SWAIN  70.00
1  34321 34230  "1 "    0     # line from  MCSWAINJ  70.00   (3) to BRKR  MRCDFLLS  70.00
1  34321 34232  "1 "    0     # line from  MCSWAINJ  70.00   (3) to BRKR  EXCHEQUR  70.00
2  34226 34320  "1 "    0     # TRAN from  MC SWAIN  70.00   (2) to (1)   MCSWAIN    9.11
3  34320     0  "1 "    0     # GEN-DROP    MCSWAIN    9.11  GEN==10.00(2.00)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (118)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Canal - Oro Loma 70 kV Line and Exchequer
1  34200 34222  "1 "    0     # line from  ORO LOMA  70.00  BRKR to (3)   MRCYSPRS  70.00
1  34222 34220  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ORTIGA    70.00
1  34222 34224  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ARBURUA   70.00
1  34220 34206  "1 "    0     # line from  ORTIGA    70.00   (2) to BRKR  CANAL     70.00
1  34224 34272  "1 "    0     # line from  ARBURUA   70.00   (2) to (2)   WRGHT PP  70.00
1  34272 34214  "1 "    0     # line from  WRGHT PP  70.00   (2) to BRKR  LOS BANS  70.00
4  34220     0  "1 "    0     # LOAD-DROP    ORTIGA    70.00  LOAD==6.88(1.40)
4  34224     0  "1 "    0     # LOAD-DROP    ARBURUA   70.00  LOAD==3.77(1.83)
4  34272     0  "1 "    0     # LOAD-DROP    WRGHT PP  70.00  LOAD==9.50(1.93)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (119)  L-1/G-1 OVERLAPPING OUTAGE
 # Atwater - El Capitan 115 kV Line and JR Wood Cogen
1  34104 34106  "1 "    0     # line from  ATWATER  115.00  BRKR to (2)   CASTLE   115.00
1  34106 34138  "1 "    0     # line from  CASTLE   115.00   (2) to BRKR  EL CAPTN 115.00
 #
3  34332     0  "1"     0     # JRWCOGEN   9.11       PGEN=4.00  QGEN=5.40
0
 #
 #
 # (120)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Atwater #2 115 kV Line and JR Wood Cogen
1  34134 34104  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  ATWATER  115.00
 #
3  34332     0  "1"     0     # JRWCOGEN   9.11       PGEN=4.00  QGEN=5.40
0
 #
 #
 # (121)  L-1/G-1 OVERLAPPING OUTAGE
 # Le Grand - Chowchilla 115 kV Line and Kerckhoff
1  34100 34101  "1 "    0     # line from  CHWCHLLA 115.00  BRKR to (3)   CERTAN T 115.00
1  34101 34116  "1 "    0     # line from  CERTAN T 115.00   (3) to BRKR  LE GRAND 115.00
1  34101 34107  "1 "    0     # line from  CERTAN T 115.00   (3) to (2)   CERTANJ2 115.00
1  34107 34103  "1 "    0     # line from  CERTANJ2 115.00   (2) to (3)   CHWCGNJT 115.00
1  34103 34102  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (1)   CERTTEED 115.00
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 1  34103 34109  "1 "    0     # line from  CHWCGNJT 115.00   (3) to (3)   CHWCGN   115.00
 1  34109 34111  "1 "    0     # line from  CHWCGN   115.00   (3) to (2)   CHWCHLA2 115.00
 2  34109 34301  "1 "    0     # TRAN from  CHWCGN   115.00   (3) to (1)   CHOWCOGN  13.80
 2  34111 34305  "1 "    0     # TRAN from  CHWCHLA2 115.00   (2) to (1)   CHWCHLA2  13.80
 4  34102     0  "1 "    0     # LOAD-DROP    CERTTEED 115.00  LOAD==9.94(6.94)
 4  34305     0  "ss"    0     # LOAD-DROP    CHWCHLA2  13.80  LOAD==2.00(1.11)
 3  34301     0  "1 "    0     # GEN-DROP    CHOWCOGN  13.80  GEN==50.00(4.33)
 3  34305     0  "1 "    0     # GEN-DROP    CHWCHLA2  13.80  GEN==12.50(7.30)
  #
 3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
 0
  #
  #
  # (122)  L-1/G-1 OVERLAPPING OUTAGE
  # Exchequer - Le Grand 115 kV Line and Kerckhoff
 1  34112 34116  "1 "    0     # line from  EXCHEQUR 115.00  BRKR to BRKR  LE GRAND 115.00
 3  34306     0  "1 "    0      # Exchequer Unit will trip for this outage
 4  34228     0  "**"    0      # Mariposa Loads will drop if bus is below 64 kV, this is
anticipate
  #
 3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
 0
  #
  #
  # (123)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  # Le Grand - Dairyland 115 kV Line and Kerckhoff
 1  34116 34154  "1 "    0     # line from  LE GRAND 115.00  BRKR to BRKR  DAIRYLND 115.00
  #
 3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
 0
  #
  #
  # (124)  L-1/G-1 OVERLAPPING OUTAGE
  # Glass - Biola - Madera 70 kV Line and Kerckhoff
 1  34237 34255  "1 "    0     # line from  CANANDGA  70.00   (2) to (3)   TRIGO J   70.00
 1  34237 34240  "1 "    0     # line from  CANANDGA  70.00   (2) to BRKR  GLASS     70.00
 1  34255 34238  "1 "    0     # line from  TRIGO J   70.00   (3) to BRKR  BONITA    70.00
 1  34255 34254  "1 "    0     # line from  TRIGO J   70.00   (3) to (3)   TRIGO     70.00
 1  34254 34252  "1 "    0     # line from  TRIGO     70.00   (3) to BRKR  MADERA    70.00
 1  34254 34264  "1 "    0     # line from  TRIGO     70.00   (3) to (1)   EL PECO   70.00
 4  34237     0  "1 "    0     # LOAD-DROP    CANANDGA  70.00  LOAD==7.60(5.70)
 4  34238     0  "1 "    0     # LOAD-DROP    BONITA    70.00  LOAD==14.37(2.92)
 4  34264     0  "1 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==9.86(2.01)
 4  34264     0  "2 "    0     # LOAD-DROP    EL PECO   70.00  LOAD==7.26(1.48)
 1  34238 34236  "1 "    1      # Switches in Bonita SW23 to transfer load
 4  34238     0  "1 "    1      # Restore Load at Bonita
  #
 3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
 0
  #
  #
  # (125)  L-1/G-1 OVERLAPPING OUTAGE
  # Los Banos - Canal - Oro Loma 70 kV Line and Oneil Pump
 1  34200 34222  "1 "    0     # line from  ORO LOMA  70.00  BRKR to (3)   MRCYSPRS  70.00
 1  34222 34220  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ORTIGA    70.00
 1  34222 34224  "1 "    0     # line from  MRCYSPRS  70.00   (3) to (2)   ARBURUA   70.00
 1  34220 34206  "1 "    0     # line from  ORTIGA    70.00   (2) to BRKR  CANAL     70.00
 1  34224 34272  "1 "    0     # line from  ARBURUA   70.00   (2) to (2)   WRGHT PP  70.00
 1  34272 34214  "1 "    0     # line from  WRGHT PP  70.00   (2) to BRKR  LOS BANS  70.00
 4  34220     0  "1 "    0     # LOAD-DROP    ORTIGA    70.00  LOAD==6.88(1.40)
 4  34224     0  "1 "    0     # LOAD-DROP    ARBURUA   70.00  LOAD==3.77(1.83)
 4  34272     0  "1 "    0     # LOAD-DROP    WRGHT PP  70.00  LOAD==9.50(1.93)
  #
 3  34316     0  "1"     0     # ONEILPMP   9.11       PGEN=0.52  QGEN=0.00
 0
  #
  #
  # (126)  L-1/G-1 OVERLAPPING OUTAGE
  # Warnerville - Wilson 230 kV Line and Melones Unit 1
 1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
  #
```

```
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (127)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #1 230 kV Line and Melones Unit 1
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (128)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #2 230 kV Line and Melones Unit 1
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (129)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #1 230 kV Line and Melones Unit 1
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (130)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #2 230 kV Line and Melones Unit 1
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (131)  L-1/G-1 OVERLAPPING OUTAGE
 # Melones - Wilson 230 kV Line and Melones Unit 1
1  37563 30800  "1 "    0     # line from  MELONES 230.00   (2) to BRKR  WILSON   230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (132)  L-1/G-1 OVERLAPPING OUTAGE
 # Warnerville - Wilson 230 kV Line and Helms Unit 1
1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (133)  L-1/G-1 OVERLAPPING OUTAGE
 # Westley - Los Banos 230 kV Line and Helms Unit 1
1  30670 30765  "1 "    0     # line from  WESTLEY  230.00  BRKR to BRKR  LOSBANOS 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (134)  L-1/G-1 OVERLAPPING OUTAGE
 # Moss Landing - Panoche 230 kV Line and Helms Unit 1
1  30750 30790  "1 "    0     # line from  MOSSLND2 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
```

```
0
 #
 #
 # (135)  L-1/G-1 OVERLAPPING OUTAGE
 # Coburn - Panoche 230 kV Line and Helms Unit 1
1  30760 30790  "1 "    0     # line from  COBURN   230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (136)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #1 230 kV Line and Helms Unit 1
1  30765 30790  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (137)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #2 230 kV Line and Helms Unit 1
1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (138)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Dos Amigos 230 kV Line and Helms Unit 1
1  30765 38615  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  DS AMIGO 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (139)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #1 230 kV Line and Helms Unit 1
1  30765 38625  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (140)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #2 230 kV Line and Helms Unit 1
1  30765 38625  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (141)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Kearney 230 kV Line and Helms Unit 1
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (142)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Helm 230 kV Line and Helms Unit 1
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (143)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #1 230 kV Line and Helms Unit 1
```

```
1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (144)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #2 230 kV Line and Helms Unit 1
1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (145)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #1 230 kV Line and Helms Unit 1
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (146)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #2 230 kV Line and Helms Unit 1
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (147)  L-1/G-1 OVERLAPPING OUTAGE
 # Melones - Wilson 230 kV Line and Helms Unit 1
1  37563 30800  "1 "    0     # line from  MELONES 230.00   (2) to BRKR  WILSON   230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (148)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #1 230 kV Line and Helms Unit 1
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (149)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #2 230 kV Line and Helms Unit 1
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (150)  L-1/G-1 OVERLAPPING OUTAGE
 # Dos Amigos - Panoche 230 kV Line and Helms Unit 1
1  38615 30790  "1 "    0     # line from  DS AMIGO 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (151)  L-1/G-1 OVERLAPPING OUTAGE
 # Warnerville - Wilson 230 kV Line and Exchequer
1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
```

```
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (152)  L-1/G-1 OVERLAPPING OUTAGE
 # Westley - Los Banos 230 kV Line and Exchequer
1  30670 30765  "1 "    0     # line from  WESTLEY  230.00  BRKR to BRKR  LOSBANOS 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (153)  L-1/G-1 OVERLAPPING OUTAGE
 # Moss Landing - Panoche 230 kV Line and Exchequer
1  30750 30790  "1 "    0     # line from  MOSSLND2 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (154)  L-1/G-1 OVERLAPPING OUTAGE
 # Coburn - Panoche 230 kV Line and Exchequer
1  30760 30790  "1 "    0     # line from  COBURN   230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (155)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #1 230 kV Line and Exchequer
1  30765 30790  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (156)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #2 230 kV Line and Exchequer
1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (157)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Dos Amigos 230 kV Line and Exchequer
1  30765 38615  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  DS AMIGO 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (158)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #1 230 kV Line and Exchequer
1  30765 38625  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (159)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #2 230 kV Line and Exchequer
1  30765 38625  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (160)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Kearney 230 kV Line and Exchequer
```

```
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (161)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Helm 230 kV Line and Exchequer
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (162)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #1 230 kV Line and Exchequer
1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (163)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #2 230 kV Line and Exchequer
1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (164)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #1 230 kV Line and Exchequer
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (165)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #2 230 kV Line and Exchequer
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (166)  L-1/G-1 OVERLAPPING OUTAGE
 # Melones - Wilson 230 kV Line and Exchequer
1  37563 30800  "1 "    0     # line from  MELONES 230.00   (2) to BRKR  WILSON   230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (167)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #1 230 kV Line and Exchequer
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (168)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #2 230 kV Line and Exchequer
```

```
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (169)  L-1/G-1 OVERLAPPING OUTAGE
 # Dos Amigos - Panoche 230 kV Line and Exchequer
1  38615 30790  "1 "    0     # line from  DS AMIGO 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (170)  L-1/G-1 OVERLAPPING OUTAGE
 # Warnerville - Wilson 230 kV Line and Kerckhoff
1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (171)  L-1/G-1 OVERLAPPING OUTAGE
 # Westley - Los Banos 230 kV Line and Kerckhoff
1  30670 30765  "1 "    0     # line from  WESTLEY  230.00  BRKR to BRKR  LOSBANOS 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (172)  L-1/G-1 OVERLAPPING OUTAGE
 # Moss Landing - Panoche 230 kV Line and Kerckhoff
1  30750 30790  "1 "    0     # line from  MOSSLND2 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (173)  L-1/G-1 OVERLAPPING OUTAGE
 # Coburn - Panoche 230 kV Line and Kerckhoff
1  30760 30790  "1 "    0     # line from  COBURN   230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (174)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #1 230 kV Line and Kerckhoff
1  30765 30790  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (175)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Panoche #2 230 kV Line and Kerckhoff
1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (176)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - Dos Amigos 230 kV Line and Kerckhoff
1  30765 38615  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  DS AMIGO 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
```

```
 # (177)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #1 230 kV Line and Kerckhoff
1  30765 38625  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (178)  L-1/G-1 OVERLAPPING OUTAGE
 # Los Banos - San Luis PGP #2 230 kV Line and Kerckhoff
1  30765 38625  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (179)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Kearney 230 kV Line and Kerckhoff
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (180)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Helm 230 kV Line and Kerckhoff
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (181)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #1 230 kV Line and Kerckhoff
1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (182)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #2 230 kV Line and Kerckhoff
1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (183)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #1 230 kV Line and Kerckhoff
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (184)  L-1/G-1 OVERLAPPING OUTAGE
 # Wilson - Borden #2 230 kV Line and Kerckhoff
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (185)  L-1/G-1 OVERLAPPING OUTAGE
```

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 # Melones - Wilson 230 kV Line and Kerckhoff
1  37563 30800  "1 "    0     # line from  MELONES 230.00   (2) to BRKR  WILSON   230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (186)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #1 230 kV Line and Kerckhoff
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (187)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Gregg #2 230 kV Line and Kerckhoff
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (188)  L-1/G-1 OVERLAPPING OUTAGE
 # Dos Amigos - Panoche 230 kV Line and Kerckhoff
1  38615 30790  "1 "    0     # line from  DS AMIGO 230.00  BRKR to BRKR  PANOCHE  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # 2013 sprpk category b contingency list
 # Fresno Zone 314
 #
 #
 # (189)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
0
 #
 #
 # (190)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
0
 #
 #
 # (191)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
0
 #
 #
 # (192)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
0
 #
 #
 # (193)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
0
 #
 #
```

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 # (194)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
0
 #
 #
 # (195)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
0
 #
 #
 # (196)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
0
 #
 #
 # (197)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
0
 #
 #
 # (198)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
0
 #
 #
 # (199)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
0
 #
 #
 # (200)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
0
 #
 #
 # (201)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
```

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1  30875 30874  "1 "    0     # line from  MC CALL  230.00  BRKR to BRKR  P0615STN 230.00
0
 #
 #
 # (202)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30875 30874  "2 "    0     # line from  MC CALL  230.00  BRKR to BRKR  P0615STN 230.00
0
 #
 #
 # (203)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
0
 #
 #
 # (204)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30900 30905  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  TEMPLETN 230.00
0
 #
 #
 # (205)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30900 30915  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MORROBAY 230.00
0
 #
 #
 # (206)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30900 30935  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  ARCO     230.00
0
 #
 #
 # (207)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  30900 30970  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MIDWAY   230.00
0
 #
 #
 # (208)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34123 34358  "2 "    0     # line from  K1-JCT   115.00   (2) to BRKR  KERCKHF2 115.00
1  34123 34128  "1 "    0     # line from  K1-JCT   115.00   (2) to (3)   OAKH_JCT 115.00
1  34128 34121  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (3)   SHARON T 115.00
1  34128 34126  "1 "    0     # line from  OAKH_JCT 115.00   (3) to (2)   CORSGOLD 115.00
1  34121 34105  "1 "    0     # line from  SHARON T 115.00   (3) to (2)   CERTANJ1 115.00
1  34121 34120  "1 "    0     # line from  SHARON T 115.00   (3) to (1)   SHARON   115.00
1  34105 34100  "1 "    0     # line from  CERTANJ1 115.00   (2) to BRKR  CHWCHLLA 115.00
1  34126 34122  "1 "    0     # line from  CORSGOLD 115.00   (2) to (1)   OAKHURST 115.00
4  34126     0  "1 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==2.21(0.45)
4  34126     0  "2 "    0     # LOAD-DROP    CORSGOLD 115.00  LOAD==26.19(5.32)
4  34120     0  "1 "    0     # LOAD-DROP    SHARON   115.00  LOAD==7.10(4.96)
4  34122     0  "1 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==11.68(2.37)
4  34122     0  "2 "    0     # LOAD-DROP    OAKHURST 115.00  LOAD==15.01(3.05)
0
 #
 #
 # (209)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34149 34354  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  SCHINDLR 115.00
1  34149 34148  "1 "    0     # line from  CHENYT   115.00   (3) to (2)   CHENY    115.00
1  34149 34158  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  PANOCHE  115.00
1  34148 34141  "1 "    0     # line from  CHENY    115.00   (2) to (2)   PAN2_TAP 115.00
2  34141 34142  "1 "    0     # TRAN from  PAN2_TAP 115.00   (2) to (1)   WHD_PAN2  13.80
4  34148     0  "1 "    0     # LOAD-DROP    CHENY    115.00  LOAD==13.12(2.66)
3  34142     0  "1 "    0     # GEN-DROP    WHD_PAN2  13.80  GEN==49.00(4.03)
0
 #
 #
```

```
 # (210)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34184 34570  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  COLNGA 2  70.00
1  34184 34552  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  GATES     70.00
2  34184 34553  "1 "    0     # TRAN from  GATS2_TP  70.00   (3) to (1)   WHD_GAT2  13.80
3  34553     0  "1 "    0     # GEN-DROP    WHD_GAT2  13.80  GEN==49.00(-25.30)
0
 #
 #
 # (211)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34356 34358  "1 "    0     # line from  KERCKHF1 115.00  BRKR to BRKR  KERCKHF2 115.00
0
 #
 #
 # (212)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34357 34361  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  AIRWAYS  115.00
1  34357 34368  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to (2)   LASPALMS 115.00
1  34357 34410  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  MANCHSTR 115.00
1  34368 34366  "1 "    0     # line from  LASPALMS 115.00   (2) to BRKR  SANGER   115.00
4  34368     0  "1 "    0     # LOAD-DROP    LASPALMS 115.00  LOAD==13.90(11.89)
0
 #
 #
 # (213)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34358 34360  "1 "    0     # line from  KERCKHF2 115.00  BRKR to (3)   WWARD JT 115.00
1  34360 34414  "1 "    0     # line from  WWARD JT 115.00   (3) to BRKR  WOODWARD 115.00
1  34360 34363  "1 "    0     # line from  WWARD JT 115.00   (3) to (3)   CLOVISJ1 115.00
1  34363 34362  "1 "    0     # line from  CLOVISJ1 115.00   (3) to BRKR  CLOVIS-1 115.00
1  34363 34366  "1 "    0     # line from  CLOVISJ1 115.00   (3) to BRKR  SANGER   115.00
4  34362     0  "1 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==51.01(10.36)
4  34362     0  "2 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==50.20(10.20)
1 34362  34364  "1 "    1      # Switches in Clovis SW 387 to transfer load
4 34362      0  "**"    1      # Restore Load at Clovis 1
0
 #
 #
 # (214)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34359 34361  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  AIRWAYS  115.00
1  34359 34408  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  BARTON   115.00
1  34359 34366  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  SANGER   115.00
0
 #
 #
 # (215)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34364 34365  "1 "    0     # line from  CLOVIS-2 115.00  BRKR to (3)   CLOVISJ2 115.00
1  34365 34358  "1 "    0     # line from  CLOVISJ2 115.00   (3) to BRKR  KERCKHF2 115.00
1  34365 34366  "1 "    0     # line from  CLOVISJ2 115.00   (3) to BRKR  SANGER   115.00
4  34364     0  "3 "    0     # LOAD-DROP    CLOVIS-2 115.00  LOAD==44.76(9.09)
1 34362  34364  "1 "    1      # Switches in Clovis SW 387 to transfer load
4 34364      0  "**"    1      # Restore Load at Clovis 2
0
 #
 #
 # (216)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34366 34370  "1 "    0     # line from  SANGER   115.00  BRKR to BRKR  MC CALL  115.00
0
 #
 #
 # (217)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34366 34370  "2 "    0     # line from  SANGER   115.00  BRKR to BRKR  MC CALL  115.00
0
 #
 #
 # (218)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
```

```
 #
1  34366 34370  "3 "    0     # line from  SANGER   115.00  BRKR to BRKR  MC CALL  115.00
0
 #
 #
 # (219)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34366 34372  "1 "    0     # line from  SANGER   115.00  BRKR to BRKR  MALAGA   115.00
0
 #
 #
 # (220)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34366 34389  "1 "    0     # line from  SANGER   115.00  BRKR to (3)   RAINBWTP 115.00
1  34389 34388  "1 "    0     # line from  RAINBWTP 115.00   (3) to (1)   RAINBW   115.00
1  34389 34394  "1 "    0     # line from  RAINBWTP 115.00   (3) to (3)   PIEDRA 1 115.00
1  34394 34380  "1 "    0     # line from  PIEDRA 1 115.00   (3) to BRKR  REEDLEY  115.00
1  34394 34400  "1 "    0     # line from  PIEDRA 1 115.00   (3) to BRKR  KNGSRVR1 115.00
4  34388     0  "1 "    0     # LOAD-DROP    RAINBW   115.00  LOAD==16.20(3.29)
0
 #
 #
 # (221)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34366 34396  "1 "    0     # line from  SANGER   115.00  BRKR to (2)   PIEDRA 2 115.00
1  34396 34398  "1 "    0     # line from  PIEDRA 2 115.00   (2) to (2)   BALCH    115.00
2  34398 34624  "1 "    0     # TRAN from  BALCH    115.00   (2) to (1)   BALCH 1   13.20
4  34624     0  "1 "    0     # LOAD-DROP    BALCH 1   13.20  LOAD==0.26(0.00)
3  34624     0  "1 "    0     # GEN-DROP    BALCH 1   13.20  GEN==27.00(8.33)
0
 #
 #
 # (222)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34369 34370  "1 "    0     # line from  P0418    115.00   (5) to BRKR  MC CALL  115.00
2  34369 34661  "1 "    0     # TRAN from  P0418    115.00   (5) to (1)   P0418GT1  13.80
2  34369 34663  "1 "    0     # TRAN from  P0418    115.00   (5) to (1)   P0418GT2  13.80
2  34369 34665  "1 "    0     # TRAN from  P0418    115.00   (5) to (1)   P0418GT3  13.80
2  34369 34667  "1 "    0     # TRAN from  P0418    115.00   (5) to (1)   P0418GT4  13.80
4  34661     0  "ss"    0     # LOAD-DROP    P0418GT1  13.80  LOAD==3.00(1.66)
4  34663     0  "ss"    0     # LOAD-DROP    P0418GT2  13.80  LOAD==3.00(1.66)
4  34665     0  "ss"    0     # LOAD-DROP    P0418GT3  13.80  LOAD==3.00(1.66)
4  34667     0  "ss"    0     # LOAD-DROP    P0418GT4  13.80  LOAD==3.00(1.66)
3  34661     0  "1 "    0     # GEN-DROP    P0418GT1  13.80  GEN==78.80(13.93)
3  34663     0  "2 "    0     # GEN-DROP    P0418GT2  13.80  GEN==78.80(13.93)
3  34665     0  "3 "    0     # GEN-DROP    P0418GT3  13.80  GEN==78.80(13.93)
3  34667     0  "4 "    0     # GEN-DROP    P0418GT4  13.80  GEN==78.80(13.93)
0
 #
 #
 # (223)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34370 34382  "1 "    0     # line from  MC CALL  115.00  BRKR to BRKR  WAHTOKE  115.00
0
 #
 #
 # (224)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34370 34385  "1 "    0     # line from  MC CALL  115.00  BRKR to (3)   KINGS J1 115.00
1  34385 34417  "1 "    0     # line from  KINGS J1 115.00   (3) to (2)   KINGS J2 115.00
1  34385 34425  "1 "    0     # line from  KINGS J1 115.00   (3) to (3)   KCOGNJCT 115.00
1  34417 34418  "1 "    0     # line from  KINGS J2 115.00   (2) to BRKR  KINGSBRG 115.00
1  34425 34387  "1 "    0     # line from  KCOGNJCT 115.00   (3) to (1)   SUNMAID  115.00
1  34425 34427  "1 "    0     # line from  KCOGNJCT 115.00   (3) to (2)   GRDNGLS2 115.00
1  34427 34386  "1 "    0     # line from  GRDNGLS2 115.00   (2) to (2)   KNGSCOGN 115.00
2  34386 34642  "1 "    0     # TRAN from  KNGSCOGN 115.00   (2) to BRKR  KINGSBUR   9.11
4  34387     0  "1 "    0     # LOAD-DROP    SUNMAID  115.00  LOAD==3.40(3.28)
3  34642     0  "1 "    0     # GEN-DROP    KINGSBUR   9.11  GEN==34.00(17.30)
0
 #
 #
```

```
 # (225)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34402 34404  "1 "    0     # line from  CAL AVE  115.00  BRKR to BRKR  WST FRSO 115.00
0
 #
 #
 # (226)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34372 34376  "1 "    0     # line from  MALAGA   115.00  BRKR to (1)   PPG      115.00
4  34376     0  "1 "    0     # LOAD-DROP    PPG      115.00  LOAD==6.25(3.87)
0
 #
 #
 # (227)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34372 34379  "1 "    0     # line from  MALAGA   115.00  BRKR to (3)   MALAGATP 115.00
1  34379 34373  "1 "    0     # line from  MALAGATP 115.00   (3) to (3)   SCWAXJCT 115.00
1  34379 34375  "1 "    0     # line from  MALAGATP 115.00   (3) to (3)   ULTPWRJ  115.00
1  34373 34371  "1 "    0     # line from  SCWAXJCT 115.00   (3) to (1)   SCWAX    115.00
1  34373 34374  "1 "    0     # line from  SCWAXJCT 115.00   (3) to (1)   RANCHRS  115.00
1  34375 34377  "1 "    0     # line from  ULTPWRJ  115.00   (3) to (2)   AIRPROD  115.00
2  34375 34640  "1 "    0     # TRAN from  ULTPWRJ  115.00   (3) to (1)   ULTR.PWR   9.11
1  34377 34370  "1 "    0     # line from  AIRPROD  115.00   (2) to BRKR  MC CALL  115.00
4  34371     0  "1 "    0     # LOAD-DROP    SCWAX    115.00  LOAD==2.70(1.53)
4  34374     0  "1 "    0     # LOAD-DROP    RANCHRS  115.00  LOAD==9.16(1.86)
4  34377     0  "1 "    0     # LOAD-DROP    AIRPROD  115.00  LOAD==5.10(2.02)
3  34640     0  "1 "    0     # GEN-DROP    ULTR.PWR   9.11  GEN==14.50(13.00)
0
 #
 #
 # (228)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34372 34381  "1 "    0     # line from  MALAGA   115.00  BRKR to (3)   KRCDP    115.00
2  34381 34671  "1 "    0     # TRAN from  KRCDP    115.00   (3) to (1)   KRCDPCT1  13.80
2  34381 34672  "1 "    0     # TRAN from  KRCDP    115.00   (3) to (1)   KRCDPCT2  13.80
4  34671     0  "ss"    0     # LOAD-DROP    KRCDPCT1  13.80  LOAD==1.05(0.65)
4  34672     0  "ss"    0     # LOAD-DROP    KRCDPCT2  13.80  LOAD==1.05(0.65)
3  34671     0  "1 "    0     # GEN-DROP    KRCDPCT1  13.80  GEN==50.00(7.14)
3  34672     0  "1 "    0     # GEN-DROP    KRCDPCT2  13.80  GEN==50.00(7.14)
0
 #
 #
 # (229)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34380 34384  "1 "    0     # line from  REEDLEY  115.00  BRKR to (2)   GERAWAN  115.00
1  34384 34382  "1 "    0     # line from  GERAWAN  115.00   (2) to BRKR  WAHTOKE  115.00
0
 #
 #
 # (230)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34390 34370  "1 "    0     # line from  DANISHCM 115.00   (2) to BRKR  MC CALL  115.00
1  34390 34402  "1 "    0     # line from  DANISHCM 115.00   (2) to BRKR  CAL AVE  115.00
4  34390     0  "1 "    0     # LOAD-DROP    DANISHCM 115.00  LOAD==4.10(3.51)
0
 #
 #
 # (231)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34391 34392  "1 "    0     # line from  QUEBECTP 115.00   (2) to (1)   QUEBEC   115.00
1  34391 34426  "1 "    0     # line from  QUEBECTP 115.00   (2) to BRKR  ALPAUGH  115.00
4  34392     0  "1 "    0     # LOAD-DROP    QUEBEC   115.00  LOAD==11.20(7.82)
0
 #
 #
 # (232)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34404 34370  "1 "    0     # line from  WST FRSO 115.00  BRKR to BRKR  MC CALL  115.00
0
 #
 #
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 # (233)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34408 34412  "1 "    0     # line from  BARTON   115.00  BRKR to BRKR  HERNDON  115.00
0
 #
 #
 # (234)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34409 34413  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  PNEDLE   115.00
1  34409 34416  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  BULLARD  115.00
1  34409 34412  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  HERNDON  115.00
4  34413     0  "2 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==30.74(6.25)
4  34413     0  "3 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==40.42(8.20)
1  34411 34413  "1 "    1      # Switches in Pindale CB#12 to transfer load
4  34413     0  "**"    1      # Restore load at Pindale
0
 #
 #
 # (235)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34410 34412  "1 "    0     # line from  MANCHSTR 115.00  BRKR to BRKR  HERNDON  115.00
0
 #
 #
 # (236)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34411 34416  "1 "    0     # line from  PNDLJ1   115.00   (2) to BRKR  BULLARD  115.00
1  34411 34412  "1 "    0     # line from  PNDLJ1   115.00   (2) to BRKR  HERNDON  115.00
0
 #
 #
 # (237)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34412 34422  "1 "    0     # line from  HERNDON  115.00  BRKR to (2)   CHLDHOSP 115.00
1  34422 34414  "1 "    0     # line from  CHLDHOSP 115.00   (2) to BRKR  WOODWARD 115.00
4  34422     0  "1 "    0     # LOAD-DROP    CHLDHOSP 115.00  LOAD==3.50(1.60)
0
 #
 #
 # (238)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34418 34420  "1 "    0     # line from  KINGSBRG 115.00  BRKR to BRKR  CORCORAN 115.00
0
 #
 #
 # (239)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34418 34420  "2 "    0     # line from  KINGSBRG 115.00  BRKR to BRKR  CORCORAN 115.00
0
 #
 #
 # (240)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34418 34423  "1 "    0     # line from  KINGSBRG 115.00  BRKR to (3)   GAURD J1 115.00
1  34423 34370  "1 "    0     # line from  GAURD J1 115.00   (3) to BRKR  MC CALL  115.00
1  34423 34421  "1 "    0     # line from  GAURD J1 115.00   (3) to (2)   GAURD J2 115.00
1  34421 34424  "1 "    0     # line from  GAURD J2 115.00   (2) to (1)   GRDN GLS 115.00
4  34424     0  "1 "    0     # LOAD-DROP    GRDN GLS 115.00  LOAD==3.50(1.15)
4  34418     0  "3 "    0      # Kingsburg Bank #3 will also be dropped on this outage
0
 #
 #
 # (241)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34418 34428  "1 "    0     # line from  KINGSBRG 115.00  BRKR to (2)   CONTADNA 115.00
1  34428 34429  "1 "    0     # line from  CONTADNA 115.00   (2) to (4)   GWF_HEP  115.00
1  34429 34521  "1 "    0     # line from  GWF_HEP  115.00   (4) to (2)   LEPRNOFD 115.00
2  34429 34431  "1 "    0     # TRAN from  GWF_HEP  115.00   (4) to (1)   GWF_HEP1  13.80
2  34429 34433  "1 "    0     # TRAN from  GWF_HEP  115.00   (4) to (1)   GWF_HEP2  13.80
1  34521 34430  "1 "    0     # line from  LEPRNOFD 115.00   (2) to BRKR  HENRETTA 115.00
4  34428     0  "1 "    0     # LOAD-DROP    CONTADNA 115.00  LOAD==7.60(5.70)
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4  34429     0  "ss"    0     # LOAD-DROP    GWF_HEP  115.00  LOAD==3.00(0.68)
4  34521     0  "1 "    0     # LOAD-DROP    LEPRNOFD 115.00  LOAD==6.65(4.30)
3  34431     0  "1 "    0     # GEN-DROP    GWF_HEP1  13.80  GEN==50.00(21.27)
3  34433     0  "1 "    0     # GEN-DROP    GWF_HEP2  13.80  GEN==50.00(21.27)
0
 #
 #
 # (242)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34426 34700  "1 "    0     # line from  ALPAUGH  115.00  BRKR to BRKR  SMYRNA   115.00
0
 #
 #
 # (243)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34452 34260  "1 "    0     # line from  WISHON    70.00  BRKR to (3)   SJNO2     70.00
1  34260 34259  "1 "    0     # line from  SJNO2     70.00   (3) to (3)   NRTHFORK  70.00
2  34260 34631  "1 "    0     # TRAN from  SJNO2     70.00   (3) to (1)   SJ2GEN     9.11
1  34259 34261  "1 "    0     # line from  NRTHFORK  70.00   (3) to (2)   SJNO3     70.00
2  34259 34340  "1 "    0     # TRAN from  NRTHFORK  70.00   (3) to (1)   N.FORK E   9.11
2  34261 34633  "1 "    0     # TRAN from  SJNO3     70.00   (2) to (1)   SJ3GEN     9.11
4  34260     0  "2 "    0     # LOAD-DROP    SJNO2     70.00  LOAD==3.22(0.66)
4  34261     0  "2 "    0     # LOAD-DROP    SJNO3     70.00  LOAD==6.95(1.41)
4  34340     0  "1 "    0     # LOAD-DROP    N.FORK E   9.11  LOAD==1.21(0.25)
3  34631     0  "1 "    0     # GEN-DROP    SJ2GEN     9.11  GEN==2.00(0.00)
3  34633     0  "1 "    0     # GEN-DROP    SJ3GEN     9.11  GEN==1.00(0.00)
0
 #
 #
 # (244)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34452 34491  "1 "    0     # line from  WISHON    70.00  BRKR to (3)   AUBRYTP   70.00
1  34491 34464  "1 "    0     # line from  AUBRYTP   70.00   (3) to BRKR  COPPRMNE  70.00
1  34491 34493  "1 "    0     # line from  AUBRYTP   70.00   (3) to (1)   AUBERRY   70.00
4  34493     0  "1 "    0     # LOAD-DROP    AUBERRY   70.00  LOAD==6.07(1.23)
4  34493     0  "2 "    0     # LOAD-DROP    AUBERRY   70.00  LOAD==7.15(1.45)
0
 #
 #
 # (245)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 # spring outage
1  34456 34458  "1 "    0     # line from  HRDWK TP  70.00   (3) to (1)   HARDWICK  70.00
1  34456 34522  "1 "    0     # line from  HRDWK TP  70.00   (3) to (2)   HNFRD SW  70.00
1  34456 34576  "1 "    0     # line from  HRDWK TP  70.00   (3) to BRKR  KNGLOBUS  70.00
1  34522 34518  "1 "    0     # line from  HNFRD SW  70.00   (2) to BRKR  LEMOORE   70.00
4  34458     0  "1 "    0     # LOAD-DROP    HARDWICK  70.00  LOAD==12.86(2.61)
0
 #
 #
 # (246)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34460 34462  "1 "    0     # line from  GUERNSEY  70.00  BRKR to (3)   GUR3TPT   70.00
1  34462 34542  "1 "    0     # line from  GUR3TPT   70.00   (3) to (2)   JCBSCRNR  70.00
1  34462 34554  "1 "    0     # line from  GUR3TPT   70.00   (3) to BRKR  AMSTG SW  70.00
1  34542 34540  "1 "    0     # line from  JCBSCRNR  70.00   (2) to BRKR  HENRITTA  70.00
4  34460     0  "1 "    0     # LOAD-DROP    GUERNSEY  70.00  LOAD==10.51(2.13)
4  34542     0  "1 "    0     # LOAD-DROP    JCBSCRNR  70.00  LOAD==12.05(2.45)
4  34542     0  "2 "    0     # LOAD-DROP    JCBSCRNR  70.00  LOAD==9.54(1.94)
0
 #
 #
 # (247)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34464 34478  "1 "    0     # line from  COPPRMNE  70.00  BRKR to BRKR  TVY VLLY  70.00
0
 #
 #
 # (248)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34464 34638  "1 "    0     # line from  COPPRMNE  70.00  BRKR to (2)   FRANTDM   70.00
2  34638 34636  "1 "    0     # TRAN from  FRANTDM   70.00   (2) to (1)   FRIANTDM   6.60
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3  34636     0  "2 "    0     # GEN-DROP    FRIANTDM   6.60  GEN==14.70(5.86)
3  34636     0  "3 "    0     # GEN-DROP    FRIANTDM   6.60  GEN==7.80(3.11)
3  34636     0  "4 "    0     # GEN-DROP    FRIANTDM   6.60  GEN==2.30(0.92)
0
 #
 #
 # (249)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34466 34482  "1 "    0     # line from  BIOLA     70.00  BRKR to BRKR  OLDKERN   70.00
4  34466     0  "1 "    0     # LOAD-DROP    BIOLA     70.00  LOAD==21.80(4.43)
0
 #
 #
 # (250)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34468 34482  "1 "    0     # line from  BOWLES    70.00   (1) to BRKR  OLDKERN   70.00
4  34468     0  "1 "    0     # LOAD-DROP    BOWLES    70.00  LOAD==18.29(3.72)
0
 #
 #
 # (251)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34469 34271  "1 "    0     # line from  GFFNJCT   70.00   (3) to (3)   WSTLDJCT  70.00
1  34469 34470  "1 "    0     # line from  GFFNJCT   70.00   (3) to (1)   GIFFEN    70.00
1  34469 34471  "1 "    0     # line from  GFFNJCT   70.00   (3) to (3)   SNJQJCT   70.00
1  34271 34172  "1 "    0     # line from  WSTLDJCT  70.00   (3) to (2)   WESTLAND  70.00
1  34271 34269  "1 "    0     # line from  WSTLDJCT  70.00   (3) to (3)   BIOMSJCT  70.00
1  34471 34472  "1 "    0     # line from  SNJQJCT   70.00   (3) to BRKR  SAN JOQN  70.00
1  34471 34474  "1 "    0     # line from  SNJQJCT   70.00   (3) to BRKR  HELM      70.00
1  34172 34170  "1 "    0     # line from  WESTLAND  70.00   (2) to (1)   WESIX     70.00
1  34269 34268  "1 "    0     # line from  BIOMSJCT  70.00   (3) to BRKR  MENDOTA   70.00
1  34269 34270  "1 "    0     # line from  BIOMSJCT  70.00   (3) to (2)   BIOMASS   70.00
2  34270 34334  "1 "    0     # TRAN from  BIOMASS   70.00   (2) to (1)   BIO PWR    9.11
4  34470     0  "1 "    0     # LOAD-DROP    GIFFEN    70.00  LOAD==9.59(1.95)
4  34172     0  "1 "    0     # LOAD-DROP    WESTLAND  70.00  LOAD==3.20(0.76)
4  34170     0  "1 "    0     # LOAD-DROP    WESIX     70.00  LOAD==1.60(0.38)
3  34334     0  "1 "    0     # GEN-DROP    BIO PWR    9.11  GEN==21.80(10.99)
1  34472 34473  "1 "    1      # Switches in San Joaquin CB22 to transfer load
4  34472     0  "**"    1      # Restore Load at San Joaquin
0
 #
 #
 # (252)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34473 34472  "1 "    0     # line from  SNJQTP    70.00   (2) to BRKR  SAN JOQN  70.00
1  34473 34475  "1 "    0     # line from  SNJQTP    70.00   (2) to (3)   AGRCJCT   70.00
1  34475 34476  "1 "    0     # line from  AGRCJCT   70.00   (3) to (2)   AGRICO    70.00
1  34475 34484  "1 "    0     # line from  AGRCJCT   70.00   (3) to BRKR  KERMAN    70.00
2  34476 34608  "1 "    0     # TRAN from  AGRICO    70.00   (2) to (1)   AGRICO    13.80
4  34484     0  "1 "    0     # LOAD-DROP    KERMAN    70.00  LOAD==19.44(3.95)
4  34484     0  "2 "    0     # LOAD-DROP    KERMAN    70.00  LOAD==11.78(2.39)
3  34608     0  "2 "    0     # GEN-DROP    AGRICO    13.80  GEN==7.00(1.08)
3  34608     0  "3 "    0     # GEN-DROP    AGRICO    13.80  GEN==18.10(2.80)
3  34608     0  "4 "    0     # GEN-DROP    AGRICO    13.80  GEN==26.00(4.02)
0
 #
 #
 # (253)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34474 34556  "1 "    0     # line from  HELM      70.00  BRKR to BRKR  STRD JCT  70.00
0
 #
 #
 # (254)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34478 34492  "1 "    0     # line from  TVY VLLY  70.00  BRKR to BRKR  REEDLEY   70.00
0
 #
 #
 # (255)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 # spring outage
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1  34480 34481  "1 "    0     # line from  KEARNEY   70.00  BRKR to (4)   FRWWTAP   70.00
1  34481 34483  "1 "    0     # line from  FRWWTAP   70.00   (4) to (3)   FRESNOWW  70.00
1  34481 34483  "2 "    0     # line from  FRWWTAP   70.00   (4) to (3)   FRESNOWW  70.00
1  34481 34484  "1 "    0     # line from  FRWWTAP   70.00   (4) to BRKR  KERMAN    70.00
2  34483 34485  "1 "    0     # TRAN from  FRESNOWW  70.00   (3) to (1)   FRESNOWW  12.47
4  34485     0  "1 "    0     # LOAD-DROP    FRESNOWW  12.47  LOAD==7.91(0.00)
3  34485     0  "1 "    0     # GEN-DROP    FRESNOWW  12.47  GEN==9.00(0.00)
0
 #
 #
 # (256)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34480 34482  "1 "    0     # line from  KEARNEY   70.00  BRKR to (3)   OLDKERN   70.00
1  34482 34466  "1 "    0     # line from  OLDKERN   70.00  BRKR to BRKR  BIOLA     70.00
1  34482 34468  "1 "    0     # line from  OLDKERN   70.00  BRKR to (1)   BOWLES    70.00
4  34482     0  "1 "    0     # LOAD-DROP    OLDKERN   70.00  LOAD==18.75(3.81)
4  34482     0  "3 "    0     # LOAD-DROP    OLDKERN   70.00  LOAD==7.57(1.54)
4  34466     0  "1 "    0     # LOAD-DROP    BIOLA     70.00  LOAD==21.80(4.43)
4  34468     0  "1 "    0     # LOAD-DROP    BOWLES    70.00  LOAD==18.29(3.72)
0
 #
 #
 # (257)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34480 34512  "1 "    0     # line from  KEARNEY   70.00  BRKR to BRKR  CARUTHRS  70.00
4  34512     0  "1 "    0     # LOAD-DROP    CARUTHRS  70.00  LOAD==19.63(3.98)
0
 #
 #
 # (258)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34487 34489  "1 "    0     # line from  SNGRJCT   70.00   (3) to (2)   SNGRCOGN  70.00
1  34487 34490  "1 "    0     # line from  SNGRJCT   70.00   (3) to (2)   PARLIER   70.00
1  34487 34488  "1 "    0     # line from  SNGRJCT   70.00   (3) to BRKR  SANGER    70.00
2  34489 34646  "1 "    0     # TRAN from  SNGRCOGN  70.00   (2) to (1)   SANGERCO   9.11
1  34490 34492  "1 "    0     # line from  PARLIER   70.00   (2) to BRKR  REEDLEY   70.00
4  34490     0  "1 "    0     # LOAD-DROP    PARLIER   70.00  LOAD==20.24(4.11)
3  34646     0  "1 "    0     # GEN-DROP    SANGERCO   9.11  GEN==37.50(1.40)
0
 #
 #
 # (259)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34488 34366  "1 "    0     # line from  SANGER    70.00  BRKR to BRKR  SANGER   115.00
0
 #
 #
 # (260)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34492 34497  "1 "    0     # line from  REEDLEY   70.00  BRKR to (3)   DNUBAJCT  70.00
1  34497 34499  "1 "    0     # line from  DNUBAJCT  70.00   (3) to (2)   DNUBAEGY  70.00
1  34497 34500  "1 "    0     # line from  DNUBAJCT  70.00   (3) to BRKR  DINUBA    70.00
2  34499 34648  "1 "    0     # TRAN from  DNUBAEGY  70.00   (2) to (1)   DINUBA E  13.80
4  34648     0  "ss"    0     # LOAD-DROP    DINUBA E  13.80  LOAD==0.30(0.26)
3  34648     0  "1 "    0     # GEN-DROP    DINUBA E  13.80  GEN==12.00(7.00)
0
 #
 #
 # (261)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34492 34526  "1 "    0     # line from  REEDLEY   70.00  BRKR to (3)   ORSI JCT  70.00
1  34526 34495  "1 "    0     # line from  ORSI JCT  70.00   (3) to (2)   SANDCRK   70.00
1  34526 34502  "1 "    0     # line from  ORSI JCT  70.00   (3) to BRKR  OROSI     70.00
1  34495 34494  "1 "    0     # line from  SANDCRK   70.00   (2) to (1)   DUNLAP    70.00
4  34495     0  "1 "    0     # LOAD-DROP    SANDCRK   70.00  LOAD==3.14(0.64)
4  34494     0  "1 "    0     # LOAD-DROP    DUNLAP    70.00  LOAD==4.46(0.91)
0
 #
 #
 # (262)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
```

```
1  34496 34498  "1 "    0     # line from  STCRRL J  70.00   (3) to (1)   STONCRRL  70.00
1  34496 34500  "1 "    0     # line from  STCRRL J  70.00   (3) to BRKR  DINUBA    70.00
1  34496 34502  "1 "    0     # line from  STCRRL J  70.00   (3) to (2)   OROSI     70.00
1  34502 34526  "1 "    0     # line from  OROSI     70.00  BRKR to (1)   ORSI JCT  70.00
4  34498     0  "2 "    0     # LOAD-DROP    STONCRRL  70.00  LOAD==3.37(0.68)
4  34498     0  "3 "    0     # LOAD-DROP    STONCRRL  70.00  LOAD==2.68(0.54)
4  34502     0  "1 "    0     # LOAD-DROP    OROSI     70.00  LOAD==8.38(1.70)
4  34502     0  "2 "    0     # LOAD-DROP    OROSI     70.00  LOAD==7.43(1.51)
0
 #
 #
 # (263)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 # spring outage
1  34508 34510  "1 "    0     # line from  CAMDEN    70.00   (2) to (2)   CMDN JCT  70.00
1  34508 34576  "1 "    0     # line from  CAMDEN    70.00   (2) to BRKR  KNGLOBUS  70.00
1  34510 34512  "1 "    0     # line from  CMDN JCT  70.00   (2) to BRKR  CARUTHRS  70.00
4  34508     0  "1 "    0     # LOAD-DROP    CAMDEN    70.00  LOAD==6.87(1.40)
4  34508     0  "2 "    0     # LOAD-DROP    CAMDEN    70.00  LOAD==10.90(2.22)
0
 #
 #
 # (264)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34514 34540  "1 "    0     # line from  MUSLSLGH  70.00   (1) to BRKR  HENRITTA  70.00
4  34514     0  "1 "    0     # LOAD-DROP    MUSLSLGH  70.00  LOAD==22.00(13.60)
0
 #
 #
 # (265)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34516 34520  "1 "    0     # line from  LEPRINO   70.00   (1) to (4)   LPRNO TP  70.00
1  34520 34518  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  LEMOORE   70.00
1  34520 34524  "1 "    0     # line from  LPRNO TP  70.00   (4) to (1)   CANDLEWK  70.00
1  34520 34540  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  HENRITTA  70.00
4  34516     0  "1 "    0     # LOAD-DROP    LEPRINO   70.00  LOAD==16.10(9.12)
4  34518     0  "1 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==18.86(3.83)
4  34518     0  "2 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==32.81(6.66)
0
 #
 #
 # (266)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34528 34530  "1 "    0     # line from  CORCORAN  70.00  BRKR to (3)   BSWLL TP  70.00
1  34530 34531  "1 "    0     # line from  BSWLL TP  70.00   (3) to (2)   JGBSWLL   70.00
1  34530 34538  "1 "    0     # line from  BSWLL TP  70.00   (3) to (1)   BOSWELL   70.00
1  34531 34536  "1 "    0     # line from  JGBSWLL   70.00   (2) to (1)   ANGIOLA   70.00
4  34538     0  "1 "    0     # LOAD-DROP    BOSWELL   70.00  LOAD==2.37(1.53)
4  34536     0  "1 "    0     # LOAD-DROP    ANGIOLA   70.00  LOAD==7.24(1.47)
0
 #
 #
 # (267)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34532 34554  "1 "    0     # line from  ARMSTRNG  70.00   (1) to (4)   AMSTG SW  70.00
1  34554 34462  "1 "    0     # line from  AMSTG SW  70.00  BRKR to (1)   GUR3TPT   70.00
1  34554 34534  "1 "    0     # line from  AMSTG SW  70.00   (4) to (1)   RESERVE   70.00
2  34554 34650  "1 "    0     # TRAN from  AMSTG SW  70.00  BRKR to (1)   GWF-PWR.  13.80
4  34534     0  "1 "    0     # LOAD-DROP    RESERVE   70.00  LOAD==2.03(0.41)
3  34650     0  "1 "    0     # GEN-DROP    GWF-PWR.  13.80  GEN==23.00(12.00)
0
 #
 #
 # (268)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34537 34540  "1 "    0     # line from  GWF_HENR  70.00   (3) to BRKR  HENRITTA  70.00
2  34537 34539  "1 "    0     # TRAN from  GWF_HENR  70.00   (3) to (1)   GWF_GT1   13.80
2  34537 34541  "1 "    0     # TRAN from  GWF_HENR  70.00   (3) to (1)   GWF_GT2   13.80
4  34539     0  "ss"    0     # LOAD-DROP    GWF_GT1   13.80  LOAD==1.10(0.25)
4  34541     0  "ss"    0     # LOAD-DROP    GWF_GT2   13.80  LOAD==1.10(0.25)
3  34539     0  "1 "    0     # GEN-DROP    GWF_GT1   13.80  GEN==50.00(2.92)
3  34541     0  "1 "    0     # GEN-DROP    GWF_GT2   13.80  GEN==50.00(2.92)
```

```
0
 #
 #
 # (269)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34544 34550  "1 "    0     # line from  TLRE LKE  70.00  BRKR to (2)   CHEVPLIN  70.00
1  34550 34546  "1 "    0     # line from  CHEVPLIN  70.00   (2) to (2)   AVENAL    70.00
1  34546 34548  "1 "    0     # line from  AVENAL    70.00   (2) to BRKR  KETTLEMN  70.00
4  34544     0  "1 "    0     # LOAD-DROP    TLRE LKE  70.00  LOAD==6.79(1.38)
4  34550     0  "1 "    0     # LOAD-DROP    CHEVPLIN  70.00  LOAD==1.01(0.73)
4  34546     0  "1 "    0     # LOAD-DROP    AVENAL    70.00  LOAD==7.72(1.57)
0
 #
 #
 # (270)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34548 34552  "1 "    0     # line from  KETTLEMN  70.00   (2) to BRKR  GATES     70.00
1  34548 34546  "1 "    0     # line from  KETTLEMN  70.00  BRKR to (1)   AVENAL    70.00
4  34548     0  "1 "    0     # LOAD-DROP    KETTLEMN  70.00  LOAD==6.32(1.29)
0
 #
 #
 # (271)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34552 34558  "1 "    0     # line from  GATES     70.00  BRKR to BRKR  HURON     70.00
0
 #
 #
 # (272)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34552 34558  "2 "    0     # line from  GATES     70.00  BRKR to BRKR  HURON     70.00
0
 #
 #
 # (273)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34552 34578  "1 "    0     # line from  GATES     70.00  BRKR to (2)   JACALITO  70.00
1  34578 34574  "1 "    0     # line from  JACALITO  70.00   (2) to BRKR  COLNGA 1  70.00
4  34578     0  "1 "    0     # LOAD-DROP    JACALITO  70.00  LOAD==4.45(2.99)
0
 #
 #
 # (274)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34556 34562  "1 "    0     # line from  STRD JCT  70.00  BRKR to BRKR  SCHLNDLR  70.00
0
 #
 #
 # (275)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34556 34564  "1 "    0     # line from  STRD JCT  70.00   (3) to BRKR  STROUD    70.00
1  34556 34474  "1 "    0     # line from  STRD JCT  70.00  BRKR to BRKR  HELM      70.00
1  34556 34562  "1 "    0     # line from  STRD JCT  70.00  BRKR to BRKR  SCHLNDLR  70.00
4  34564     0  "1 "    0     # LOAD-DROP    STROUD    70.00  LOAD==13.09(2.66)
0
 #
 #
 # (276)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34558 34560  "1 "    0     # line from  HURON     70.00  BRKR to (2)   CALFLAX   70.00
1  34560 34562  "1 "    0     # line from  CALFLAX   70.00   (2) to BRKR  SCHLNDLR  70.00
4  34560     0  "1 "    0     # LOAD-DROP    CALFLAX   70.00  LOAD==6.53(1.33)
1  34552 34558  "2 "    0      # Must include Gates - Huron in this outage
0
 #
 #
 # (277)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
 #
1  34562 34566  "1 "    0     # line from  SCHLNDLR  70.00  BRKR to (2)   PLSNTVLY  70.00
1  34566 34570  "1 "    0     # line from  PLSNTVLY  70.00   (2) to BRKR  COLNGA 2  70.00
4  34566     0  "1 "    0     # LOAD-DROP    PLSNTVLY  70.00  LOAD==10.00(2.51)
```

```
 0
  #
  #
  # (278)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  34570 34572  "1 "    0     # line from  COLNGA 2  70.00  BRKR to (3)   TORNADO   70.00
 1  34572 34574  "1 "    0     # line from  TORNADO   70.00   (3) to BRKR  COLNGA 1  70.00
 2  34572 34654  "1 "    0     # TRAN from  TORNADO   70.00   (3) to (1)   COLNGAGN   9.11
 4  34572     0  "1 "    0     # LOAD-DROP    TORNADO   70.00  LOAD==1.74(1.44)
 3  34654     0  "1 "    0     # GEN-DROP    COLNGAGN   9.11  GEN==34.00(5.40)
 2  34570 34652  "1 "    0      # Must include Colinga2 - Chv.coal in this outage - modeled on
bus,
 3  34652     0  "**"    0      # Drops units on Derrick Sub
 4  34652     0  "**"    0      # Drops load at Derrick Sub
 0
  #
  #
  # (279)  B2 LINE OUTAGE (BREAKER-TO-BREAKER)
  #
 1  36354 34574  "1 "    0     # line from  SAN MIGL  70.00  BRKR to BRKR  COLNGA 1  70.00
 0
  #
  #
  # (280)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30835  (30882)  34412  34630 :
 2  30835 34412  "1 "    0     # TRAN from  HERNDON  230.00  BRKR to (1)   HERNDON  115.00
 0
  #
  #
  # (281)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30835  (30883)  34412  34632 :
 2  30835 34412  "2 "    0     # TRAN from  HERNDON  230.00  BRKR to (1)   HERNDON  115.00
 0
  #
  #
  # (282)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30875  (30876)  34370  34618 :
 2  30875 34370  "1 "    0     # TRAN from  MC CALL  230.00  BRKR to (1)   MC CALL  115.00
 0
  #
  #
  # (283)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30875  (30877)  34370  34620 :
 2  30875 34370  "2 "    0     # TRAN from  MC CALL  230.00  BRKR to (1)   MC CALL  115.00
 0
  #
  #
  # (284)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30875  (30878)  34370  34621 :
 2  30875 34370  "3 "    0     # TRAN from  MC CALL  230.00  BRKR to (1)   MC CALL  115.00
 0
  #
  #
  # (285)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
 2  30881 34430  "3 "    0     # TRAN from  HENRIETA 230.00  BRKR to BRKR  HENRETTA 115.00
 0
  #
  #
  # (286)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
  #
#      **** 3-WINDING TRANSFORMER  30900  (34607)  30055  34606 :
 2  30900 30055  "11"    0     # TRAN from  GATES    230.00  BRKR to (1)   GATES    500.00
 0
  #
  #
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 # (287)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  30900 30901  "1 "    0     # TRAN from  GATES    230.00  BRKR to (3)   GATES 1M 230.00
2  30901 34378  "1 "    0     # TRAN from  GATES 1M 230.00   (3) to BRKR  GATES    115.00
2  30901 34622  "1 "    0     # TRAN from  GATES 1M 230.00   (3) to (1)   GATES 1T  13.20
4 34378      0  "3 "    0      # Drop Gates Bank #3
0
 #
 #
 # (288)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34356 34344  "1 "    0     # TRAN from  KERCKHF1 115.00  BRKR to (1)   KERCKHOF   6.60
4  34344     0  "4 "    0     # LOAD-DROP    KERCKHOF   6.60  LOAD==3.24(0.66)
3  34344     0  "2 "    0     # GEN-DROP    KERCKHOF   6.60  GEN==6.80(-4.00)
0
 #
 #
 # (289)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34366 34590  "1 "    0     # TRAN from  SANGER   115.00  BRKR to (2)   SANGR3T  115.00
2  34590 34488  "1 "    0     # TRAN from  SANGR3T  115.00   (2) to BRKR  SANGER    70.00
4  34590     0  "3 "    0     # LOAD-DROP    SANGR3T  115.00  LOAD==20.55(4.17)
0
 #
 #
 # (290)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34418 34576  "2 "    0     # TRAN from  KINGSBRG 115.00  BRKR to BRKR  KNGLOBUS  70.00
0
 #
 #
 # (291)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34474 30873  "1 "    0     # TRAN from  HELM      70.00  BRKR to BRKR  HELM     230.00
0
 #
 #
 # (292)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34480 30830  "2 "    0     # TRAN from  KEARNEY   70.00  BRKR to BRKR  KEARNEY  230.00
0
 #
 #
 # (293)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34492 34380  "1 "    0     # TRAN from  REEDLEY   70.00  BRKR to BRKR  REEDLEY  115.00
0
 #
 #
 # (294)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34492 34380  "2 "    0     # TRAN from  REEDLEY   70.00  BRKR to BRKR  REEDLEY  115.00
0
 #
 #
 # (295)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34528 34420  "2 "    0     # TRAN from  CORCORAN  70.00  BRKR to BRKR  CORCORAN 115.00
1  34420 34391  "1 "    0      # Must include Corcoran - Quebec   (Corcoran CB 142) in this
outage
1  34420 34418  "2 "    0      # Must include Corcoran - Kingburg (Corcoran CB 162) in this
outage
1  34528 34460  "1 "    0      # Must include Corcorna - Guernsey (Corcoran CB  42) in this
outage
0
 #
 #
 # (296)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34540 30881  "2 "    0     # TRAN from  HENRITTA  70.00  BRKR to BRKR  HENRIETA 230.00
0
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 #
 #
 # (297)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34540 30881  "4 "    0     # TRAN from  HENRITTA  70.00  BRKR to BRKR  HENRIETA 230.00
0
 #
 #
 # (298)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34552 34378  "2 "    0     # TRAN from  GATES     70.00  BRKR to BRKR  GATES    115.00
0
 #
 #
 # (299)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34562 34354  "1 "    0     # TRAN from  SCHLNDLR  70.00  BRKR to (3)   SCHINDLR 115.00
1  34354 34149  "1 "    0     # line from  SCHINDLR 115.00  BRKR to (1)   CHENYT   115.00
1  34354 34432  "1 "    0     # line from  SCHINDLR 115.00  BRKR to (1)   WESTLNDS 115.00
4  34354     0  "1 "    0     # LOAD-DROP    SCHINDLR 115.00  LOAD==11.22(2.28)
0
 #
 #
 # (300)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34605 30829  "1 "    0     # TRAN from  BULRD_EC  13.80   (1) to BRKR  BULRD_EC 230.00
4  34605     0  "ss"    0     # LOAD-DROP    BULRD_EC  13.80  LOAD==5.20(2.88)
3  34605     0  "1 "    0     # GEN-DROP    BULRD_EC  13.80  GEN==102.60(16.00)
3  34605     0  "2 "    0     # GEN-DROP    BULRD_EC  13.80  GEN==102.60(16.00)
0
 #
 #
 # (301)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34652 34570  "1 "    0     # TRAN from  CHV.COAL   9.11   (1) to BRKR  COLNGA 2  70.00
4  34652     0  "S1"    0     # LOAD-DROP    CHV.COAL   9.11  LOAD==5.12(2.48)
4  34652     0  "SG"    0     # LOAD-DROP    CHV.COAL   9.11  LOAD==0.94(0.46)
3  34652     0  "1 "    0     # GEN-DROP    CHV.COAL   9.11  GEN==2.50(8.30)
3  34652     0  "2 "    0     # GEN-DROP    CHV.COAL   9.11  GEN==8.00(4.00)
0
 #
 #
 # (302)  B3 TRANSFORMER OUTAGE (BREAKER-TO-BREAKER)
 #
2  34658 34452  "1 "    0     # TRAN from  WISHON     2.30   (1) to BRKR  WISHON    70.00
3  34658     0  "3 "    0     # GEN-DROP    WISHON     2.30  GEN==4.50(1.00)
3  34658     0  "4 "    0     # GEN-DROP    WISHON     2.30  GEN==4.50(1.00)
0
 #
 #
 # (303)  B1 GENERATOR OUTAGE
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (304)  B1 GENERATOR OUTAGE
 #
3  34344     0  "2"     0     # KERCKHOF   6.60       PGEN=6.80  QGEN=-4.00
0
 #
 #
 # (305)  B1 GENERATOR OUTAGE
 #
3  34431     0  "1"     0     # GWF_HEP1  13.80       PGEN=50.00  QGEN=21.57
0
 #
 #
 # (306)  B1 GENERATOR OUTAGE
 #
3  34433     0  "1"     0     # GWF_HEP2  13.80       PGEN=50.00  QGEN=21.57
```

```
0
 #
 #
 # (307)  B1 GENERATOR OUTAGE
 #
3  34485     0  "1"     0     # FRESNOWW  12.47       PGEN=9.00  QGEN=0.00
0
 #
 #
 # (308)  B1 GENERATOR OUTAGE
 #
3  34539     0  "1"     0     # GWF_GT1   13.80       PGEN=50.00  QGEN=1.23
0
 #
 #
 # (309)  B1 GENERATOR OUTAGE
 #
3  34541     0  "1"     0     # GWF_GT2   13.80       PGEN=50.00  QGEN=1.23
0
 #
 #
 # (310)  B1 GENERATOR OUTAGE
 #
3  34553     0  "1"     0     # WHD_GAT2  13.80       PGEN=49.00  QGEN=-25.30
0
 #
 #
 # (311)  B1 GENERATOR OUTAGE
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (312)  B1 GENERATOR OUTAGE
 #
3  34602     0  "1"     0     # HELMS 2   18.00       PGEN=404.00  QGEN=66.06
0
 #
 #
 # (313)  B1 GENERATOR OUTAGE
 #
3  34604     0  "1"     0     # HELMS 3   18.00       PGEN=404.00  QGEN=66.12
0
 #
 #
 # (314)  B1 GENERATOR OUTAGE
 #
3  34605     0  "1"     0     # BULRD_EC  13.80       PGEN=102.60  QGEN=30.12
0
 #
 #
 # (315)  B1 GENERATOR OUTAGE
 #
3  34605     0  "2"     0     # BULRD_EC  13.80       PGEN=102.60  QGEN=30.12
0
 #
 #
 # (316)  B1 GENERATOR OUTAGE
 #
3  34608     0  "2"     0     # AGRICO    13.80       PGEN=7.00  QGEN=1.64
0
 #
 #
 # (317)  B1 GENERATOR OUTAGE
 #
3  34608     0  "3"     0     # AGRICO    13.80       PGEN=18.10  QGEN=4.24
0
 #
 #
 # (318)  B1 GENERATOR OUTAGE
 #
```

```
3  34608     0  "4"     0     # AGRICO    13.80       PGEN=26.00  QGEN=6.09
0
 #
 #
 # (319)  B1 GENERATOR OUTAGE
 #
3  34610     0  "1"     0     # HAAS      13.80       PGEN=70.00  QGEN=18.75
0
 #
 #
 # (320)  B1 GENERATOR OUTAGE
 #
3  34610     0  "2"     0     # HAAS      13.80       PGEN=70.00  QGEN=18.75
0
 #
 #
 # (321)  B1 GENERATOR OUTAGE
 #
3  34612     0  "1"     0     # BLCH 2-2  13.80       PGEN=50.00  QGEN=9.61
0
 #
 #
 # (322)  B1 GENERATOR OUTAGE
 #
3  34614     0  "1"     0     # BLCH 2-3  13.80       PGEN=50.00  QGEN=13.00
0
 #
 #
 # (323)  B1 GENERATOR OUTAGE
 #
3  34616     0  "1"     0     # KINGSRIV  13.80       PGEN=47.00  QGEN=9.00
0
 #
 #
 # (324)  B1 GENERATOR OUTAGE
 #
3  34618     0  "1"     0     # MCCALL1T  13.20       PGEN=0.00  QGEN=36.40
0
 #
 #
 # (325)  B1 GENERATOR OUTAGE
 #
3  34621     0  "1"     0     # MCCALL3T  13.20       PGEN=0.00  QGEN=4.85
0
 #
 #
 # (326)  B1 GENERATOR OUTAGE
 #
3  34624     0  "1"     0     # BALCH 1   13.20       PGEN=27.00  QGEN=10.00
0
 #
 #
 # (327)  B1 GENERATOR OUTAGE
 #
3  34630     0  "1"     0     # HERNDN1T  13.20       PGEN=0.00  QGEN=20.26
0
 #
 #
 # (328)  B1 GENERATOR OUTAGE
 #
3  34632     0  "1"     0     # HERNDN2T  13.20       PGEN=0.00  QGEN=32.58
0
 #
 #
 # (329)  B1 GENERATOR OUTAGE
 #
3  34636     0  "2"     0     # FRIANTDM   6.60       PGEN=14.70  QGEN=6.14
0
 #
 #
 # (330)  B1 GENERATOR OUTAGE
```

```
 #
3  34636     0  "3"     0     # FRIANTDM   6.60       PGEN=7.80  QGEN=3.26
0
 #
 #
 # (331)  B1 GENERATOR OUTAGE
 #
3  34636     0  "4"     0     # FRIANTDM   6.60       PGEN=2.30  QGEN=0.96
0
 #
 #
 # (332)  B1 GENERATOR OUTAGE
 #
3  34640     0  "1"     0     # ULTR.PWR   9.11       PGEN=14.50  QGEN=13.00
0
 #
 #
 # (333)  B1 GENERATOR OUTAGE
 #
3  34642     0  "1"     0     # KINGSBUR   9.11       PGEN=34.00  QGEN=17.30
0
 #
 #
 # (334)  B1 GENERATOR OUTAGE
 #
3  34646     0  "1"     0     # SANGERCO   9.11       PGEN=37.50  QGEN=4.31
0
 #
 #
 # (335)  B1 GENERATOR OUTAGE
 #
3  34648     0  "1"     0     # DINUBA E  13.80       PGEN=12.00  QGEN=7.00
0
 #
 #
 # (336)  B1 GENERATOR OUTAGE
 #
3  34650     0  "1"     0     # GWF-PWR.  13.80       PGEN=23.00  QGEN=12.00
0
 #
 #
 # (337)  B1 GENERATOR OUTAGE
 #
3  34652     0  "1"     0     # CHV.COAL   9.11       PGEN=2.50  QGEN=8.30
0
 #
 #
 # (338)  B1 GENERATOR OUTAGE
 #
3  34652     0  "2"     0     # CHV.COAL   9.11       PGEN=8.00  QGEN=4.00
0
 #
 #
 # (339)  B1 GENERATOR OUTAGE
 #
3  34654     0  "1"     0     # COLNGAGN   9.11       PGEN=34.00  QGEN=-3.48
0
 #
 #
 # (340)  B1 GENERATOR OUTAGE
 #
3  34658     0  "3"     0     # WISHON     2.30       PGEN=4.50  QGEN=1.00
0
 #
 #
 # (341)  B1 GENERATOR OUTAGE
 #
3  34658     0  "4"     0     # WISHON     2.30       PGEN=4.50  QGEN=1.00
0
 #
 #
```

```
 # (342)  B1 GENERATOR OUTAGE
 #
3  34671     0  "1"     0     # KRCDPCT1  13.80       PGEN=50.00  QGEN=10.75
0
 #
 #
 # (343)  B1 GENERATOR OUTAGE
 #
3  34672     0  "1"     0     # KRCDPCT2  13.80       PGEN=50.00  QGEN=10.75
0
 #
 #
 # (344)  B1 GENERATOR OUTAGE
 #
3  38720     0  "1"     0     # PINE FLT  13.80       PGEN=57.00  QGEN=23.30
0
 #
 #
 # (345)  B1 GENERATOR OUTAGE
 #
3  34661     0  "1"     0     # P0418GT1  13.80       PGEN=78.80  QGEN=13.93
0
 #
 #
 # (346)  B1 GENERATOR OUTAGE
 #
3  34663     0  "2"     0     # P0418GT2  13.80       PGEN=78.80  QGEN=13.93
0
 #
 #
 # (347)  B1 GENERATOR OUTAGE
 #
3  34665     0  "3"     0     # P0418GT3  13.80       PGEN=78.80  QGEN=13.93
0
 #
 #
 # (348)  B1 GENERATOR OUTAGE
 #
3  34667     0  "4"     0     # P0418GT4  13.80       PGEN=78.80  QGEN=13.93
0
 #
 #
 # (349)  B1 GENERATOR OUTAGE
 #
3  34685     0  "1"     0     # P0615CT1  16.50       PGEN=192.00  QGEN=35.45
0
 #
 #
 # (350)  B1 GENERATOR OUTAGE
 #
3  34686     0  "1"     0     # P0615CT2  16.50       PGEN=192.00  QGEN=35.45
0
 #
 #
 # (351)  B1 GENERATOR OUTAGE
 #
3  34687     0  "1"     0     # P0615STG  16.50       PGEN=193.00  QGEN=35.57
0
 #
 #
 # (352)  B1 GENERATOR OUTAGE
 #
3  34688     0  "1"     0     # Q254CTG1  18.00       PGEN=172.40  QGEN=41.25
0
 #
 #
 # (353)  B1 GENERATOR OUTAGE
 #
3  34689     0  "2"     0     # Q254CTG2  18.00       PGEN=172.40  QGEN=41.25
0
 #
```

```
 #
 # (354)  B1 GENERATOR OUTAGE
 #
3  34690     0  "3"     0     # Q254STG1  18.00       PGEN=290.80  QGEN=67.53
0
 #
 #
 # (355)  L-1/G-1 OVERLAPPING OUTAGE
 # Smyrna - Semitropic - Midway 115 kV Line and Exchequer
1  34700 34708  "1 "    0     # line from  SMYRNA   115.00  BRKR to (2)   MCKIBBEN 115.00
1  34708 34742  "1 "    0     # line from  MCKIBBEN 115.00   (2) to (2)   SEMITRPJ 115.00
1  34742 34746  "1 "    0     # line from  SEMITRPJ 115.00   (2) to (2)   GANSO    115.00
1  34746 34774  "1 "    0     # line from  GANSO    115.00   (2) to BRKR  MIDWAY   115.00
4  34746     0  "1 "    0     # LOAD-DROP    GANSO    115.00  LOAD==5.34(1.22)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=89.95  QGEN=18.49
0
 #
 #
 # (356)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Coalinga #2 70 kV Line and Chevron Coalinga Unit 1
1  34184 34570  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  COLNGA 2  70.00
1  34184 34552  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  GATES     70.00
2  34184 34553  "1 "    0     # TRAN from  GATS2_TP  70.00   (3) to (1)   WHD_GAT2  13.80
3  34553     0  "1 "    0     # GEN-DROP    WHD_GAT2  13.80  GEN==49.00(-25.30)
 #
3  34652     0  "1"     0     # CHV.COAL   9.11       PGEN=17.00  QGEN=8.30
0
 #
 #
 # (357)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Coalinga #1 70 kV Line and Chevron Coalinga Unit 1
1  34552 34578  "1 "    0     # line from  GATES     70.00  BRKR to (2)   JACALITO  70.00
1  34578 34574  "1 "    0     # line from  JACALITO  70.00   (2) to BRKR  COLNGA 1  70.00
4  34578     0  "1 "    0     # LOAD-DROP    JACALITO  70.00  LOAD==4.03(2.5) 0
 #
3  34652     0  "1"     0     # CHV.COAL   9.11       PGEN=17.00  QGEN=8.30
0
 #
 #
 # (358)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Coalinga #2 70 kV Line and Coalinga Cogen
1  34184 34570  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  COLNGA 2  70.00
1  34184 34552  "1 "    0     # line from  GATS2_TP  70.00   (3) to BRKR  GATES     70.00
2  34184 34553  "1 "    0     # TRAN from  GATS2_TP  70.00   (3) to (1)   WHD_GAT2  13.80
3  34553     0  "1 "    0     # GEN-DROP    WHD_GAT2  13.80  GEN==49.00(-25.30)
 #
3  34654     0  "1"     0     # COLNGAGN   9.11       PGEN=34.22  QGEN=-13.50
0
 #
 #
 # (359)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Coalinga #1 70 kV Line and Coalinga Cogen
1  34552 34578  "1 "    0     # line from  GATES     70.00  BRKR to (2)   JACALITO  70.00
1  34578 34574  "1 "    0     # line from  JACALITO  70.00   (2) to BRKR  COLNGA 1  70.00
4  34578     0  "1 "    0     # LOAD-DROP    JACALITO  70.00  LOAD==4.03(2.5) 0
 #
3  34654     0  "1"     0     # COLNGAGN   9.11       PGEN=34.22  QGEN=-13.50
0
 #
 #
 # (360)  L-1/G-1 OVERLAPPING OUTAGE
 # Borden - Coppermine 70 kV Line and Friant PP Unit 2
1  34262 34454  "1 "    0     # line from  CASSIDY   70.00   (2) to (2)   RIVERROC  70.00
1  34262 34256  "1 "    0     # line from  CASSIDY   70.00   (2) to BRKR  BORDEN    70.00
1  34454 34464  "1 "    0     # line from  RIVERROC  70.00   (2) to BRKR  COPPRMNE  70.00
4  34262     0  "1 "    0     # LOAD-DROP    CASSIDY   70.00  LOAD==14.31(2.90)
4  34454     0  "1 "    0     # LOAD-DROP    RIVERROC  70.00  LOAD==2.01(1.83)
 #
3  34636     0  "2"     0     # FRIANTDM   6.60       PGEN=14.70  QGEN=6.14
0
```

```
 #
 #
 # (361)  L-1/G-1 OVERLAPPING OUTAGE
 # Henrietta - Lemoore 70 kV Line and GWF Hanford
1  34516 34520  "1 "    0     # line from  LEPRINO   70.00   (1) to (4)   LPRNO TP  70.00
1  34520 34518  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  LEMOORE   70.00
1  34520 34524  "1 "    0     # line from  LPRNO TP  70.00   (4) to (1)   CANDLEWK  70.00
1  34520 34540  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  HENRITTA  70.00
4  34516     0  "1 "    0     # LOAD-DROP    LEPRINO   70.00  LOAD==16.10(9.12)
4  34518     0  "1 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==18.86(3.83)
4  34518     0  "2 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==32.81(6.66)
 #
3  34650     0  "1"     0     # GWF-PWR.  13.80       PGEN=23.00  QGEN=12.00
0
 #
 #
 # (362)  L-1/G-1 OVERLAPPING OUTAGE
 # Henrietta - Lemoore 70 kV Line and GWF Henrietta Unit 1
1  34516 34520  "1 "    0     # line from  LEPRINO   70.00   (1) to (4)   LPRNO TP  70.00
1  34520 34518  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  LEMOORE   70.00
1  34520 34524  "1 "    0     # line from  LPRNO TP  70.00   (4) to (1)   CANDLEWK  70.00
1  34520 34540  "1 "    0     # line from  LPRNO TP  70.00   (4) to BRKR  HENRITTA  70.00
4  34516     0  "1 "    0     # LOAD-DROP    LEPRINO   70.00  LOAD==16.10(9.12)
4  34518     0  "1 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==18.86(3.83)
4  34518     0  "2 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==32.81(6.66)
 #
3  34539     0  "1"     0     # GWF_GT1   13.80       PGEN=50.00  QGEN=1.23
0
 #
 #
 # (363)  L-1/G-1 OVERLAPPING OUTAGE
 # McCall - Wahtoke 115 kV Line and Sanger Cogen
1  34370 34382  "1 "    0     # line from  MC CALL  115.00  BRKR to BRKR  WAHTOKE  115.00
 #
3  34646     0  "1"     0     # SANGERCO   9.11       PGEN=37.50  QGEN=4.31
0
 #
 #
 # (364)  L-1/G-1 OVERLAPPING OUTAGE
 # McCall - Wahtoke 115 kV Line and Kings River Power House
1  34370 34382  "1 "    0     # line from  MC CALL  115.00  BRKR to BRKR  WAHTOKE  115.00
 #
3  34616     0  "1"     0     # KINGSRIV  13.80       PGEN=47.00  QGEN=9.00
0
 #
 #
 # (365)  L-1/G-1 OVERLAPPING OUTAGE
 # Helm - McCall 230 kV Line and Exchequer
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (366)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #1 230 kV Line and Exchequer
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (367)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #2 230 kV Line and Exchequer
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
```

```
 #
 # (368)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #1 230 kV Line and Exchequer
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (369)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #2 230 kV Line and Exchequer
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (370)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Ashlan 230 kV Line and Exchequer
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (371)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Gregg 230 kV Line and Exchequer
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (372)  L-1/G-1 OVERLAPPING OUTAGE
 # Bullard EC - Kearney 230 kV Line and Exchequer
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (373)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Bullard EC 230 kV Line and Exchequer
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (374)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Ashlan 230 kV Line and Exchequer
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
 #
```

```
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (375)  L-1/G-1 OVERLAPPING OUTAGE
 # Haas - McCall 230 kV Line and Exchequer
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (376)  L-1/G-1 OVERLAPPING OUTAGE
 # Balch - McCall 230 kV Line and Exchequer
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (377)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - McCall 230 kV Line and Exchequer
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (378)  L-1/G-1 OVERLAPPING OUTAGE
 # Templeton - Gates 230 kV Line and Exchequer
1  30900 30905  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  TEMPLETN 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (379)  L-1/G-1 OVERLAPPING OUTAGE
 # Morro Bay - Gates 230 kV Line and Exchequer
1  30900 30915  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MORROBAY 230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (380)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Arco 230 kV Line and Exchequer
1  30900 30935  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  ARCO     230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
 #
 # (381)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Midway 230 kV Line and Exchequer
1  30900 30970  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MIDWAY   230.00
 #
3  34306     0  "1"     0     # EXCHQUER  13.80       PGEN=94.50  QGEN=8.77
0
 #
```

```
 #
 # (382)  L-1/G-1 OVERLAPPING OUTAGE
 # Helm - McCall 230 kV Line and Kerckhoff
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (383)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #1 230 kV Line and Kerckhoff
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (384)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #2 230 kV Line and Kerckhoff
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (385)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #1 230 kV Line and Kerckhoff
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (386)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #2 230 kV Line and Kerckhoff
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (387)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Ashlan 230 kV Line and Kerckhoff
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (388)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Gregg 230 kV Line and Kerckhoff
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
```

```
 #
 # (389)  L-1/G-1 OVERLAPPING OUTAGE
 # Bullard EC - Kearney 230 kV Line and Kerckhoff
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (390)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Bullard EC 230 kV Line and Kerckhoff
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (391)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Ashlan 230 kV Line and Kerckhoff
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (392)  L-1/G-1 OVERLAPPING OUTAGE
 # Haas - McCall 230 kV Line and Kerckhoff
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (393)  L-1/G-1 OVERLAPPING OUTAGE
 # Balch - McCall 230 kV Line and Kerckhoff
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (394)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - McCall 230 kV Line and Kerckhoff
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (395)  L-1/G-1 OVERLAPPING OUTAGE
 # Templeton - Gates 230 kV Line and Kerckhoff
1  30900 30905  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  TEMPLETN 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
```

```
0
 #
 #
 # (396)  L-1/G-1 OVERLAPPING OUTAGE
 # Morro Bay - Gates 230 kV Line and Kerckhoff
1  30900 30915  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MORROBAY 230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (397)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Arco 230 kV Line and Kerckhoff
1  30900 30935  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  ARCO     230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (398)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Midway 230 kV Line and Kerckhoff
1  30900 30970  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MIDWAY   230.00
 #
3  34308     0  "1"     0     # KERCKHOF  13.80       PGEN=129.00  QGEN=16.00
0
 #
 #
 # (399)  L-1/G-1 OVERLAPPING OUTAGE
 # Helm - McCall 230 kV Line and Helms Unit 1
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (400)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #1 230 kV Line and Helms Unit 1
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (401)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #2 230 kV Line and Helms Unit 1
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (402)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #1 230 kV Line and Helms Unit 1
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (403)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #2 230 kV Line and Helms Unit 1
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
```

```
 # (404)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Ashlan 230 kV Line and Helms Unit 1
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (405)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Gregg 230 kV Line and Helms Unit 1
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (406)  L-1/G-1 OVERLAPPING OUTAGE
 # Bullard EC - Kearney 230 kV Line and Helms Unit 1
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (407)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Bullard EC 230 kV Line and Helms Unit 1
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (408)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Ashlan 230 kV Line and Helms Unit 1
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (409)  L-1/G-1 OVERLAPPING OUTAGE
 # Haas - McCall 230 kV Line and Helms Unit 1
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (410)  L-1/G-1 OVERLAPPING OUTAGE
```

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 # Balch - McCall 230 kV Line and Helms Unit 1
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (411)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - McCall 230 kV Line and Helms Unit 1
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (412)  L-1/G-1 OVERLAPPING OUTAGE
 # Templeton - Gates 230 kV Line and Helms Unit 1
1  30900 30905  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  TEMPLETN 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (413)  L-1/G-1 OVERLAPPING OUTAGE
 # Morro Bay - Gates 230 kV Line and Helms Unit 1
1  30900 30915  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MORROBAY 230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (414)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Arco 230 kV Line and Helms Unit 1
1  30900 30935  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  ARCO     230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (415)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Midway 230 kV Line and Helms Unit 1
1  30900 30970  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MIDWAY   230.00
 #
3  34600     0  "1"     0     # HELMS 1   18.00       PGEN=404.00  QGEN=66.02
0
 #
 #
 # (416)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Kearney 230 kV Line and Melones Unit 1
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (417)  L-1/G-1 OVERLAPPING OUTAGE
 # Panoche - Helm 230 kV Line and Melones Unit 1
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
```

```
 # (418)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #1 230 kV Line and Melones Unit 1
1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (419)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Panoche #2 230 kV Line and Melones Unit 1
1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (420)  L-1/G-1 OVERLAPPING OUTAGE
 # Helm - McCall 230 kV Line and Melones Unit 1
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (421)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #1 230 kV Line and Melones Unit 1
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (422)  L-1/G-1 OVERLAPPING OUTAGE
 # Helms - Gregg #2 230 kV Line and Melones Unit 1
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (423)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #1 230 kV Line and Melones Unit 1
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (424)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Herndon #2 230 kV Line and Melones Unit 1
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (425)  L-1/G-1 OVERLAPPING OUTAGE
 # Gregg - Ashlan 230 kV Line and Melones Unit 1
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
 #
```

```
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (426)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Gregg 230 kV Line and Melones Unit 1
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (427)  L-1/G-1 OVERLAPPING OUTAGE
 # Bullard EC - Kearney 230 kV Line and Melones Unit 1
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (428)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Bullard EC 230 kV Line and Melones Unit 1
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (429)  L-1/G-1 OVERLAPPING OUTAGE
 # Herndon - Ashlan 230 kV Line and Melones Unit 1
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (430)  L-1/G-1 OVERLAPPING OUTAGE
 # Haas - McCall 230 kV Line and Melones Unit 1
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (431)  L-1/G-1 OVERLAPPING OUTAGE
 # Balch - McCall 230 kV Line and Melones Unit 1
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
```

```
 #
 # (432)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - McCall 230 kV Line and Melones Unit 1
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (433)  L-1/G-1 OVERLAPPING OUTAGE
 # Templeton - Gates 230 kV Line and Melones Unit 1
1  30900 30905  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  TEMPLETN 230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (434)  L-1/G-1 OVERLAPPING OUTAGE
 # Morro Bay - Gates 230 kV Line and Melones Unit 1
1  30900 30915  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MORROBAY 230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (435)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Arco 230 kV Line and Melones Unit 1
1  30900 30935  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  ARCO     230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
 # (436)  L-1/G-1 OVERLAPPING OUTAGE
 # Gates - Midway 230 kV Line and Melones Unit 1
1  30900 30970  "1 "    0     # line from  GATES    230.00  BRKR to BRKR  MIDWAY   230.00
 #
3  37561     0  "1"     0     # MELONE1   13.80       PGEN=119.00  QGEN=60.00
0
 #
 #
-1
 # EOF
```

Category C Contingnecies

```
# Q254 2015 sprpk category c contingency list (dctl and bus outages)
# Yosemite and Fresno Divisions Zones 313 and 314
#
  # 2013 sprpk category c contingency list
  # Yosemite Zone 313
  #
  #
  # (1)   C5 DCTL OUTAGE
  # Wilson - Atwater and El Capitan - Wilson 115 kV Lines
 1  34134 34104  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  ATWATER  115.00
  #
 1  34136 34138  "1 "    0     # line from  WILSON B 115.00  BRKR to BRKR  EL CAPTN 115.00
 0
  #
  #
  # (2)   C5 DCTL OUTAGE
  # Wilson - Atwater and Atwater - El Capitan 115 kV Lines
 1  34134 34104  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  ATWATER  115.00
  #
 1  34104 34106  "1 "    0     # line from  ATWATER  115.00  BRKR to (2)   CASTLE   115.00
 1  34106 34138  "1 "    0     # line from  CASTLE   115.00   (2) to BRKR  EL CAPTN 115.00
 0
  #
  #
  # (3)   C5 DCTL OUTAGE
  # Wilson - Merced #2 and Wilson - Oro Loma 115 kV Lines
 1  34134 34144  "1 "    0     # line from  WILSON A 115.00  BRKR to BRKR  MERCED   115.00
  #
 1  34118 34136  "1 "    0     # line from  LE GRNDJ 115.00   (2) to BRKR  WILSON B 115.00
 1  34118 34168  "1 "    0     # line from  LE GRNDJ 115.00   (2) to (2)   EL NIDO  115.00
 1  34168 34162  "1 "    0     # line from  EL NIDO  115.00   (2) to BRKR  ORO LOMA 115.00
 4  34168     0  "1 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==12.49(2.54)
 4  34168     0  "2 "    0     # LOAD-DROP    EL NIDO  115.00  LOAD==15.00(3.05)
 0
  #
  #
  # (4)   C5 DCTL OUTAGE
  # Panoche - Schindler #1 and #2 115 kV Lines
 1  34158 34350  "1 "    0     # line from  PANOCHE  115.00  BRKR to (2)   KAMM     115.00
 1  34350 34352  "1 "    0     # line from  KAMM     115.00   (2) to (2)   CANTUA   115.00
 1  34352 34432  "1 "    0     # line from  CANTUA   115.00   (2) to (2)   WESTLNDS 115.00
 1  34432 34354  "1 "    0     # line from  WESTLNDS 115.00   (2) to BRKR  SCHINDLR 115.00
 4  34350     0  "1 "    0     # LOAD-DROP    KAMM     115.00  LOAD==3.85(1.75)
 4  34352     0  "1 "    0     # LOAD-DROP    CANTUA   115.00  LOAD==16.79(3.41)
 4  34432     0  "16"    0     # LOAD-DROP    WESTLNDS 115.00  LOAD==0.94(0.23)
 4  34432     0  "18"    0     # LOAD-DROP    WESTLNDS 115.00  LOAD==1.21(0.32)
  #
 1  34141 34148  "1 "    0     # line from  PAN2_TAP 115.00   (2) to (2)   CHENY    115.00
 2  34141 34142  "1 "    0     # TRAN from  PAN2_TAP 115.00   (2) to (1)   WHD_PAN2  13.80
 1  34148 34149  "1 "    0     # line from  CHENY    115.00   (2) to (3)   CHENYT   115.00
 1  34149 34158  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  PANOCHE  115.00
 1  34149 34354  "1 "    0     # line from  CHENYT   115.00   (3) to BRKR  SCHINDLR 115.00
 4  34148     0  "1 "    0     # LOAD-DROP    CHENY    115.00  LOAD==13.12(2.66)
 3  34142     0  "1 "    0     # GEN-DROP    WHD_PAN2  13.80  GEN==49.00(4.03)
 0
  #
  #
  # (5)   C5 DCTL OUTAGE
  # Gates - Panoche #1 and #2 230 kV Lines
 1  30790 30900  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
  #
 1  30790 30900  "2 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  GATES    230.00
 0
  #
```

```
 #
 # (6)   C5 DCTL OUTAGE
 # Los Banos - Panoche #2 and Los Banos - Dos Amigos 230 kV Lines
1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
1  30765 38615  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  DS AMIGO 230.00
0
 #
 #
 # (7)   C5 DCTL OUTAGE
 # Los Banos - Panoche #2 and Dos Amigos - Panoche 230 kV Lines
1  30765 30790  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  PANOCHE  230.00
 #
1  38615 30790  "1 "    0     # line from  DS AMIGO 230.00  BRKR to BRKR  PANOCHE  230.00
0
 #
 #
 # (8)   C5 DCTL OUTAGE
 # Los Banos - San Luis PGP #1 and #2 230 kV Lines
1  30765 38625  "1 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
 #
1  30765 38625  "2 "    0     # line from  LOSBANOS 230.00  BRKR to BRKR  SN LS PP 230.00
0
 #
 #
 # (9)   C5 DCTL OUTAGE
 # Bellota - Melones and Bellota - Warnerville 230 kV Lines
1  30500 38206  "1 "    0     # line from  BELLOTA  230.00  BRKR to (2)   COTTLE A 230.00
1  38206 37563  "1 "    0     # line from  COTTLE A 230.00   (2) to BRKR  MELONES  230.00
4  38206     0  "1 "    0     # LOAD-DROP    COTTLE A 230.00  LOAD==19.23(0.00)
3  34604     0  "**"    0     # Drop Helms unit#3 with a loss Bellota - Melones line
 #
1  30500 38208  "1 "    0     # line from  BELLOTA  230.00  BRKR to (3)   COTTLE B 230.00
1  38208 30515  "1 "    0     # line from  COTTLE B 230.00   (3) to BRKR  WARNERVL 230.00
4  38208     0  "2 "    0     # LOAD-DROP    COTTLE B 230.00  LOAD==21.32(7.38)
0
 #
 #
 # (10)   C5 DCTL OUTAGE
 # Bellota - Melones and Warnerville - Wilson 230 kV Lines
1  30500 38206  "1 "    0     # line from  BELLOTA  230.00  BRKR to (2)   COTTLE A 230.00
1  38206 37563  "1 "    0     # line from  COTTLE A 230.00   (2) to BRKR  MELONES  230.00
4  38206     0  "1 "    0     # LOAD-DROP    COTTLE A 230.00  LOAD==19.23(0.00)
3  34604     0  "**"    0     # Drop Helms unit#3 with a loss Bellota - Melones line
 #
1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
0
 #
 #
 # (11)   C5 DCTL OUTAGE
 # Bellota - Melones and Melones - Wilson 230 kV Lines
1  30500 38206  "1 "    0     # line from  BELLOTA  230.00  BRKR to (2)   COTTLE A 230.00
1  38206 37563  "1 "    0     # line from  COTTLE A 230.00   (2) to BRKR  MELONES  230.00
4  38206     0  "1 "    0     # LOAD-DROP    COTTLE A 230.00  LOAD==19.23(0.00)
3  34604     0  "**"    0     # Drop Helms unit#3 with a loss Bellota - Melones line
 #
1  37563 30800  "1 "    0     # line from  MELONES  230.00  BRKR to BRKR  WILSON   230.00
3  34604     0  "**"    0     # Drop Helms unit#3 with a loss Melones - Wilson line
0
 #
 #
 # (12)   C5 DCTL OUTAGE
 # Melones - Wilson and Warnerville - Wilson 230 kV Lines
1  37563 30800  "1 "    0     # line from  MELONES  230.00  BRKR to BRKR  WILSON   230.00
3  34604     0  "**"    0     # Drop Helms unit#3 with a loss Melones - Wilson line
 #
1  30515 30800  "1 "    0     # line from  WARNERVL 230.00  BRKR to BRKR  WILSON   230.00
0
 #
 #
 # (13)   C5 DCTL OUTAGE
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 # Wilson - Borden #1 and #2 230 kV Lines
1  30795 30805  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  BORDEN   230.00
1  30795 30800  "1 "    0     # line from  STOREY 2 230.00   (2) to BRKR  WILSON   230.00
4  30795     0  "2 "    0     # LOAD-DROP    STOREY 2 230.00  LOAD==33.89(6.88)
 #
1  30796 30800  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  WILSON   230.00
1  30796 30805  "1 "    0     # line from  STOREY 1 230.00   (2) to BRKR  BORDEN   230.00
4  30796     0  "1 "    0     # LOAD-DROP    STOREY 1 230.00  LOAD==37.87(7.69)
0
 #
 #
 # (14)   C5 DCTL OUTAGE
 # Borden - Gregg #1 and #2 230 kV Lines
1  30805 30810  "1 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden line
 #
1  30805 30810  "2 "    0     # line from  BORDEN   230.00  BRKR to BRKR  GREGG    230.00
3  34604     0  "**"    0     # Drop unit#3 with loss of Gregg - Borden #2 line
0
 #
 #
 # (15)   C5 DCTL OUTAGE
 # Moss Landing - Panoche and Coburn - Panoche 230 kV Lines
1  30750 30790  "1 "    0     # line from  MOSSLND2 230.00  BRKR to BRKR  PANOCHE  230.00
 #
1  30760 30790  "1 "    0     # line from  COBURN   230.00  BRKR to BRKR  PANOCHE  230.00
0
 #
 #
 # (16)   C5 DCTL OUTAGE
 # Panoche - Helm and Panoche - Kearney 230 kV Lines
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
 #
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
0
 #
 #
 # (17) BUS FAULT  30765  "LOSBANOS" Bus Section 1
 #
1  30765  30670  "1"    0     # LINE from  LOSBANOS 230.00  to  WESTLEY  230.00
1  30765  30790  "2"    0     # LINE from  LOSBANOS 230.00  to  PANOCHE  230.00
1  30765  38625  "1"    0     # LINE from  LOSBANOS 230.00  to  SN LS PP 230.00
1  30765  38625  "2"    0     # LINE from  LOSBANOS 230.00  to  SN LS PP 230.00
2  30765  34214  "3"    0     # TRAN from  LOSBANOS 230.00  to  LOS BANS  70.00
6  30765     0  "v"     0     # drop Los Banos 230 kV shunt Caps
0
 #
 #
 # (18) BUS FAULT  30765  "LOSBANOS" Bus Section 2
 #
1  30765  30790  "1"    0     # LINE from  LOSBANOS 230.00  to  PANOCHE  230.00
1  30765  38615  "1"    0     # LINE from  LOSBANOS 230.00  to  DS AMIGO 230.00
2  30765  34214  "4"    0     # TRAN from  LOSBANOS 230.00  to  LOS BANS  70.00
0
 #
 #
 # (19) BUS FAULT  30790  "PANOCHE" Bus Section 1
 #
1  30790  30760  "1"    0     # LINE from  PANOCHE  230.00  to  COBURN   230.00
1  30790  30765  "1"    0     # LINE from  PANOCHE  230.00  to  LOSBANOS 230.00
1  30790  30765  "2"    0     # LINE from  PANOCHE  230.00  to  LOSBANOS 230.00
1  30790  30825  "1"    0     # LINE from  PANOCHE  230.00  to  MCMULLN1 230.00
1  30790  30900  "1"    0     # LINE from  PANOCHE  230.00  to  GATES    230.00
2  30790  34158  "1"    0     # TRAN from  PANOCHE  230.00  to  PANOCHE  115.00
0
 #
 #
 # (20) BUS FAULT  30790  "PANOCHE" Bus Section 2
 #
```

```
1  30790  30750  "1"    0     # LINE from  PANOCHE  230.00  to  MOSSLND2 230.00
1  30790  30793  "1"    0     # LINE from  PANOCHE  230.00  to  PANO_EC  230.00
1  30790  30873  "1"    0     # LINE from  PANOCHE  230.00  to  HELM     230.00
1  30790  30900  "2"    0     # LINE from  PANOCHE  230.00  to  GATES    230.00
1  30790  38615  "1"    0     # LINE from  PANOCHE  230.00  to  DS AMIGO 230.00
2  30790  34158  "2"    0     # TRAN from  PANOCHE  230.00  to  PANOCHE  115.00
0
 #
 #
 # (21) BUS FAULT  34100  "CHWCHLLA"
 #
1  34100  34101  "1"    0     # LINE from  CHWCHLLA 115.00  to  CERTAN T 115.00
1  34100  34105  "1"    0     # LINE from  CHWCHLLA 115.00  to  CERTANJ1 115.00
4  34100     0  "1 "    0     # LOAD-DROP    CHWCHLLA 115.00  LOAD==10.13(2.06)
4  34100     0  "2 "    0     # LOAD-DROP    CHWCHLLA 115.00  LOAD==13.86(2.82)
0
 #
 #
 # (22) BUS FAULT  34104  "ATWATER"
 #
1  34104  34106  "1"    0     # LINE from  ATWATER  115.00  to  CASTLE   115.00
1  34104  34108  "1"    0     # LINE from  ATWATER  115.00  to  CRESEY T 115.00
1  34104  34134  "1"    0     # LINE from  ATWATER  115.00  to  WILSON A 115.00
4  34104     0  "1 "    0     # LOAD-DROP    ATWATER  115.00  LOAD==32.40(6.57)
4  34104     0  "2 "    0     # LOAD-DROP    ATWATER  115.00  LOAD==28.36(5.76)
0
 #
 #
 # (23) BUS FAULT  34112  "EXCHEQUR"
 #
1  34112  34116  "1"    0     # LINE from  EXCHEQUR 115.00  to  LE GRAND 115.00
2  34112  34232  "1"    0     # TRAN from  EXCHEQUR 115.00  to  EXCHEQUR  70.00
3  34306      0  "1 "   0     # GEN-DROP    EXCHUER  13.8
0
 #
 #
 # (24) BUS FAULT  34116  "LE GRAND"
 #
1  34116  34101  "1"    0     # LINE from  LE GRAND 115.00  to  CERTAN T 115.00
1  34116  34112  "1"    0     # LINE from  LE GRAND 115.00  to  EXCHEQUR 115.00
1  34116  34134  "1"    0     # LINE from  LE GRAND 115.00  to  WILSON A 115.00
1  34116  34154  "1"    0     # LINE from  LE GRAND 115.00  to  DAIRYLND 115.00
4  34116     0  "1 "    0     # LOAD-DROP    LE GRAND 115.00  LOAD==13.41(2.72)
0
 #
 #
 # (25) BUS FAULT  34134  "WILSON A"
 #
1  34134  34116  "1"    0     # LINE from  WILSON A 115.00  to  LE GRAND 115.00
1  34134  34104  "1"    0     # LINE from  WILSON A 115.00  to  ATWATER  115.00
1  34134  34136  "1"    0     # LINE from  WILSON A 115.00  to  WILSON B 115.00
1  34134  34144  "1"    0     # LINE from  WILSON A 115.00  to  MERCED   115.00
2  34134  30800  "1"    0     # TRAN from  WILSON A 115.00  to  WILSON   230.00
4  34134     0  "3 "    0     # LOAD-DROP    WILSON A 115.00  LOAD==18.66(3.79)
6  34134     0  "v"     0     # drop Wilson A 115 kV shunt Caps
0
 #
 #
 # (26) BUS FAULT  34136  "WILSON B"
 #
1  34136  34118  "1"    0     # LINE from  WILSON B 115.00  to  LE GRNDJ 115.00
1  34136  34134  "1"    0     # LINE from  WILSON B 115.00  to  WILSON A 115.00
1  34136  34138  "1"    0     # LINE from  WILSON B 115.00  to  EL CAPTN 115.00
1  34136  34144  "2"    0     # LINE from  WILSON B 115.00  to  MERCED   115.00
2  34136  30800  "2"    0     # TRAN from  WILSON B 115.00  to  WILSON   230.00
0
 #
 #
 # (27) BUS FAULT  34138  "EL CAPTN"
 #
1  34138  34106  "1"    0     # LINE from  EL CAPTN 115.00  to  CASTLE   115.00
```

```
1  34138  34136  "1"    0     # LINE from  EL CAPTN 115.00  to  WILSON B 115.00
4  34138     0  "1 "    0     # LOAD-DROP    EL CAPTN 115.00  LOAD==19.47(3.95)
4  34138     0  "2 "    0     # LOAD-DROP    EL CAPTN 115.00  LOAD==25.91(5.26)
4  34138     0  "3 "    0     # LOAD-DROP    EL CAPTN 115.00  LOAD==33.05(6.71)
0
 #
 #
 # (28) BUS FAULT  34144  "MERCED"
 #
1  34144  34110  "1"    0     # LINE from  MERCED   115.00  to  ATWATR J 115.00
1  34144  34134  "1"    0     # LINE from  MERCED   115.00  to  WILSON A 115.00
1  34144  34136  "2"    0     # LINE from  MERCED   115.00  to  WILSON B 115.00
2  34144  34202  "2"    0     # TRAN from  MERCED   115.00  to  MERCED    70.00
4  34144     0  "1 "    0     # LOAD-DROP    MERCED   115.00  LOAD==37.10(7.53)
4  34144     0  "3 "    0     # LOAD-DROP    MERCED   115.00  LOAD==19.45(3.95)
0
 #
 #
 # (29) BUS FAULT  34154  "DAIRYLND"
 #
1  34154  34116  "1"    0     # LINE from  DAIRYLND 115.00  to  LE GRAND 115.00
1  34154  34150  "1"    0     # LINE from  DAIRYLND 115.00  to  NEWHALL  115.00
4  34154     0  "1 "    0     # LOAD-DROP    DAIRYLND 115.00  LOAD==25.82(5.24)
0
 #
 #
 # (30) BUS FAULT  34158  "PANOCHE" Bus Section 1
 #
1  34158  34149  "1"    0     # LINE from  PANOCHE  115.00  to  CHENYT   115.00
1  34158  34159  "1"    0     # LINE from  PANOCHE  115.00  to  PANOCHEJ 115.00
2  34158  30790  "2"    0     # TRAN from  PANOCHE  115.00  to  PANOCHE  230.00
2  34158  34186  "1"    0     # TRAN from  PANOCHE  115.00  to  DG_PAN1   13.80
0
 #
 #
 # (31) BUS FAULT  34158  "PANOCHE" Bus Section 2
 #
1  34158  34157  "1"    0     # LINE from  PANOCHE  115.00  to  PANOCHET 115.00
1  34158  34189  "1"    0     # LINE from  PANOCHE  115.00  to  STARWOOD 115.00
1  34158  34350  "1"    0     # LINE from  PANOCHE  115.00  to  KAMM     115.00
2  30790  34158  "1"    0     # TRAN from  PANOCHE  230.00  to  PANOCHE  115.00
0
 #
 #
 # (32) BUS FAULT  34200  "ORO LOMA"
 #
1  34200  34218  "1"    0     # LINE from  ORO LOMA  70.00  to  DOS PALS  70.00
1  34200  34222  "1"    0     # LINE from  ORO LOMA  70.00  to  MRCYSPRS  70.00
1  34200  34234  "1"    0     # LINE from  ORO LOMA  70.00  to  POSO J1   70.00
2  34200  34162  "2"    0     # TRAN from  ORO LOMA  70.00  to  ORO LOMA 115.00
4  34200     0  "1 "    0     # LOAD-DROP    ORO LOMA  70.00  LOAD==8.64(1.75)
0
 #
 #
 # (33) BUS FAULT  34202  "MERCED"
 #
1  34202  34203  "1"    0     # LINE from  MERCED    70.00  to  ELNIDOTP  70.00
1  34202  34230  "1"    0     # LINE from  MERCED    70.00  to  MRCDFLLS  70.00
2  34144  34202  "2"    0     # TRAN from  MERCED   115.00  to  MERCED    70.00
0
 #
 #
 # (34) BUS FAULT  34206  "CANAL"
 #
1  34206  34212  "1"    0     # LINE from  CANAL     70.00  to  LVNGSTNT  70.00
1  34206  34216  "1"    0     # LINE from  CANAL     70.00  to  SNTA RTA  70.00
1  34206  34220  "1"    0     # LINE from  CANAL     70.00  to  ORTIGA    70.00
4  34206     0  "1 "    0     # LOAD-DROP    CANAL     70.00  LOAD==30.56(6.21)
4  34206     0  "2 "    0     # LOAD-DROP    CANAL     70.00  LOAD==31.27(6.35)
0
 #
```

```
 #
 # (35) BUS FAULT  34214  "LOS BANS"
 #
1  34214  34208  "1"    0     # LINE from  LOS BANS  70.00  to  CHEVPIPE  70.00
1  34214  34272  "1"    0     # LINE from  LOS BANS  70.00  to  WRGHT PP  70.00
1  34214  34278  "1"    0     # LINE from  LOS BANS  70.00  to  PCHCO PP  70.00
1  34214  34282  "1"    0     # LINE from  LOS BANS  70.00  to  ONLL PMP  69.00
2  34214  30765  "3"    0     # TRAN from  LOS BANS  70.00  to  LOSBANOS 230.00
2  34214  30765  "4"    0     # TRAN from  LOS BANS  70.00  to  LOSBANOS 230.00
0
 #
 #
 # (36) BUS FAULT  34216  "SNTA RTA"
 #
1  34216  34206  "1"    0     # LINE from  SNTA RTA  70.00  to  CANAL     70.00
1  34216  34218  "1"    0     # LINE from  SNTA RTA  70.00  to  DOS PALS  70.00
4  34216     0  "1 "    0     # LOAD-DROP    SNTA RTA  70.00  LOAD==7.48(1.52)
0
 #
 #
 # (37) BUS FAULT  34230  "MRCDFLLS"
 #
1  34230  34202  "1"    0     # LINE from  MRCDFLLS  70.00  to  MERCED    70.00
1  34230  34321  "1"    0     # LINE from  MRCDFLLS  70.00  to  MCSWAINJ  70.00
2  34230  34322  "1"    0     # TRAN from  MRCDFLLS  70.00  to  MERCEDFL   9.11
2  34230  34322  "2"    0     # TRAN from  MRCDFLLS  70.00  to  MERCEDFL   9.11
4  34230     0  "2 "    0     # LOAD-DROP    MRCDFLLS  70.00  LOAD==8.94(1.82)
0
 #
 #
 # (38) BUS FAULT  34238  "BONITA"
 #
1  34238  34236  "1"    0     # LINE from  BONITA    70.00  to  POSO J2   70.00
1  34238  34255  "1"    0     # LINE from  BONITA    70.00  to  TRIGO J   70.00
4  34238     0  "1 "    0     # LOAD-DROP    BONITA    70.00  LOAD==14.37(2.92)
0
 #
 #
 # (39) BUS FAULT  34240  "GLASS"
 #
1  34240  34237  "1"    0     # LINE from  GLASS     70.00  to  CANANDGA  70.00
1  34240  34256  "1"    0     # LINE from  GLASS     70.00  to  BORDEN    70.00
4  34240     0  "1 "    0     # LOAD-DROP    GLASS     70.00  LOAD==9.05(4.89)
0
 #
 #
 # (40) BUS FAULT  34252  "MADERA"
 #
1  34252  34254  "1"    0     # LINE from  MADERA    70.00  to  TRIGO     70.00
1  34252  34256  "1"    0     # LINE from  MADERA    70.00  to  BORDEN    70.00
1  34252  34256  "2"    0     # LINE from  MADERA    70.00  to  BORDEN    70.00
4  34252     0  "1 "    0     # LOAD-DROP    MADERA    70.00  LOAD==17.99(3.65)
4  34252     0  "2 "    0     # LOAD-DROP    MADERA    70.00  LOAD==23.16(4.71)
6  34252     0  "v"     0     # drop Madera 70 kV shunt Caps
0
 #
 #
 # (41) BUS FAULT  34256  "BORDEN"
 #
1  34256  34252  "1"    0     # LINE from  BORDEN    70.00  to  MADERA    70.00
1  34256  34252  "2"    0     # LINE from  BORDEN    70.00  to  MADERA    70.00
1  34256  34240  "1"    0     # LINE from  BORDEN    70.00  to  GLASS     70.00
1  34256  34262  "1"    0     # LINE from  BORDEN    70.00  to  CASSIDY   70.00
2  34256  30805  "1"    0     # TRAN from  BORDEN    70.00  to  BORDEN   230.00
2  34256  30805  "2"    0     # TRAN from  BORDEN    70.00  to  BORDEN   230.00
0
 #
 #
 # (42) BUS FAULT  34268  "MENDOTA"
 #
1  34268  34267  "1"    0     # LINE from  MENDOTA   70.00  to  TOMATAK   70.00
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1  34268  34269  "1"    0     # LINE from  MENDOTA   70.00  to  BIOMSJCT  70.00
2  34268  34156  "1"    0     # TRAN from  MENDOTA   70.00  to  MENDOTA  115.00
0
 #
 #
 # 2013 sprpk category c contingency list
 # Fresno Zone 314
 #
 #
 # (43)   C5 DCTL OUTAGE
 # Gates - Schindler and Gates - Huron #1 70 kV Lines
1  34558 34560  "1 "    0     # line from  HURON     70.00  BRKR to (2)   CALFLAX   70.00
1  34560 34562  "1 "    0     # line from  CALFLAX   70.00   (2) to BRKR  SCHLNDLR  70.00
4  34560     0  "1 "    0     # LOAD-DROP    CALFLAX   70.00  LOAD==6.53(1.33)
1  34552 34558  "2 "    0      # Must include Gates - Huron #2 in this outage
 #
1  34552 34558  "1 "    0     # line from  GATES     70.00  BRKR to BRKR  HURON     70.00
0
 #
 #
 # (44)   C5 DCTL OUTAGE
 # Barton - Sanger and Manchester - Sanger 115 kV Lines
1  34359 34361  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  AIRWAYS  115.00
1  34359 34408  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  BARTON   115.00
1  34359 34366  "1 "    0     # line from  AIRWAYJ2 115.00   (3) to BRKR  SANGER   115.00
 #
1  34357 34361  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  AIRWAYS  115.00
1  34357 34368  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to (2)   LASPALMS 115.00
1  34357 34410  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  MANCHSTR 115.00
1  34368 34366  "1 "    0     # line from  LASPALMS 115.00   (2) to BRKR  SANGER   115.00
4  34368     0  "1 "    0     # LOAD-DROP    LASPALMS 115.00  LOAD==13.90(11.89)
0
 #
 #
 # (45)   C5 DCTL OUTAGE
 # Herndon - Barton and Herndon - Manchester 115 kV Lines
1  34408 34412  "1 "    0     # line from  BARTON   115.00  BRKR to BRKR  HERNDON  115.00
 #
1  34410 34412  "1 "    0     # line from  MANCHSTR 115.00  BRKR to BRKR  HERNDON  115.00
0
 #
 #
 # (46)   C5 DCTL OUTAGE
 # Herndon - Barton and Manchester - Sanger 115 kV Lines
1  34408 34412  "1 "    0     # line from  BARTON   115.00  BRKR to BRKR  HERNDON  115.00
 #
1  34357 34361  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  AIRWAYS  115.00
1  34357 34368  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to (2)   LASPALMS 115.00
1  34357 34410  "1 "    0     # line from  AIRWAYJ1 115.00   (3) to BRKR  MANCHSTR 115.00
1  34368 34366  "1 "    0     # line from  LASPALMS 115.00   (2) to BRKR  SANGER   115.00
4  34368     0  "1 "    0     # LOAD-DROP    LASPALMS 115.00  LOAD==13.90(11.89)
0
 #
 #
 # (47)   C5 DCTL OUTAGE
 # Herndon - Bullard #1 and #2 115 kV Lines
1  34411 34416  "1 "    0     # line from  PNDLJ1   115.00   (2) to BRKR  BULLARD  115.00
1  34411 34412  "1 "    0     # line from  PNDLJ1   115.00   (2) to BRKR  HERNDON  115.00
 #
1  34409 34413  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  PNEDLE   115.00
1  34409 34416  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  BULLARD  115.00
1  34409 34412  "1 "    0     # line from  PNDLJ2   115.00   (3) to BRKR  HERNDON  115.00
4  34413     0  "2 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==30.74(6.25)
4  34413     0  "3 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==40.42(8.20)
1  34411 34413  "1 "    1      # Switches in Pindale CB#12 to transfer load
4  34413     0  "**"    1      # Restore load at Pindale
0
 #
 #
 # (48)   C5 DCTL OUTAGE
 # Kerckhoff - Clovis - Sanger #1 and #2 115 kV Lines
```

```
1  34358 34360  "1 "    0     # line from  KERCKHF2 115.00  BRKR to (3)   WWARD JT 115.00
1  34360 34414  "1 "    0     # line from  WWARD JT 115.00   (3) to BRKR  WOODWARD 115.00
1  34360 34363  "1 "    0     # line from  WWARD JT 115.00   (3) to (3)   CLOVISJ1 115.00
1  34363 34362  "1 "    0     # line from  CLOVISJ1 115.00   (3) to BRKR  CLOVIS-1 115.00
1  34363 34366  "1 "    0     # line from  CLOVISJ1 115.00   (3) to BRKR  SANGER   115.00
4  34362     0  "1 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==51.01(10.36)
4  34362     0  "2 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==50.20(10.20)
1 34362  34364  "1 "    1      # Switches in Clovis SW 387 to transfer load
4 34362      0  "**"    1      # Restore Load at Clovis 1
 #
1  34364 34365  "1 "    0     # line from  CLOVIS-2 115.00  BRKR to (3)   CLOVISJ2 115.00
1  34365 34358  "1 "    0     # line from  CLOVISJ2 115.00   (3) to BRKR  KERCKHF2 115.00
1  34365 34366  "1 "    0     # line from  CLOVISJ2 115.00   (3) to BRKR  SANGER   115.00
4  34364     0  "3 "    0     # LOAD-DROP    CLOVIS-2 115.00  LOAD==44.76(9.09)
1 34362  34364  "1 "    1      # Switches in Clovis SW 387 to transfer load
4 34364      0  "**"    1      # Restore Load at Clovis 2
0
 #
 #
 # (49)   C5 DCTL OUTAGE
 # Kingburg - Corcoran #1 and #2 115 kV Lines
1  34418 34420  "1 "    0     # line from  KINGSBRG 115.00  BRKR to BRKR  CORCORAN 115.00
 #
1  34418 34420  "2 "    0     # line from  KINGSBRG 115.00  BRKR to BRKR  CORCORAN 115.00
0
 #
 #
 # (50)   C5 DCTL OUTAGE
 # Kings River - Sanger - Reedley and Balch - Sanger 115 kV Lines
1  34366 34389  "1 "    0     # line from  SANGER   115.00  BRKR to (3)   RAINBWTP 115.00
1  34389 34388  "1 "    0     # line from  RAINBWTP 115.00   (3) to (1)   RAINBW   115.00
1  34389 34394  "1 "    0     # line from  RAINBWTP 115.00   (3) to (3)   PIEDRA 1 115.00
1  34394 34380  "1 "    0     # line from  PIEDRA 1 115.00   (3) to BRKR  REEDLEY  115.00
1  34394 34400  "1 "    0     # line from  PIEDRA 1 115.00   (3) to BRKR  KNGSRVR1 115.00
4  34388     0  "1 "    0     # LOAD-DROP    RAINBW   115.00  LOAD==16.20(3.29)
 #
1  34366 34396  "1 "    0     # line from  SANGER   115.00  BRKR to (2)   PIEDRA 2 115.00
1  34396 34398  "1 "    0     # line from  PIEDRA 2 115.00   (2) to (2)   BALCH    115.00
2  34398 34624  "1 "    0     # TRAN from  BALCH    115.00   (2) to (1)   BALCH 1   13.20
4  34624     0  "1 "    0     # LOAD-DROP    BALCH 1   13.20  LOAD==0.26(0.00)
3  34624     0  "1 "    0     # GEN-DROP    BALCH 1   13.20  GEN==27.00(8.33)
0
 #
 #
 # (51)   C5 DCTL OUTAGE
 # McCall - Kingsburg #1 and #2 115 kV Lines
1  34370 34385  "1 "    0     # line from  MC CALL  115.00  BRKR to (3)   KINGS J1 115.00
1  34385 34417  "1 "    0     # line from  KINGS J1 115.00   (3) to (2)   KINGS J2 115.00
1  34385 34425  "1 "    0     # line from  KINGS J1 115.00   (3) to (3)   KCOGNJCT 115.00
1  34417 34418  "1 "    0     # line from  KINGS J2 115.00   (2) to BRKR  KINGSBRG 115.00
1  34425 34387  "1 "    0     # line from  KCOGNJCT 115.00   (3) to (1)   SUNMAID  115.00
1  34425 34427  "1 "    0     # line from  KCOGNJCT 115.00   (3) to (2)   GRDNGLS2 115.00
1  34427 34386  "1 "    0     # line from  GRDNGLS2 115.00   (2) to (2)   KNGSCOGN 115.00
2  34386 34642  "1 "    0     # TRAN from  KNGSCOGN 115.00   (2) to BRKR  KINGSBUR   9.11
4  34387     0  "1 "    0     # LOAD-DROP    SUNMAID  115.00  LOAD==3.40(3.28)
3  34642     0  "1 "    0     # GEN-DROP    KINGSBUR   9.11  GEN==34.00(17.30)
 #
1  34418 34423  "1 "    0     # line from  KINGSBRG 115.00  BRKR to (3)   GAURD J1 115.00
1  34423 34370  "1 "    0     # line from  GAURD J1 115.00   (3) to BRKR  MC CALL  115.00
1  34423 34421  "1 "    0     # line from  GAURD J1 115.00   (3) to (2)   GAURD J2 115.00
1  34421 34424  "1 "    0     # line from  GAURD J2 115.00   (2) to (1)   GRDN GLS 115.00
4  34424     0  "1 "    0     # LOAD-DROP    GRDN GLS 115.00  LOAD==3.50(1.15)
4  34418     0  "3 "    0      # Kingsburg Bank #3 will also be dropped on this outage
0
 #
 #
 # (52)   C5 DCTL OUTAGE
 # McCall - Sanger #1 and #2 115 kV Lines
1  34366 34370  "1 "    0     # line from  SANGER   115.00  BRKR to BRKR  MC CALL  115.00
 #
1  34366 34370  "2 "    0     # line from  SANGER   115.00  BRKR to BRKR  MC CALL  115.00
```

```
0
 #
 #
 # (53)   C5 DCTL OUTAGE
 # McCall - West Fresno and California Ave. - West Fresno 115 kV Lines
1  34404 34370  "1 "    0     # line from  WST FRSO 115.00  BRKR to BRKR  MC CALL  115.00
 #
1  34402 34404  "1 "    0     # line from  CAL AVE  115.00  BRKR to BRKR  WST FRSO 115.00
0
 #
 #
 # (54)   C5 DCTL OUTAGE
 # McCall - West Fresno and California Ave. - McCall 115 kV Lines
1  34404 34370  "1 "    0     # line from  WST FRSO 115.00  BRKR to BRKR  MC CALL  115.00
 #
1  34390 34370  "1 "    0     # line from  DANISHCM 115.00   (2) to BRKR  MC CALL  115.00
1  34390 34402  "1 "    0     # line from  DANISHCM 115.00   (2) to BRKR  CAL AVE  115.00
4  34390     0  "1 "    0     # LOAD-DROP    DANISHCM 115.00  LOAD==4.10(3.51)
0
 #
 #
 # (55)   C5 DCTL OUTAGE
 # Gates - Gregg and Gates - McCall 230 kV Lines
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
0
 #
 #
 # (56)   C5 DCTL OUTAGE
 # Panoche - Kearney and Gates - Gregg 230 kV Lines
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
0
 #
 #
 # (57)   C5 DCTL OUTAGE
 # Panoche - Kearney and Panoche - Helm 230 kV Lines
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
1  30790 30873  "1 "    0     # line from  PANOCHE  230.00  BRKR to BRKR  HELM     230.00
0
 #
 #
 # (58)   C5 DCTL OUTAGE
 # Panoche - Kearney and Helm - McCall 230 kV Lines
1  30790 30825  "1 "    0     # line from  PANOCHE  230.00  BRKR to (2)   MCMULLN1 230.00
1  30825 30830  "1 "    0     # line from  MCMULLN1 230.00   (2) to BRKR  KEARNEY  230.00
4  30825     0  "1 "    0     # LOAD-DROP    MCMULLN1 230.00  LOAD==20.57(4.18)
 #
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
0
 #
 #
 # (59)   C5 DCTL OUTAGE
 # Helm - McCall and Gates - McCall 230 kV Lines
1  30873 30875  "1 "    0     # line from  HELM     230.00  BRKR to BRKR  MC CALL  230.00
```

```
 #
1  30875 30880  "1 "    0     # line from  MC CALL  230.00  BRKR to (2)   HENTAP2  230.00
1  30880 30900  "1 "    0     # line from  HENTAP2  230.00   (2) to BRKR  GATES    230.00
0
 #
 #
 # (60)   C5 DCTL OUTAGE
 # Helms - Gregg #1 and #2 230 kV Lines
1  30810 30820  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34600     0  "**"    0      # Drop unit#1 with a loss Helm - Gregg #1 line
 #
1  30810 30820  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HELMS PP 230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Helm - Gregg #2 line
0
 #
 #
 # (61)   C5 DCTL OUTAGE
 # Gregg - Herndon #1 and #2 230 kV Lines
1  30810 30835  "1 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #1 line
 #
1  30810 30835  "2 "    0     # line from  GREGG    230.00  BRKR to BRKR  HERNDON  230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Herndon #2 line
0
 #
 #
 # (62)   C5 DCTL OUTAGE
 # Herndon - Bullard EC and Herndon - Ashlan 230 kV Lines
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
0
 #
 #
 # (63)   C5 DCTL OUTAGE
 # Bullard EC - Kearney and Herndon - Ashlan 230 kV Lines
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
0
 #
 #
 # (64)   C5 DCTL OUTAGE
 # Herndon - Bullard EC and Gates - Gregg 230 kV Lines
1  30835 30829  "1 "    0     # line from  HERNDON  230.00  BRKR to BRKR  BULRD_EC 230.00
 #
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
0
 #
 #
 # (65)   C5 DCTL OUTAGE
 # Bullard EC - Kearney and Gates - Gregg 230 kV Lines
1  30829 30830  "1 "    0     # line from  BULRD_EC 230.00  BRKR to BRKR  KEARNEY  230.00
 #
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
```

```
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
0
 #
 #
 # (66)   C5 DCTL OUTAGE
 # Gates - Gregg and Gregg - Ashlan 230 kV Lines
1  30810 30879  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   HENTAP1  230.00
1  30879 30881  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  HENRIETA 230.00
1  30879 30900  "1 "    0     # line from  HENTAP1  230.00   (3) to BRKR  GATES    230.00
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Henrietta Tap 1 line
1  30880 30881  "1 "    1      # Henrietta flip flop (Henrietta CB 222)
 #
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
0
 #
 #
 # (67)   C5 DCTL OUTAGE
 # Herndon - Ashlan and Gregg - Ashlan 230 kV Lines
1  30835 30840  "1 "    0     # line from  HERNDON  230.00  BRKR to (3)   FGRDN T1 230.00
1  30840 30841  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  FIGRDN 1 230.00
1  30840 30850  "1 "    0     # line from  FGRDN T1 230.00   (3) to BRKR  ASHLAN   230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30841      0  "**"    1      # Restore Load at Figarden 1
 #
1  30810 30845  "1 "    0     # line from  GREGG    230.00  BRKR to (3)   FGRDN T2 230.00
1  30845 30846  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  FIGRDN 2 230.00
1  30845 30850  "1 "    0     # line from  FGRDN T2 230.00   (3) to BRKR  ASHLAN   230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
3  34604     0  "**"    0      # Drop unit#3 with a loss Gregg - Figarden line
1 30841  30846  "1 "    1      # Switches in Figarden SW 286 to transfer load
4 30846      0  "**"    1      # Restore Load at Figarden 2
0
 #
 #
 # (68)   C5 DCTL OUTAGE
 # Haas - McCall and Balch - McCall 230 kV Lines
1  30855 30860  "1 "    0     # line from  HAAS     230.00   (2) to (3)   BALCH3TP 230.00
2  30855 34610  "1 "    0     # TRAN from  HAAS     230.00   (2) to (1)   HAAS      13.80
1  30860 30875  "1 "    0     # line from  BALCH3TP 230.00   (3) to BRKR  MC CALL  230.00
2  30860 34614  "1 "    0     # TRAN from  BALCH3TP 230.00   (3) to (1)   BLCH 2-3  13.80
3  34610     0  "1 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34610     0  "2 "    0     # GEN-DROP    HAAS      13.80  GEN==70.00(10.21)
3  34614     0  "1 "    0     # GEN-DROP    BLCH 2-3  13.80  GEN==50.00(7.64)
 #
1  30865 30870  "1 "    0     # line from  BALCH    230.00   (2) to (3)   PINE FLT 230.00
2  30865 34612  "1 "    0     # TRAN from  BALCH    230.00   (2) to (1)   BLCH 2-2  13.80
1  30870 30875  "1 "    0     # line from  PINE FLT 230.00   (3) to BRKR  MC CALL  230.00
2  30870 38720  "1 "    0     # TRAN from  PINE FLT 230.00   (3) to (1)   PINE FLT  13.80
3  34612     0  "1 "    0     # GEN-DROP    BLCH 2-2  13.80  GEN==50.00(0.66)
3  38720     0  "1 "    0     # GEN-DROP    PINE FLT  13.80  GEN==57.00(23.30)
0
 #
 #
 # (69) BUS FAULT  30820  "HELMS PP"
 #
1  30820  30810  "1"    0     # LINE from  HELMS PP 230.00  to  GREGG    230.00
1  30820  30810  "2"    0     # LINE from  HELMS PP 230.00  to  GREGG    230.00
2  30820  34600  "1"    0     # TRAN from  HELMS PP 230.00  to  HELMS 1   18.00
2  30820  34602  "1"    0     # TRAN from  HELMS PP 230.00  to  HELMS 2   18.00
2  30820  34604  "1"    0     # TRAN from  HELMS PP 230.00  to  HELMS 3   18.00
0
```

```
 #
 #
 # (70) BUS FAULT  30829  "BULRD_EC"
 #
1  30829  30830  "1"    0     # LINE from  BULRD_EC 230.00  to  KEARNEY  230.00
1  30829  30835  "1"    0     # LINE from  BULRD_EC 230.00  to  HERNDON  230.00
2  30829  34605  "1"    0     # TRAN from  BULRD_EC 230.00  to  BULRD_EC  13.80
0
 #
 #
 # (71) BUS FAULT  30830  "KEARNEY"
 #
1  30830  30825  "1"    0     # LINE from  KEARNEY  230.00  to  MCMULLN1 230.00
1  30830  30829  "1"    0     # LINE from  KEARNEY  230.00  to  BULRD_EC 230.00
2  30830  34480  "2"    0     # TRAN from  KEARNEY  230.00  to  KEARNEY   70.00
0
 #
 #
 # (72) BUS FAULT  30835  "HERNDON" 230 kV Bus Section 1
 #
1  30835  30810  "1"    0     # LINE from  HERNDON  230.00  to  GREGG    230.00
1  30835  30829  "1"    0     # LINE from  HERNDON  230.00  to  BULRD_EC 230.00
2  30835  34412  "1"    0     # TRAN from  HERNDON  230.00  to  HERNDON  115.00
3  34630      0  "1 "   0     # SYNCH CONDENSOR HERNDN1T  13.2
0
 #
 #
 # (73) BUS FAULT  30835  "HERNDON" 230 kV Bus Section 2
 #
1  30835  30810  "2"    0     # LINE from  HERNDON  230.00  to  GREGG    230.00
1  30835  30840  "1"    0     # LINE from  HERNDON  230.00  to  FGRDN T1 230.00
2  30835  34412  "2"    0     # TRAN from  HERNDON  230.00  to  HERNDN2M 115.00
3  34632      0  "1 "   0     # SYNCH CONDENSOR HERNDN2T  13.2
0
 #
 #
 # (74) BUS FAULT  30841  "FIGRDN 1"
 #
1  30841  30840  "1"    0     # LINE from  FIGRDN 1 230.00  to  FGRDN T1 230.00
1  30841  30846  "1"    0     # LINE from  FIGRDN 1 230.00  to  FIGRDN 2 230.00
4  30841     0  "1 "    0     # LOAD-DROP    FIGRDN 1 230.00  LOAD==73.45(14.92)
0
 #
 #
 # (75) BUS FAULT  30846  "FIGRDN 2"
 #
1  30846  30841  "1"    0     # LINE from  FIGRDN 2 230.00  to  FIGRDN 1 230.00
1  30846  30845  "1"    0     # LINE from  FIGRDN 2 230.00  to  FGRDN T2 230.00
4  30846     0  "1 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==52.57(10.67)
4  30846     0  "2 "    0     # LOAD-DROP    FIGRDN 2 230.00  LOAD==36.77(7.47)
0
 #
 #
 # (76) BUS FAULT  30850  "ASHLAN"
 #
1  30850  30840  "1"    0     # LINE from  ASHLAN   230.00  to  FGRDN T1 230.00
1  30850  30845  "1"    0     # LINE from  ASHLAN   230.00  to  FGRDN T2 230.00
4  30850     0  "1 "    0     # LOAD-DROP    ASHLAN   230.00  LOAD==69.20(13.40)
4  30850     0  "2 "    0     # LOAD-DROP    ASHLAN   230.00  LOAD==64.54(12.84)
4  30850     0  "3 "    0     # LOAD-DROP    ASHLAN   230.00  LOAD==65.51(12.49)
0
 #
 #
 # (77) BUS FAULT  30873  "HELM"
 #
1  30873  30790  "1"    0     # LINE from  HELM     230.00  to  PANOCHE  230.00
1  30873  30875  "1"    0     # LINE from  HELM     230.00  to  MC CALL  230.00
2  30873  34474  "1"    0     # TRAN from  HELM     230.00  to  HELM      70.00
0
 #
 #
```

```
 # (78) BUS FAULT  30874  "P0615STN"
 #
1  30874  30875  "1"    0     # LINE from  P0615STN 230.00  to  MC CALL  230.00
1  30874  30875  "2"    0     # LINE from  P0615STN 230.00  to  MC CALL  230.00
2  30874  34685  "1"    0     # TRAN from  P0615STN 230.00  to  P0615CT1  16.50
2  30874  34686  "1"    0     # TRAN from  P0615STN 230.00  to  P0615CT2  16.50
2  30874  34687  "1"    0     # TRAN from  P0615STN 230.00  to  P0615STG  16.50
0
 #
 #
 # (79) BUS FAULT  30875  "MC CALL" 230 kV Bus Section 1
 #
1  30875  30870  "1"    0     # LINE from  MC CALL  230.00  to  PINE FLT 230.00
1  30875  30874  "1"    0     # LINE from  MC CALL  230.00  to  P0615STN 230.00
1  30875  30880  "1"    0     # LINE from  MC CALL  230.00  to  HENTAP2  230.00
2  30875  34370  "2"    0     # TRAN from  MC CALL  230.00  to  MC CALL  115.00
6  30875  0      "v"    0     # SVD  from  MC CALL  230.00
0
 #
 #
 # (80) BUS FAULT  30875  "MC CALL" 230 kV Bus Section 2
 #
1  30875  30873  "1"    0     # LINE from  MC CALL  230.00  to  HELM     230.00
1  30875  30860  "1"    0     # LINE from  MC CALL  230.00  to  BALCH3TP 230.00
1  30875  30874  "2"    0     # LINE from  MC CALL  230.00  to  P0615STN 230.00
2  30875  34370  "1"    0     # TRAN from  MC CALL  230.00  to  MC CALL  115.00
2  30875  34370  "3"    0     # TRAN from  MC CALL  230.00  to  MC CALL  115.00
3  34618      0  "1 "   0     # SYNCH CONDENSOR     MCCALL1T   13.2
3  34621      0  "1 "   0     # SYNCH CONDENSOR     MCCALL3T   13.2
0
 #
 #
 # (81) BUS FAULT  30881  "HENRIETA"
 #
1  30881  30879  "1"    0     # LINE from  HENRIETA 230.00  to  HENTAP1  230.00
1  30881  30880  "1"    0     # LINE from  HENRIETA 230.00  to  HENTAP2  230.00
2  30881  34430  "3"    0     # TRAN from  HENRIETA 230.00  to  HENRETTA 115.00
2  30881  34540  "2"    0     # TRAN from  HENRIETA 230.00  to  HENRITTA  70.00
2  30881  34540  "4"    0     # TRAN from  HENRIETA 230.00  to  HENRITTA  70.00
0
 #
 #
 # (82) BUS FAULT  30900  "GATES" 230 kV Bus Section 1D
 #
1  30900  30790  "1"    0     # LINE from  GATES    230.00  to  PANOCHE  230.00
1  30900  30905  "1"    0     # LINE from  GATES    230.00  to  TEMPLETN 230.00
2  30900  30901  "1"    0     # TRAN from  GATES    230.00  to  GATES 1M 230.00
6  30900  0      "v"    0     # SVD  from  GATES    230.00
0
 #
 #
 # (83) BUS FAULT  30900  "GATES" 230 kV Bus Section 2D
 #
1  30900  30790  "2"    0     # LINE from  GATES    230.00  to  PANOCHE  230.00
1  30900  30915  "1"    0     # LINE from  GATES    230.00  to  MORROBAY 230.00
0
 #
 #
 # (84) BUS FAULT  30900  "GATES" 230 kV Bus Section 1E
 #
1  30900  30879  "1"    0     # LINE from  GATES    230.00  to  HENTAP1  230.00
1  30900  30935  "1"    0     # LINE from  GATES    230.00  to  ARCO     230.00
0
 #
 #
 # (85) BUS FAULT  30900  "GATES" 230 kV Bus Section 2E
 #
1  30900  30880  "1"    0     # LINE from  GATES    230.00  to  HENTAP2  230.00
1  30900  30970  "1"    0     # LINE from  GATES    230.00  to  MIDWAY   230.00
0
 #
```

```
 #
 # (86) BUS FAULT  34356  "KERCKHF1"
 #
1  34356  34123  "2"    0     # LINE from  KERCKHF1 115.00  to  K1-JCT   115.00
1  34356  34358  "1"    0     # LINE from  KERCKHF1 115.00  to  KERCKHF2 115.00
2  34356  34344  "1"    0     # TRAN from  KERCKHF1 115.00  to  KERCKHOF   6.60
0
 #
 #
 # (87) BUS FAULT  34358  "KERCKHF2"
 #
1  34358  34123  "2"    0     # LINE from  KERCKHF2 115.00  to  K1-JCT   115.00
1  34358  34356  "1"    0     # LINE from  KERCKHF2 115.00  to  KERCKHF1 115.00
1  34358  34360  "1"    0     # LINE from  KERCKHF2 115.00  to  WWARD JT 115.00
1  34358  34365  "1"    0     # LINE from  KERCKHF2 115.00  to  CLOVISJ2 115.00
2  34358  34308  "1"    0     # TRAN from  KERCKHF2 115.00  to  KERCKHOF  13.80
0
 #
 #
 # (88) BUS FAULT  34361  "AIRWAYS"
 #
1  34361  34357  "1"    0     # LINE from  AIRWAYS  115.00  to  AIRWAYJ1 115.00
1  34361  34359  "1"    0     # LINE from  AIRWAYS  115.00  to  AIRWAYJ2 115.00
4  34361     0  "1 "    0     # LOAD-DROP    AIRWAYS  115.00  LOAD==38.39(7.43)
4  34361     0  "2 "    0     # LOAD-DROP    AIRWAYS  115.00  LOAD==12.60(2.56)
0
 #
 #
 # (89) BUS FAULT  34362  "CLOVIS-1"
 #
1  34362  34363  "1"    0     # LINE from  CLOVIS-1 115.00  to  CLOVISJ1 115.00
1  34362  34364  "1"    0     # LINE from  CLOVIS-1 115.00  to  CLOVIS-2 115.00
4  34362     0  "1 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==51.01(10.36)
4  34362     0  "2 "    0     # LOAD-DROP    CLOVIS-1 115.00  LOAD==50.20(10.20)
0
 #
 #
 # (90) BUS FAULT  34364  "CLOVIS-2"
 #
1  34364  34362  "1"    0     # LINE from  CLOVIS-2 115.00  to  CLOVIS-1 115.00
1  34364  34365  "1"    0     # LINE from  CLOVIS-2 115.00  to  CLOVISJ2 115.00
4  34364     0  "3 "    0     # LOAD-DROP    CLOVIS-2 115.00  LOAD==44.76(9.09)
0
 #
 #
 # (91) BUS FAULT  34366  "SANGER"
 #
1  34366  34363  "1"    0     # LINE from  SANGER   115.00  to  CLOVISJ1 115.00
1  34366  34365  "1"    0     # LINE from  SANGER   115.00  to  CLOVISJ2 115.00
1  34366  34359  "1"    0     # LINE from  SANGER   115.00  to  AIRWAYJ2 115.00
1  34366  34368  "1"    0     # LINE from  SANGER   115.00  to  LASPALMS 115.00
1  34366  34370  "1"    0     # LINE from  SANGER   115.00  to  MC CALL  115.00
1  34366  34370  "2"    0     # LINE from  SANGER   115.00  to  MC CALL  115.00
1  34366  34370  "3"    0     # LINE from  SANGER   115.00  to  MC CALL  115.00
1  34366  34372  "1"    0     # LINE from  SANGER   115.00  to  MALAGA   115.00
1  34366  34389  "1"    0     # LINE from  SANGER   115.00  to  RAINBWTP 115.00
1  34366  34396  "1"    0     # LINE from  SANGER   115.00  to  PIEDRA 2 115.00
1  34366  34488  "1"    0     # LINE from  SANGER   115.00  to  SANGER    70.00
2  34366  34590  "1"    0     # TRAN from  SANGER   115.00  to  SANGR3T  115.00
4  34366     0  "1 "    0     # LOAD-DROP    SANGER   115.00  LOAD==24.26(4.93)
0
 #
 #
 # (92) BUS FAULT  34372  "MALAGA"
 #
1  34372  34366  "1"    0     # LINE from  MALAGA   115.00  to  SANGER   115.00
1  34372  34376  "1"    0     # LINE from  MALAGA   115.00  to  PPG      115.00
1  34372  34379  "1"    0     # LINE from  MALAGA   115.00  to  MALAGATP 115.00
1  34372  34381  "1"    0     # LINE from  MALAGA   115.00  to  KRCDP    115.00
4  34372     0  "1 "    0     # LOAD-DROP    MALAGA   115.00  LOAD==25.25(5.12)
4  34372     0  "2 "    0     # LOAD-DROP    MALAGA   115.00  LOAD==22.76(4.62)
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4  34372     0  "3 "    0     # LOAD-DROP    MALAGA   115.00  LOAD==23.13(4.69)
0
 #
 #
 # (93) BUS FAULT  34378  "GATES"
 #
2  34378  30901  "1"    0     # TRAN from  GATES    115.00  to  GATES 1M 230.00
2  34378  34552  "2"    0     # TRAN from  GATES    115.00  to  GATES     70.00
4  34378     0  "3 "    0     # LOAD-DROP    GATES    115.00  LOAD==19.45(3.95)
0
 #
 #
 # (94) BUS FAULT  34380  "REEDLEY"
 #
1  34380  34384  "1"    0     # LINE from  REEDLEY  115.00  to  GERAWAN  115.00
1  34380  34394  "1"    0     # LINE from  REEDLEY  115.00  to  PIEDRA 1 115.00
2  34380  34492  "1"    0     # TRAN from  REEDLEY  115.00  to  REEDLEY   70.00
2  34380  34492  "2"    0     # TRAN from  REEDLEY  115.00  to  REEDLEY   70.00
4  34380     0  "3 "    0     # LOAD-DROP    REEDLEY  115.00  LOAD==26.17(5.31)
0
 #
 #
 # (95) BUS FAULT  34382  "WAHTOKE"
 #
1  34382  34370  "1"    0     # LINE from  WAHTOKE  115.00  to  MC CALL  115.00
1  34382  34384  "1"    0     # LINE from  WAHTOKE  115.00  to  GERAWAN  115.00
4  34382     0  "2 "    0     # LOAD-DROP    WAHTOKE  115.00  LOAD==30.36(6.17)
4  34382     0  "3 "    0     # LOAD-DROP    WAHTOKE  115.00  LOAD==20.84(4.24)
0
 #
 #
 # (96) BUS FAULT  34400  "KNGSRVR1"
 #
1  34400  34394  "1"    0     # LINE from  KNGSRVR1 115.00  to  PIEDRA 1 115.00
2  34400  34616  "1"    0     # TRAN from  KNGSRVR1 115.00  to  KINGSRIV  13.80
0
 #
 #
 # (97) BUS FAULT  34402  "CAL AVE"
 #
1  34402  34390  "1"    0     # LINE from  CAL AVE  115.00  to  DANISHCM 115.00
1  34402  34404  "1"    0     # LINE from  CAL AVE  115.00  to  WST FRSO 115.00
4  34402     0  "1 "    0     # LOAD-DROP    CAL AVE  115.00  LOAD==28.95(5.87)
4  34402     0  "2 "    0     # LOAD-DROP    CAL AVE  115.00  LOAD==31.26(6.35)
4  34402     0  "3 "    0     # LOAD-DROP    CAL AVE  115.00  LOAD==24.42(4.96)
0
 #
 #
 # (98) BUS FAULT  34404  "WST FRSO"
 #
1  34404  34370  "1"    0     # LINE from  WST FRSO 115.00  to  MC CALL  115.00
1  34404  34402  "1"    0     # LINE from  WST FRSO 115.00  to  CAL AVE  115.00
4  34404     0  "1 "    0     # LOAD-DROP    WST FRSO 115.00  LOAD==37.55(7.63)
4  34404     0  "2 "    0     # LOAD-DROP    WST FRSO 115.00  LOAD==39.04(7.93)
0
 #
 #
 # (99) BUS FAULT  34408  "BARTON"
 #
1  34408  34359  "1"    0     # LINE from  BARTON   115.00  to  AIRWAYJ2 115.00
1  34408  34412  "1"    0     # LINE from  BARTON   115.00  to  HERNDON  115.00
4  34408     0  "1 "    0     # LOAD-DROP    BARTON   115.00  LOAD==43.27(8.79)
4  34408     0  "2 "    0     # LOAD-DROP    BARTON   115.00  LOAD==37.15(7.54)
4  34408     0  "3 "    0     # LOAD-DROP    BARTON   115.00  LOAD==26.96(5.47)
0
 #
 #
 # (100) BUS FAULT  34410  "MANCHSTR"
 #
1  34410  34357  "1"    0     # LINE from  MANCHSTR 115.00  to  AIRWAYJ1 115.00
1  34410  34412  "1"    0     # LINE from  MANCHSTR 115.00  to  HERNDON  115.00
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4  34410     0  "1 "    0     # LOAD-DROP    MANCHSTR 115.00  LOAD==25.28(5.13)
4  34410     0  "2 "    0     # LOAD-DROP    MANCHSTR 115.00  LOAD==25.47(5.18)
4  34410     0  "3 "    0     # LOAD-DROP    MANCHSTR 115.00  LOAD==36.21(7.36)
0
 #
 #
 # (101) BUS FAULT  34412  "HERNDON" 115 kV Bus Section 1
 #
1  34412  34408  "1"    0     # LINE from  HERNDON  115.00  to  BARTON   115.00
1  34412  34409  "1"    0     # LINE from  HERNDON  115.00  to  PNDLJ2   115.00
2  30835  34412  "1"    0     # TRAN from  HERNDON  230.00  to  HERNDON  115.00
3  34630      0  "1 "   0     # SYNCH CONDENSOR
0
 #
 #
 # (102) BUS FAULT  34412  "HERNDON" 115 kV Bus Section 2
 #
1  34412  34410  "1"    0     # LINE from  HERNDON  115.00  to  MANCHSTR 115.00
1  34412  34411  "1"    0     # LINE from  HERNDON  115.00  to  PNDLJ1   115.00
1  34412  34422  "1"    0     # LINE from  HERNDON  115.00  to  CHLDHOSP 115.00
0
 #
 #
 # (103) BUS FAULT  34413  "PNEDLE"
 #
1  34413  34409  "1"    0     # LINE from  PNEDLE   115.00  to  PNDLJ2   115.00
1  34413  34411  "1"    0     # LINE from  PNEDLE   115.00  to  PNDLJ1   115.00
4  34413     0  "2 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==30.74(6.25)
4  34413     0  "3 "    0     # LOAD-DROP    PNEDLE   115.00  LOAD==40.42(8.20)
0
 #
 #
 # (104) BUS FAULT  34414  "WOODWARD"
 #
1  34414  34360  "1"    0     # LINE from  WOODWARD 115.00  to  WWARD JT 115.00
1  34414  34422  "1"    0     # LINE from  WOODWARD 115.00  to  CHLDHOSP 115.00
4  34414     0  "1 "    0     # LOAD-DROP    WOODWARD 115.00  LOAD==42.25(8.58)
4  34414     0  "2 "    0     # LOAD-DROP    WOODWARD 115.00  LOAD==52.69(10.70)
4  34414     0  "3 "    0     # LOAD-DROP    WOODWARD 115.00  LOAD==44.09(8.95)
0
 #
 #
 # (105) BUS FAULT  34416  "BULLARD"
 #
1  34416  34409  "1"    0     # LINE from  BULLARD  115.00  to  PNDLJ2   115.00
1  34416  34411  "1"    0     # LINE from  BULLARD  115.00  to  PNDLJ1   115.00
4  34416     0  "1 "    0     # LOAD-DROP    BULLARD  115.00  LOAD==44.87(9.11)
4  34416     0  "2 "    0     # LOAD-DROP    BULLARD  115.00  LOAD==44.65(9.07)
4  34416     0  "3 "    0     # LOAD-DROP    BULLARD  115.00  LOAD==42.52(8.63)
0
 #
 #
 # (106) BUS FAULT  34418  "KINGSBRG" 115 kV Bus Section D
 #
1  34418  34417  "1"    0     # LINE from  KINGSBRG 115.00  to  KINGS J2 115.00
1  34418  34428  "1"    0     # LINE from  KINGSBRG 115.00  to  CONTADNA 115.00
1  34418  34420  "2"    0     # LINE from  KINGSBRG 115.00  to  CORCORAN 115.00
4  34418     0  "1 "    0     # LOAD-DROP    KINGSBRG 115.00  LOAD==39.24(7.96)
0
 #
 #
 # (107) BUS FAULT  34418  "KINGSBRG" 115 kV Bus Section E
 #
1  34418  34420  "1"    0     # LINE from  KINGSBRG 115.00  to  CORCORAN 115.00
1  34418  34423  "1"    0     # LINE from  KINGSBRG 115.00  to  GAURD J1 115.00
2  34418  34576  "2"    0     # TRAN from  KINGSBRG 115.00  to  KNGLOBUS  70.00
4  34418     0  "3 "    0     # LOAD-DROP    KINGSBRG 115.00  LOAD==24.32(4.94)
0
 #
 #
 # (108) BUS FAULT  34420  "CORCORAN"
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 #
1  34420  34391  "1"    0     # LINE from  CORCORAN 115.00  to  QUEBECTP 115.00
1  34420  34418  "1"    0     # LINE from  CORCORAN 115.00  to  KINGSBRG 115.00
1  34420  34418  "2"    0     # LINE from  CORCORAN 115.00  to  KINGSBRG 115.00
2  34420  34528  "2"    0     # TRAN from  CORCORAN 115.00  to  CORCORAN  70.00
4  34420     0  "3 "    0     # LOAD-DROP    CORCORAN 115.00  LOAD==16.21(3.30)
4  34420     0  "4 "    0     # LOAD-DROP    CORCORAN 115.00  LOAD==17.81(3.61)
0
 #
 #
 # (109) BUS FAULT  34426  "ALPAUGH"
 #
1  34426  34391  "1"    0     # LINE from  ALPAUGH  115.00  to  QUEBECTP 115.00
1  34426  34700  "1"    0     # LINE from  ALPAUGH  115.00  to  SMYRNA   115.00
4  34426     0  "2 "    0     # LOAD-DROP    ALPAUGH  115.00  LOAD==5.62(1.14)
0
 #
 #
 # (110) BUS FAULT  34430  "HENRETTA"
 #
1  34430  34521  "1"    0     # LINE from  HENRETTA 115.00  to  LEPRNOFD 115.00
2  34430  30881  "3"    0     # TRAN from  HENRETTA 115.00  to  HENRIETA 230.00
0
 #
 #
 # (111) BUS FAULT  34452  "WISHON"
 #
1  34452  34260  "1"    0     # LINE from  WISHON    70.00  to  SJNO2     70.00
1  34452  34491  "1"    0     # LINE from  WISHON    70.00  to  AUBRYTP   70.00
2  34452  34658  "1"    0     # TRAN from  WISHON    70.00  to  WISHON     2.30
0
 #
 #
 # (112) BUS FAULT  34460  "GUERNSEY"
 #
1  34460  34462  "1"    0     # LINE from  GUERNSEY  70.00  to  GUR3TPT   70.00
1  34460  34528  "1"    0     # LINE from  GUERNSEY  70.00  to  CORCORAN  70.00
4  34460     0  "1 "    0     # LOAD-DROP    GUERNSEY  70.00  LOAD==10.51(2.13)
0
 #
 #
 # (113) BUS FAULT  34464  "COPPRMNE"
 #
1  34464  34454  "1"    0     # LINE from  COPPRMNE  70.00  to  RIVERROC  70.00
1  34464  34478  "1"    0     # LINE from  COPPRMNE  70.00  to  TVY VLLY  70.00
1  34464  34638  "1"    0     # LINE from  COPPRMNE  70.00  to  FRANTDM   70.00
1  34464  34491  "1"    0     # LINE from  COPPRMNE  70.00  to  AUBRYTP   70.00
4  34464     0  "1 "    0     # LOAD-DROP    COPPRMNE  70.00  LOAD==22.96(4.67)
0
 #
 #
 # (114) BUS FAULT  34466  "BIOLA"
 #
1  34466  34264  "1"    0     # LINE from  BIOLA     70.00  to  EL PECO   70.00
1  34466  34482  "1"    0     # LINE from  BIOLA     70.00  to  OLDKERN   70.00
4  34466     0  "1 "    0     # LOAD-DROP    BIOLA     70.00  LOAD==21.80(4.43)
0
 #
 #
 # (115) BUS FAULT  34472  "SAN JOQN"
 #
1  34472  34471  "1"    0     # LINE from  SAN JOQN  70.00  to  SNJQJCT   70.00
1  34472  34473  "1"    0     # LINE from  SAN JOQN  70.00  to  SNJQTP    70.00
4  34472     0  "1 "    0     # LOAD-DROP    SAN JOQN  70.00  LOAD==6.44(1.31)
4  34472     0  "2 "    0     # LOAD-DROP    SAN JOQN  70.00  LOAD==3.92(0.79)
0
 #
 #
 # (116) BUS FAULT  34474  "HELM"
 #
1  34474  34471  "1"    0     # LINE from  HELM      70.00  to  SNJQJCT   70.00
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1  34474  34473  "1"    0     # LINE from  HELM      70.00  to  SNJQTP    70.00
1  34474  34556  "1"    0     # LINE from  HELM      70.00  to  STRD JCT  70.00
1  34474  34564  "1"    0     # LINE from  HELM      70.00  to  STROUD    70.00
2  34474  30873  "1"    0     # TRAN from  HELM      70.00  to  HELM     230.00
0
 #
 #
 # (117) BUS FAULT  34478  "TVY VLLY"
 #
1  34478  34464  "1"    0     # LINE from  TVY VLLY  70.00  to  COPPRMNE  70.00
1  34478  34492  "1"    0     # LINE from  TVY VLLY  70.00  to  REEDLEY   70.00
4  34478     0  "1 "    0     # LOAD-DROP    TVY VLLY  70.00  LOAD==10.27(2.09)
0
 #
 #
 # (118) BUS FAULT  34480  "KEARNEY"
 #
1  34480  34481  "1"    0     # LINE from  KEARNEY   70.00  to  FRWWTAP   70.00
1  34480  34482  "1"    0     # LINE from  KEARNEY   70.00  to  OLDKERN   70.00
1  34480  34512  "1"    0     # LINE from  KEARNEY   70.00  to  CARUTHRS  70.00
2  34480  30830  "2"    0     # TRAN from  KEARNEY   70.00  to  KEARNEY  230.00
0
 #
 #
 # (119) BUS FAULT  34484  "KERMAN"
 #
1  34484  34475  "1"    0     # LINE from  KERMAN    70.00  to  AGRCJCT   70.00
1  34484  34481  "1"    0     # LINE from  KERMAN    70.00  to  FRWWTAP   70.00
4  34484     0  "1 "    0     # LOAD-DROP    KERMAN    70.00  LOAD==19.44(3.95)
4  34484     0  "2 "    0     # LOAD-DROP    KERMAN    70.00  LOAD==11.78(2.39)
0
 #
 #
 # (120) BUS FAULT  34486  "CALIFRNV"
 #
1  34486  34488  "1"    0     # LINE from  CALIFRNV  70.00  to  SANGER    70.00
1  34486  34488  "2"    0     # LINE from  CALIFRNV  70.00  to  SANGER    70.00
0
 #
 #
 # (121) BUS FAULT  34488  "SANGER"
 #
1  34488  34486  "1"    0     # LINE from  SANGER    70.00  to  CALIFRNV  70.00
1  34488  34486  "2"    0     # LINE from  SANGER    70.00  to  CALIFRNV  70.00
1  34488  34366  "1"    0     # LINE from  SANGER    70.00  to  SANGER   115.00
1  34488  34487  "1"    0     # LINE from  SANGER    70.00  to  SNGRJCT   70.00
2  34488  34590  "1"    0     # TRAN from  SANGER    70.00  to  SANGR3T  115.00
0
 #
 #
 # (122) BUS FAULT  34492  "REEDLEY"
 #
1  34492  34478  "1"    0     # LINE from  REEDLEY   70.00  to  TVY VLLY  70.00
1  34492  34490  "1"    0     # LINE from  REEDLEY   70.00  to  PARLIER   70.00
1  34492  34497  "1"    0     # LINE from  REEDLEY   70.00  to  DNUBAJCT  70.00
1  34492  34526  "1"    0     # LINE from  REEDLEY   70.00  to  ORSI JCT  70.00
2  34492  34380  "1"    0     # TRAN from  REEDLEY   70.00  to  REEDLEY  115.00
2  34492  34380  "2"    0     # TRAN from  REEDLEY   70.00  to  REEDLEY  115.00
4  34492     0  "1 "    0     # LOAD-DROP    REEDLEY   70.00  LOAD==17.42(3.54)
0
 #
 #
 # (123) BUS FAULT  34500  "DINUBA"
 #
1  34500  34496  "1"    0     # LINE from  DINUBA    70.00  to  STCRRL J  70.00
1  34500  34497  "1"    0     # LINE from  DINUBA    70.00  to  DNUBAJCT  70.00
4  34500     0  "1 "    0     # LOAD-DROP    DINUBA    70.00  LOAD==19.23(3.91)
4  34500     0  "2 "    0     # LOAD-DROP    DINUBA    70.00  LOAD==9.33(1.90)
0
 #
 #
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 # (124) BUS FAULT  34512  "CARUTHRS"
 #
1  34512  34480  "1"    0     # LINE from  CARUTHRS  70.00  to  KEARNEY   70.00
1  34512  34510  "1"    0     # LINE from  CARUTHRS  70.00  to  CMDN JCT  70.00
4  34512     0  "1 "    0     # LOAD-DROP    CARUTHRS  70.00  LOAD==19.63(3.98)
0
 #
 #
 # (125) BUS FAULT  34518  "LEMOORE"
 #
1  34518  34520  "1"    0     # LINE from  LEMOORE   70.00  to  LPRNO TP  70.00
1  34518  34522  "1"    0     # LINE from  LEMOORE   70.00  to  HNFRD SW  70.00
4  34518     0  "1 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==18.86(3.83)
4  34518     0  "2 "    0     # LOAD-DROP    LEMOORE   70.00  LOAD==32.81(6.66)
0
 #
 #
 # (126) BUS FAULT  34528  "CORCORAN"
 #
1  34528  34460  "1"    0     # LINE from  CORCORAN  70.00  to  GUERNSEY  70.00
1  34528  34530  "1"    0     # LINE from  CORCORAN  70.00  to  BSWLL TP  70.00
2  34528  34420  "2"    0     # TRAN from  CORCORAN  70.00  to  CORCORAN 115.00
0
 #
 #
 # (127) BUS FAULT  34540  "HENRITTA"
 #
1  34540  34514  "1"    0     # LINE from  HENRITTA  70.00  to  MUSLSLGH  70.00
1  34540  34520  "1"    0     # LINE from  HENRITTA  70.00  to  LPRNO TP  70.00
1  34540  34537  "1"    0     # LINE from  HENRITTA  70.00  to  GWF_HENR  70.00
1  34540  34542  "1"    0     # LINE from  HENRITTA  70.00  to  JCBSCRNR  70.00
1  34540  34544  "1"    0     # LINE from  HENRITTA  70.00  to  TLRE LKE  70.00
2  34540  30881  "2"    0     # TRAN from  HENRITTA  70.00  to  HENRIETA 230.00
2  34540  30881  "4"    0     # TRAN from  HENRITTA  70.00  to  HENRIETA 230.00
4  34540     0  "1 "    0     # LOAD-DROP    HENRITTA  70.00  LOAD==8.20(1.67)
0
 #
 #
 # (128) BUS FAULT  34544  "TLRE LKE"
 #
1  34544  34540  "1"    0     # LINE from  TLRE LKE  70.00  to  HENRITTA  70.00
1  34544  34550  "1"    0     # LINE from  TLRE LKE  70.00  to  CHEVPLIN  70.00
1  34544  34580  "1"    0     # LINE from  TLRE LKE  70.00  to  BDGR HLL  70.00
4  34544     0  "1 "    0     # LOAD-DROP    TLRE LKE  70.00  LOAD==6.79(1.38)
0
 #
 #
 # (129) BUS FAULT  34552  "GATES"
 #
1  34552  34548  "1"    0     # LINE from  GATES     70.00  to  KETTLEMN  70.00
1  34552  34184  "1"    0     # LINE from  GATES     70.00  to  GATS2_TP  70.00
1  34552  34558  "1"    0     # LINE from  GATES     70.00  to  HURON     70.00
1  34552  34558  "2"    0     # LINE from  GATES     70.00  to  HURON     70.00
1  34552  34578  "1"    0     # LINE from  GATES     70.00  to  JACALITO  70.00
2  34552  34378  "2"    0     # TRAN from  GATES     70.00  to  GATES    115.00
0
 #
 #
 # (130) BUS FAULT  34558  "HURON"
 #
1  34558  34552  "1"    0     # LINE from  HURON     70.00  to  GATES     70.00
1  34558  34552  "2"    0     # LINE from  HURON     70.00  to  GATES     70.00
1  34558  34560  "1"    0     # LINE from  HURON     70.00  to  CALFLAX   70.00
4  34558 34552  "1 "    1     # LOAD-TRANSFER  HURON     70.00  TO  GATES     70.00
LOAD==15.33(3.11)
0
 #
 #
 # (131) BUS FAULT  34562  "SCHLNDLR"
 #
1  34562  34556  "1"    0     # LINE from  SCHLNDLR  70.00  to  STRD JCT  70.00
```

```
1  34562  34560  "1"    0     # LINE from  SCHLNDLR  70.00  to  CALFLAX   70.00
1  34562  34566  "1"    0     # LINE from  SCHLNDLR  70.00  to  PLSNTVLY  70.00
2  34562  34354  "1"    0     # TRAN from  SCHLNDLR  70.00  to  SCHINDLR 115.00
4  34562     0  "1 "    0     # LOAD-DROP    SCHLNDLR  70.00  LOAD==9.59(1.95)
0
 #
 #
 # (132) BUS FAULT  34564  "STROUD"
 #
1  34564  34556  "1"    0     # LINE from  STROUD    70.00  to  STRD JCT  70.00
1  34564  34474  "1"    0     # LINE from  STROUD    70.00  to  HELM      70.00
4  34564     0  "1 "    0     # LOAD-DROP    STROUD    70.00  LOAD==13.09(2.66)
0
 #
 #
 # (133) BUS FAULT  34570  "COLNGA 2"
 #
1  34570  34184  "1"    0     # LINE from  COLNGA 2  70.00  to  GATS2_TP  70.00
1  34570  34566  "1"    0     # LINE from  COLNGA 2  70.00  to  PLSNTVLY  70.00
1  34570  34572  "1"    0     # LINE from  COLNGA 2  70.00  to  TORNADO   70.00
2  34570  34652  "1"    0     # TRAN from  COLNGA 2  70.00  to  CHV.COAL   9.11
4  34570     0  "1 "    0     # LOAD-DROP    COLNGA 2  70.00  LOAD==8.23(1.67)
0
 #
 #
 # (134) BUS FAULT  34574  "COLNGA 1"
 #
1  34574  34572  "1"    0     # LINE from  COLNGA 1  70.00  to  TORNADO   70.00
1  34574  34578  "1"    0     # LINE from  COLNGA 1  70.00  to  JACALITO  70.00
1  34574  36354  "1"    0     # LINE from  COLNGA 1  70.00  to  SAN MIGL  70.00
4  34574     0  "1 "    0     # LOAD-DROP    COLNGA 1  70.00  LOAD==9.34(1.90)
4  34574     0  "2 "    0     # LOAD-DROP    COLNGA 1  70.00  LOAD==9.99(2.03)
0
 #
 #
 # (135) BUS FAULT  34576  "KNGLOBUS"
 #
1  34576  34456  "1"    0     # LINE from  KNGLOBUS  70.00  to  HRDWK TP  70.00
1  34576  34508  "1"    0     # LINE from  KNGLOBUS  70.00  to  CAMDEN    70.00
2  34576  34418  "2"    0     # TRAN from  KNGLOBUS  70.00  to  KINGSBRG 115.00
0
 #
 #
-1
 # EOF
```

Appendix C

Power Flow Results

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category A--Normal System (no Contingencies)--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	675	Amps	NORMAL	787	116.7	876	129.7	13
WARNERVL	230	COTTLE B	230	#1	1	675	Amps	NORMAL	814	120.6	882	130.6	10
COTTLE B	230	BELLOTA	230	#1	1	675	Amps	NORMAL	752	111.4	820	121.4	10
BORDEN	230	STOREY 1	230	#1	1	675	Amps	NORMAL	884	131	944	139.7	8.8
STOREY 1	230	WILSON	230	#1	1	743	Amps	NORMAL	808	108.8	868	116.8	8
STOREY 2	230	BORDEN	230	#1	1	675	Amps	NORMAL	754	111.7	805	119.2	7.5
STOREY 2	230	WILSON	230	#1	1	675	Amps	NORMAL	686	101.7	737	109.1	7.5

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WILSON	230	WARNERVL	230	#1	1	286	793	Amps	EMERGENCY	912	115	1057	133.3	18.3
WARNERVL	230	COTTLE B	230	#1	1	286	793	Amps	EMERGENCY	905	114	1014	127.8	13.8
COTTLE B	230	BELLOTA	230	#1	1	286	793	Amps	EMERGENCY	842	106.2	951	119.88	13.7
WILSON	230	WARNERVL	230	#1	1	131	793	Amps	EMERGENCY	937	118.2	1045	131.7	13.5
WILSON	230	WARNERVL	230	#1	1	185	793	Amps	EMERGENCY	828	104.4	935	117.87	13.5
WILSON	230	WARNERVL	230	#1	1	166	793	Amps	EMERGENCY	830	104.7	937	118.19	13.5
WILSON	230	WARNERVL	230	#1	1	2	793	Amps	EMERGENCY	884	111.5	988	124.56	13.1
WILSON	230	WARNERVL	230	#1	1	152	793	Amps	EMERGENCY	823	103.8	926	116.77	13
WILSON	230	WARNERVL	230	#1	1	171	793	Amps	EMERGENCY	820	103.4	923	116.38	13
STOREY 1	230	BORDEN	230	#1	1	286	793	Amps	EMERGENCY	972	122.5	1073	135.22	12.7
STOREY 1	230	WILSON	230	#1	1	286	851	Amps	EMERGENCY	896	105.3	998	117.26	11.9
WILSON	230	WARNERVL	230	#1	1	3	793	Amps	EMERGENCY	816	102.8	908	114.51	11.7
WILSON	230	WARNERVL	230	#1	1	5	793	Amps	EMERGENCY	812	102.3	903	113.84	11.5

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WILSON	230	WARNERVL	230	#1	1	62	793	Amps	EMERGENCY	812	102.4	903	113.87	11.5
WILSON	230	WARNERVL	230	#1	1	6	793	Amps	EMERGENCY	810	102.1	901	113.55	11.5
WILSON	230	WARNERVL	230	#1	1	7	793	Amps	EMERGENCY	806	101.6	897	113.07	11.5
WILSON	230	WARNERVL	230	#1	1	207	793	Amps	EMERGENCY	792	99.8	882	111.23	11.4
WILSON	230	WARNERVL	230	#1	1	416	793	Amps	EMERGENCY	845	106.5	935	117.88	11.4
WILSON	230	WARNERVL	230	#1	1	12	793	Amps	EMERGENCY	823	103.8	913	115.14	11.3
WILSON	230	WARNERVL	230	#1	1	206	793	Amps	EMERGENCY	794	100	884	111.39	11.3
STOREY 1	230	BORDEN	230	#1	1	127	793	Amps	EMERGENCY	1380	174	1470	185.32	11.3
STOREY 1	230	BORDEN	230	#1	1	164	793	Amps	EMERGENCY	1353	170.5	1443	181.86	11.3
WILSON	230	WARNERVL	230	#1	1	189	793	Amps	EMERGENCY	828	104.4	918	115.7	11.3
WILSON	230	WARNERVL	230	#1	1	11	793	Amps	EMERGENCY	889	112	978	123.33	11.3
WILSON	230	WARNERVL	230	#1	1	4	793	Amps	EMERGENCY	794	100.1	884	111.42	11.3
STOREY 1	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	1314	165.6	1403	176.93	11.3
WILSON	230	WARNERVL	230	#1	1	427	793	Amps	EMERGENCY	878	110.7	968	122.04	11.3
WILSON	230	WARNERVL	230	#1	1	179	793	Amps	EMERGENCY	820	103.3	909	114.62	11.3
WILSON	230	WARNERVL	230	#1	1	160	793	Amps	EMERGENCY	826	104.1	915	115.39	11.3
WILSON	230	WARNERVL	230	#1	1	197	793	Amps	EMERGENCY	835	105.2	924	116.47	11.2
BORDEN	230	STOREY 1	230	#1	1	145	793	Amps	EMERGENCY	1055	133	1144	144.22	11.2
WILSON	230	WARNERVL	230	#1	1	196	793	Amps	EMERGENCY	922	116.3	1012	127.54	11.2
STOREY 1	230	BORDEN	230	#1	1	183	793	Amps	EMERGENCY	1273	160.4	1362	171.68	11.2
WILSON	230	WARNERVL	230	#1	1	389	793	Amps	EMERGENCY	853	107.6	942	118.8	11.2
WILSON	230	WARNERVL	230	#1	1	372	793	Amps	EMERGENCY	860	108.4	948	119.57	11.2
WILSON	230	WARNERVL	230	#1	1	63	793	Amps	EMERGENCY	791	99.8	880	110.96	11.2
WILSON	230	WARNERVL	230	#1	1	125	793	Amps	EMERGENCY	795	100.3	884	111.39	11.1
WILSON	230	WARNERVL	230	#1	1	44	793	Amps	EMERGENCY	795	100.2	883	111.32	11.1
WILSON	230	WARNERVL	230	#1	1	43	793	Amps	EMERGENCY	793	99.9	881	111.02	11.1
WILSON	230	WARNERVL	230	#1	1	256	793	Amps	EMERGENCY	808	101.8	896	112.93	11.1

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WILSON	230	WARNERVL	230	#1	1	265	793	Amps	EMERGENCY	799	100.7	887	111.81	11.1
WILSON	230	WARNERVL	230	#1	1	362	793	Amps	EMERGENCY	799	100.7	887	111.81	11.1
WILSON	230	WARNERVL	230	#1	1	49	793	Amps	EMERGENCY	790	99.5	878	110.63	11.1
WILSON	230	WARNERVL	230	#1	1	361	793	Amps	EMERGENCY	793	100	881	111.09	11.1
WILSON	230	WARNERVL	230	#1	1	264	793	Amps	EMERGENCY	792	99.9	880	110.97	11.1
WILSON	230	WARNERVL	230	#1	1	24	793	Amps	EMERGENCY	805	101.5	893	112.56	11.1
WILSON	230	WARNERVL	230	#1	1	45	793	Amps	EMERGENCY	792	99.9	880	110.96	11.1
WILSON	230	WARNERVL	230	#1	1	26	793	Amps	EMERGENCY	806	101.6	894	112.71	11.1
WILSON	230	WARNERVL	230	#1	1	53	793	Amps	EMERGENCY	794	100.1	882	111.14	11.1
WILSON	230	WARNERVL	230	#1	1	249	793	Amps	EMERGENCY	795	100.2	882	111.23	11.1
WILSON	230	WARNERVL	230	#1	1	250	793	Amps	EMERGENCY	793	100	881	111.09	11.1
WILSON	230	WARNERVL	230	#1	1	270	793	Amps	EMERGENCY	791	99.7	879	110.77	11.1
WILSON	230	WARNERVL	230	#1	1	54	793	Amps	EMERGENCY	796	100.3	884	111.4	11.1
WILSON	230	WARNERVL	230	#1	1	262	793	Amps	EMERGENCY	794	100.1	882	111.17	11.1
WILSON	230	WARNERVL	230	#1	1	269	793	Amps	EMERGENCY	790	99.6	878	110.66	11.1
WILSON	230	WARNERVL	230	#1	1	289	793	Amps	EMERGENCY	794	100.1	881	111.11	11.1
WILSON	230	WARNERVL	230	#1	1	40	793	Amps	EMERGENCY	792	99.8	880	110.91	11.1
WILSON	230	WARNERVL	230	#1	1	59	793	Amps	EMERGENCY	791	99.7	879	110.78	11.1
WILSON	230	WARNERVL	230	#1	1	242	793	Amps	EMERGENCY	789	99.5	877	110.55	11.1
WILSON	230	WARNERVL	230	#1	1	243	793	Amps	EMERGENCY	791	99.7	879	110.78	11.1
WILSON	230	WARNERVL	230	#1	1	244	793	Amps	EMERGENCY	792	99.9	880	110.94	11.1
WILSON	230	WARNERVL	230	#1	1	246	793	Amps	EMERGENCY	789	99.4	877	110.51	11.1
WILSON	230	WARNERVL	230	#1	1	297	793	Amps	EMERGENCY	789	99.5	877	110.52	11.1
WILSON	230	WARNERVL	230	#1	1	50	793	Amps	EMERGENCY	790	99.5	877	110.61	11.1
WILSON	230	WARNERVL	230	#1	1	51	793	Amps	EMERGENCY	789	99.5	877	110.54	11.1
WILSON	230	WARNERVL	230	#1	1	82	793	Amps	EMERGENCY	789	99.4	876	110.47	11.1
WILSON	230	WARNERVL	230	#1	1	226	793	Amps	EMERGENCY	790	99.6	878	110.63	11.1

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WILSON	230	WARNERVL	230	#1	1	231	793	Amps	EMERGENCY	789	99.4	877	110.5	11.1
WILSON	230	WARNERVL	230	#1	1	261	793	Amps	EMERGENCY	790	99.6	878	110.63	11.1
WILSON	230	WARNERVL	230	#1	1	266	793	Amps	EMERGENCY	790	99.6	878	110.71	11.1
WILSON	230	WARNERVL	230	#1	1	268	793	Amps	EMERGENCY	788	99.4	876	110.44	11.1
WILSON	230	WARNERVL	230	#1	1	273	793	Amps	EMERGENCY	789	99.4	876	110.47	11.1
WILSON	230	WARNERVL	230	#1	1	295	793	Amps	EMERGENCY	790	99.6	878	110.69	11.1
WILSON	230	WARNERVL	230	#1	1	73	793	Amps	EMERGENCY	791	99.7	879	110.76	11.1
WILSON	230	WARNERVL	230	#1	1	74	793	Amps	EMERGENCY	791	99.7	879	110.76	11.1
WILSON	230	WARNERVL	230	#1	1	228	793	Amps	EMERGENCY	789	99.4	876	110.47	11.1
WILSON	230	WARNERVL	230	#1	1	36	793	Amps	EMERGENCY	790	99.6	878	110.68	11.1
WILSON	230	WARNERVL	230	#1	1	209	793	Amps	EMERGENCY	790	99.6	878	110.68	11.1
WILSON	230	WARNERVL	230	#1	1	240	793	Amps	EMERGENCY	789	99.5	877	110.58	11.1
WILSON	230	WARNERVL	230	#1	1	255	793	Amps	EMERGENCY	789	99.4	876	110.47	11.1
WILSON	230	WARNERVL	230	#1	1	263	793	Amps	EMERGENCY	792	99.9	880	110.91	11
WILSON	230	WARNERVL	230	#1	1	257	793	Amps	EMERGENCY	789	99.4	876	110.46	11
WILSON	230	WARNERVL	230	#1	1	299	793	Amps	EMERGENCY	790	99.6	877	110.62	11
WILSON	230	WARNERVL	230	#1	1	58	793	Amps	EMERGENCY	797	100.4	884	111.48	11
WILSON	230	WARNERVL	230	#1	1	237	793	Amps	EMERGENCY	796	100.3	883	111.36	11
WILSON	230	WARNERVL	230	#1	1	275	793	Amps	EMERGENCY	792	99.9	880	110.93	11
WILSON	230	WARNERVL	230	#1	1	277	793	Amps	EMERGENCY	790	99.5	877	110.58	11
WILSON	230	WARNERVL	230	#1	1	360	793	Amps	EMERGENCY	791	99.7	878	110.75	11
WILSON	230	WARNERVL	230	#1	1	247	793	Amps	EMERGENCY	788	99.4	876	110.43	11
WILSON	230	WARNERVL	230	#1	1	253	793	Amps	EMERGENCY	790	99.6	878	110.68	11
WILSON	230	WARNERVL	230	#1	1	274	793	Amps	EMERGENCY	790	99.5	877	110.58	11
WILSON	230	WARNERVL	230	#1	1	292	793	Amps	EMERGENCY	799	100.7	886	111.72	11
WILSON	230	WARNERVL	230	#1	1	276	793	Amps	EMERGENCY	789	99.5	877	110.53	11
WILSON	230	WARNERVL	230	#1	1	281	793	Amps	EMERGENCY	797	100.5	885	111.56	11

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WILSON	230	WARNERVL	230	#1	1	280	793	Amps	EMERGENCY	798	100.6	885	111.62	11
WILSON	230	WARNERVL	230	#1	1	241	793	Amps	EMERGENCY	798	100.6	886	111.64	11
WILSON	230	WARNERVL	230	#1	1	68	793	Amps	EMERGENCY	802	101.1	889	112.09	11
WILSON	230	WARNERVL	230	#1	1	67	793	Amps	EMERGENCY	802	101.2	890	112.15	11
WILSON	230	WARNERVL	230	#1	1	285	793	Amps	EMERGENCY	790	99.6	877	110.6	11
WILSON	230	WARNERVL	230	#1	1	233	793	Amps	EMERGENCY	794	100.1	881	111.08	11
WILSON	230	WARNERVL	230	#1	1	235	793	Amps	EMERGENCY	795	100.2	882	111.23	11
WILSON	230	WARNERVL	230	#1	1	212	793	Amps	EMERGENCY	789	99.5	876	110.47	11
WILSON	230	WARNERVL	230	#1	1	29	793	Amps	EMERGENCY	805	101.5	892	112.43	10.9
WILSON	230	WARNERVL	230	#1	1	37	793	Amps	EMERGENCY	797	100.5	884	111.43	10.9
WILSON	230	WARNERVL	230	#1	1	70	793	Amps	EMERGENCY	794	100.1	881	111.07	10.9
STOREY 2	230	BORDEN	230	#1	1	286	793	Amps	EMERGENCY	829	104.5	916	115.44	10.9
WILSON	230	WARNERVL	230	#1	1	25	793	Amps	EMERGENCY	794	100	880	110.95	10.9
WILSON	230	WARNERVL	230	#1	1	208	793	Amps	EMERGENCY	794	100	880	110.95	10.9
WILSON	230	WARNERVL	230	#1	1	30	793	Amps	EMERGENCY	810	102.1	897	113.05	10.9
STOREY 2	230	WILSON	230	#1	1	286	793	Amps	EMERGENCY	761	95.9	847	106.75	10.8
WARNERVL	230	COTTLE B	230	#1	1	185	793	Amps	EMERGENCY	863	108.8	948	119.51	10.7
WARNERVL	230	COTTLE B	230	#1	1	131	793	Amps	EMERGENCY	976	123.1	1061	133.82	10.7
WARNERVL	230	COTTLE B	230	#1	1	166	793	Amps	EMERGENCY	866	109.2	951	119.87	10.7
COTTLE B	230	BELLOTA	230	#1	1	185	793	Amps	EMERGENCY	801	101	886	111.7	10.7
COTTLE B	230	BELLOTA	230	#1	1	131	793	Amps	EMERGENCY	914	115.2	999	125.88	10.7
STOREY 2	230	BORDEN	230	#1	1	165	793	Amps	EMERGENCY	1264	159.4	1349	170.05	10.7
STOREY 2	230	BORDEN	230	#1	1	128	793	Amps	EMERGENCY	1290	162.7	1375	173.33	10.7
COTTLE B	230	BELLOTA	230	#1	1	166	793	Amps	EMERGENCY	805	101.4	889	112.08	10.7
STOREY 2	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	1228	154.8	1312	165.42	10.6
STOREY 1	230	WILSON	230	#1	1	127	851	Amps	EMERGENCY	1306	153.5	1396	164.07	10.6
STOREY 1	230	WILSON	230	#1	1	164	851	Amps	EMERGENCY	1278	150.2	1368	160.78	10.6

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	WILSON	230	#1	1	165	793	Amps	EMERGENCY	1195	150.7	1280	161.32	10.6
STOREY 2	230	WILSON	230	#1	1	128	793	Amps	EMERGENCY	1221	153.9	1305	164.56	10.6
STOREY 1	230	WILSON	230	#1	1	15	851	Amps	EMERGENCY	1239	145.6	1329	156.16	10.6
STOREY 2	230	WILSON	230	#1	1	16	793	Amps	EMERGENCY	1159	146.1	1243	156.7	10.6
STOREY 2	230	BORDEN	230	#1	1	184	793	Amps	EMERGENCY	1189	149.9	1273	160.46	10.6
STOREY 2	230	BORDEN	230	#1	1	146	793	Amps	EMERGENCY	985	124.2	1069	134.78	10.6
STOREY 1	230	WILSON	230	#1	1	183	851	Amps	EMERGENCY	1197	140.7	1287	151.23	10.5
STOREY 1	230	WILSON	230	#1	1	145	851	Amps	EMERGENCY	980	115.2	1069	125.68	10.5
STOREY 2	230	WILSON	230	#1	1	184	793	Amps	EMERGENCY	1120	141.2	1204	151.77	10.5
STOREY 2	230	WILSON	230	#1	1	146	793	Amps	EMERGENCY	918	115.7	1001	126.2	10.5
WILSON	230	WARNERVL	230	#1	1	203	793	Amps	EMERGENCY	841	106	923	116.33	10.3
WARNERVL	230	COTTLE B	230	#1	1	3	793	Amps	EMERGENCY	836	105.4	908	114.47	9
COTTLE B	230	BELLOTA	230	#1	1	3	793	Amps	EMERGENCY	774	97.6	846	106.6	9
WARNERVL	230	COTTLE B	230	#1	1	2	793	Amps	EMERGENCY	832	104.9	903	113.79	8.9
COTTLE B	230	BELLOTA	230	#1	1	2	793	Amps	EMERGENCY	770	97.1	840	105.94	8.9
WARNERVL	230	COTTLE B	230	#1	1	207	793	Amps	EMERGENCY	817	103	887	111.8	8.8
WARNERVL	230	COTTLE B	230	#1	1	5	793	Amps	EMERGENCY	827	104.3	897	113.09	8.8
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	828	104.3	897	113.12	8.8
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	826	104.2	896	112.95	8.8
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	824	103.9	894	112.68	8.8
COTTLE B	230	BELLOTA	230	#1	1	207	793	Amps	EMERGENCY	755	95.2	825	103.94	8.8
WARNERVL	230	COTTLE B	230	#1	1	206	793	Amps	EMERGENCY	818	103.2	888	111.92	8.8
COTTLE B	230	BELLOTA	230	#1	1	5	793	Amps	EMERGENCY	765	96.5	835	105.23	8.8
WARNERVL	230	COTTLE B	230	#1	1	4	793	Amps	EMERGENCY	819	103.3	888	112	8.7
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	766	96.5	835	105.26	8.7
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	764	96.4	834	105.09	8.7
WARNERVL	230	COTTLE B	230	#1	1	63	793	Amps	EMERGENCY	819	103.3	888	112.01	8.7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	762	96.1	831	104.82	8.7
WARNERVL	230	COTTLE B	230	#1	1	417	793	Amps	EMERGENCY	828	104.4	898	113.16	8.7
WARNERVL	230	COTTLE B	230	#1	1	12	793	Amps	EMERGENCY	837	105.5	906	114.23	8.7
COTTLE B	230	BELLOTA	230	#1	1	206	793	Amps	EMERGENCY	756	95.4	825	104.06	8.7
WARNERVL	230	COTTLE B	230	#1	1	420	793	Amps	EMERGENCY	831	104.8	900	113.51	8.7
COTTLE B	230	BELLOTA	230	#1	1	4	793	Amps	EMERGENCY	757	95.4	826	104.14	8.7
WARNERVL	230	COTTLE B	230	#1	1	189	793	Amps	EMERGENCY	840	105.9	909	114.58	8.7
WARNERVL	230	COTTLE B	230	#1	1	416	793	Amps	EMERGENCY	871	109.8	940	118.48	8.7
WARNERVL	230	COTTLE B	230	#1	1	11	793	Amps	EMERGENCY	882	111.2	951	119.85	8.7
COTTLE B	230	BELLOTA	230	#1	1	63	793	Amps	EMERGENCY	757	95.5	826	104.16	8.7
WARNERVL	230	COTTLE B	230	#1	1	179	793	Amps	EMERGENCY	833	105	902	113.65	8.7
COTTLE B	230	BELLOTA	230	#1	1	417	793	Amps	EMERGENCY	766	96.6	835	105.28	8.7
COTTLE B	230	BELLOTA	230	#1	1	12	793	Amps	EMERGENCY	775	97.7	844	106.37	8.7
WARNERVL	230	COTTLE B	230	#1	1	428	793	Amps	EMERGENCY	834	105.2	903	113.83	8.7
COTTLE B	230	BELLOTA	230	#1	1	420	793	Amps	EMERGENCY	769	97	838	105.63	8.7
WARNERVL	230	COTTLE B	230	#1	1	197	793	Amps	EMERGENCY	846	106.6	914	115.26	8.7
WARNERVL	230	COTTLE B	230	#1	1	160	793	Amps	EMERGENCY	838	105.7	907	114.31	8.7
COTTLE B	230	BELLOTA	230	#1	1	189	793	Amps	EMERGENCY	778	98.1	847	106.72	8.7
COTTLE B	230	BELLOTA	230	#1	1	416	793	Amps	EMERGENCY	809	101.9	877	110.59	8.6
WARNERVL	230	COTTLE B	230	#1	1	427	793	Amps	EMERGENCY	893	112.5	961	121.18	8.6
COTTLE B	230	BELLOTA	230	#1	1	11	793	Amps	EMERGENCY	820	103.3	888	111.97	8.6
WARNERVL	230	COTTLE B	230	#1	1	196	793	Amps	EMERGENCY	904	113.9	972	122.58	8.6
COTTLE B	230	BELLOTA	230	#1	1	179	793	Amps	EMERGENCY	771	97.2	839	105.8	8.6
WARNERVL	230	COTTLE B	230	#1	1	389	793	Amps	EMERGENCY	855	107.7	923	116.37	8.6
COTTLE B	230	BELLOTA	230	#1	1	428	793	Amps	EMERGENCY	772	97.3	840	105.96	8.6
COTTLE B	230	BELLOTA	230	#1	1	197	793	Amps	EMERGENCY	784	98.8	852	107.4	8.6
WARNERVL	230	COTTLE B	230	#1	1	372	793	Amps	EMERGENCY	860	108.4	928	117.02	8.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
COTTLE B	230	BELLOTA	230	#1	1	160	793	Amps	EMERGENCY	776	97.9	845	106.47	8.6
COTTLE B	230	BELLOTA	230	#1	1	427	793	Amps	EMERGENCY	830	104.7	899	113.28	8.6
WARNERVL	230	COTTLE B	230	#1	1	125	793	Amps	EMERGENCY	820	103.3	888	111.92	8.6
WARNERVL	230	COTTLE B	230	#1	1	44	793	Amps	EMERGENCY	819	103.3	887	111.85	8.6
COTTLE B	230	BELLOTA	230	#1	1	196	793	Amps	EMERGENCY	842	106.1	910	114.7	8.6
COTTLE B	230	BELLOTA	230	#1	1	389	793	Amps	EMERGENCY	793	99.9	861	108.51	8.6
WARNERVL	230	COTTLE B	230	#1	1	24	793	Amps	EMERGENCY	826	104.1	894	112.67	8.6
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	818	103.1	885	111.63	8.6
WARNERVL	230	COTTLE B	230	#1	1	26	793	Amps	EMERGENCY	827	104.2	895	112.78	8.6
WARNERVL	230	COTTLE B	230	#1	1	265	793	Amps	EMERGENCY	822	103.7	890	112.24	8.6
WARNERVL	230	COTTLE B	230	#1	1	362	793	Amps	EMERGENCY	822	103.7	890	112.24	8.6
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	815	102.8	883	111.34	8.6
WARNERVL	230	COTTLE B	230	#1	1	256	793	Amps	EMERGENCY	829	104.5	897	113.03	8.6
COTTLE B	230	BELLOTA	230	#1	1	372	793	Amps	EMERGENCY	798	100.6	866	109.17	8.6
WARNERVL	230	COTTLE B	230	#1	1	361	793	Amps	EMERGENCY	818	103.2	886	111.71	8.6
WARNERVL	230	COTTLE B	230	#1	1	45	793	Amps	EMERGENCY	817	103.1	885	111.61	8.6
WARNERVL	230	COTTLE B	230	#1	1	264	793	Amps	EMERGENCY	818	103.1	885	111.62	8.6
WARNERVL	230	COTTLE B	230	#1	1	250	793	Amps	EMERGENCY	818	103.1	886	111.69	8.5
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	818	103.2	886	111.71	8.5
WARNERVL	230	COTTLE B	230	#1	1	249	793	Amps	EMERGENCY	819	103.2	887	111.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	270	793	Amps	EMERGENCY	817	102.9	884	111.49	8.5
WARNERVL	230	COTTLE B	230	#1	1	289	793	Amps	EMERGENCY	818	103.2	886	111.71	8.5
WARNERVL	230	COTTLE B	230	#1	1	297	793	Amps	EMERGENCY	815	102.7	883	111.28	8.5
WARNERVL	230	COTTLE B	230	#1	1	262	793	Amps	EMERGENCY	819	103.2	886	111.75	8.5
WARNERVL	230	COTTLE B	230	#1	1	266	793	Amps	EMERGENCY	816	102.9	884	111.42	8.5
COTTLE B	230	BELLOTA	230	#1	1	44	793	Amps	EMERGENCY	757	95.4	825	103.99	8.5
COTTLE B	230	BELLOTA	230	#1	1	125	793	Amps	EMERGENCY	758	95.5	825	104.06	8.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WARNERVL	230	COTTLE B	230	#1	1	50	793	Amps	EMERGENCY	816	102.9	884	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	820	103.4	888	111.92	8.5
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	816	102.9	884	111.46	8.5
WARNERVL	230	COTTLE B	230	#1	1	73	793	Amps	EMERGENCY	816	102.9	884	111.45	8.5
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	816	102.9	884	111.45	8.5
WARNERVL	230	COTTLE B	230	#1	1	243	793	Amps	EMERGENCY	816	102.9	884	111.46	8.5
WARNERVL	230	COTTLE B	230	#1	1	244	793	Amps	EMERGENCY	817	103	885	111.58	8.5
WARNERVL	230	COTTLE B	230	#1	1	246	793	Amps	EMERGENCY	815	102.7	883	111.27	8.5
WARNERVL	230	COTTLE B	230	#1	1	269	793	Amps	EMERGENCY	816	102.9	884	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	817	103	885	111.59	8.5
WARNERVL	230	COTTLE B	230	#1	1	51	793	Amps	EMERGENCY	815	102.8	883	111.34	8.5
WARNERVL	230	COTTLE B	230	#1	1	82	793	Amps	EMERGENCY	815	102.7	883	111.27	8.5
WARNERVL	230	COTTLE B	230	#1	1	228	793	Amps	EMERGENCY	815	102.7	882	111.25	8.5
WARNERVL	230	COTTLE B	230	#1	1	242	793	Amps	EMERGENCY	815	102.8	883	111.32	8.5
WARNERVL	230	COTTLE B	230	#1	1	261	793	Amps	EMERGENCY	816	102.8	883	111.36	8.5
WARNERVL	230	COTTLE B	230	#1	1	273	793	Amps	EMERGENCY	815	102.7	882	111.25	8.5
WARNERVL	230	COTTLE B	230	#1	1	295	793	Amps	EMERGENCY	816	102.9	884	111.41	8.5
WARNERVL	230	COTTLE B	230	#1	1	226	793	Amps	EMERGENCY	816	102.8	883	111.36	8.5
WARNERVL	230	COTTLE B	230	#1	1	231	793	Amps	EMERGENCY	815	102.7	883	111.28	8.5
WARNERVL	230	COTTLE B	230	#1	1	268	793	Amps	EMERGENCY	815	102.7	882	111.23	8.5
WARNERVL	230	COTTLE B	230	#1	1	36	793	Amps	EMERGENCY	816	102.9	884	111.41	8.5
WARNERVL	230	COTTLE B	230	#1	1	209	793	Amps	EMERGENCY	816	102.9	884	111.41	8.5
WARNERVL	230	COTTLE B	230	#1	1	255	793	Amps	EMERGENCY	815	102.7	882	111.23	8.5
WARNERVL	230	COTTLE B	230	#1	1	240	793	Amps	EMERGENCY	815	102.8	883	111.33	8.5
WARNERVL	230	COTTLE B	230	#1	1	263	793	Amps	EMERGENCY	817	103	885	111.57	8.5
WARNERVL	230	COTTLE B	230	#1	1	257	793	Amps	EMERGENCY	815	102.7	882	111.23	8.5
WARNERVL	230	COTTLE B	230	#1	1	58	793	Amps	EMERGENCY	820	103.4	888	111.95	8.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WARNERVL	230	COTTLE B	230	#1	1	237	793	Amps	EMERGENCY	820	103.3	887	111.85	8.5
WARNERVL	230	COTTLE B	230	#1	1	275	793	Amps	EMERGENCY	817	103.1	885	111.59	8.5
WARNERVL	230	COTTLE B	230	#1	1	360	793	Amps	EMERGENCY	816	102.9	884	111.42	8.5
WARNERVL	230	COTTLE B	230	#1	1	299	793	Amps	EMERGENCY	816	102.8	883	111.36	8.5
WARNERVL	230	COTTLE B	230	#1	1	253	793	Amps	EMERGENCY	816	102.9	884	111.39	8.5
WARNERVL	230	COTTLE B	230	#1	1	277	793	Amps	EMERGENCY	815	102.8	883	111.34	8.5
WARNERVL	230	COTTLE B	230	#1	1	274	793	Amps	EMERGENCY	815	102.8	883	111.32	8.5
WARNERVL	230	COTTLE B	230	#1	1	292	793	Amps	EMERGENCY	821	103.5	889	112.06	8.5
WARNERVL	230	COTTLE B	230	#1	1	281	793	Amps	EMERGENCY	821	103.5	888	111.98	8.5
WARNERVL	230	COTTLE B	230	#1	1	276	793	Amps	EMERGENCY	815	102.8	883	111.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	24	793	Amps	EMERGENCY	764	96.3	831	104.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	280	793	Amps	EMERGENCY	821	103.5	889	112.03	8.5
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	756	95.3	823	103.77	8.5
COTTLE B	230	BELLOTA	230	#1	1	26	793	Amps	EMERGENCY	765	96.4	832	104.91	8.5
COTTLE B	230	BELLOTA	230	#1	1	256	793	Amps	EMERGENCY	767	96.7	834	105.16	8.5
COTTLE B	230	BELLOTA	230	#1	1	265	793	Amps	EMERGENCY	760	95.9	828	104.37	8.5
COTTLE B	230	BELLOTA	230	#1	1	362	793	Amps	EMERGENCY	760	95.9	828	104.37	8.5
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	753	95	821	103.48	8.5
COTTLE B	230	BELLOTA	230	#1	1	48	793	Amps	EMERGENCY	753	94.9	820	103.38	8.5
COTTLE B	230	BELLOTA	230	#1	1	361	793	Amps	EMERGENCY	756	95.3	824	103.85	8.5
COTTLE B	230	BELLOTA	230	#1	1	45	793	Amps	EMERGENCY	755	95.2	823	103.75	8.5
COTTLE B	230	BELLOTA	230	#1	1	264	793	Amps	EMERGENCY	756	95.3	823	103.76	8.5
WARNERVL	230	COTTLE B	230	#1	1	241	793	Amps	EMERGENCY	822	103.6	889	112.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	233	793	Amps	EMERGENCY	818	103.2	886	111.66	8.5
COTTLE B	230	BELLOTA	230	#1	1	249	793	Amps	EMERGENCY	757	95.4	824	103.94	8.5
COTTLE B	230	BELLOTA	230	#1	1	250	793	Amps	EMERGENCY	756	95.3	824	103.83	8.5
WARNERVL	230	COTTLE B	230	#1	1	68	793	Amps	EMERGENCY	824	103.8	891	112.33	8.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
WARNERVL	230	COTTLE B	230	#1	1	285	793	Amps	EMERGENCY	816	102.8	883	111.34	8.5
COTTLE B	230	BELLOTA	230	#1	1	262	793	Amps	EMERGENCY	757	95.4	824	103.89	8.5
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	756	95.4	824	103.85	8.5
COTTLE B	230	BELLOTA	230	#1	1	246	793	Amps	EMERGENCY	753	94.9	820	103.42	8.5
COTTLE B	230	BELLOTA	230	#1	1	297	793	Amps	EMERGENCY	753	94.9	820	103.43	8.5
WARNERVL	230	COTTLE B	230	#1	1	67	793	Amps	EMERGENCY	824	103.9	891	112.38	8.5
COTTLE B	230	BELLOTA	230	#1	1	270	793	Amps	EMERGENCY	755	95.1	822	103.63	8.5
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	755	95.2	823	103.73	8.5
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	754	95.1	822	103.61	8.5
COTTLE B	230	BELLOTA	230	#1	1	243	793	Amps	EMERGENCY	754	95.1	822	103.61	8.5
COTTLE B	230	BELLOTA	230	#1	1	269	793	Amps	EMERGENCY	754	95	821	103.54	8.5
COTTLE B	230	BELLOTA	230	#1	1	73	793	Amps	EMERGENCY	754	95.1	822	103.59	8.5
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	754	95.1	822	103.59	8.5
COTTLE B	230	BELLOTA	230	#1	1	50	793	Amps	EMERGENCY	754	95	821	103.54	8.5
COTTLE B	230	BELLOTA	230	#1	1	51	793	Amps	EMERGENCY	753	95	821	103.48	8.5
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	758	95.6	825	104.06	8.5
COTTLE B	230	BELLOTA	230	#1	1	242	793	Amps	EMERGENCY	753	95	821	103.46	8.5
COTTLE B	230	BELLOTA	230	#1	1	244	793	Amps	EMERGENCY	755	95.2	823	103.72	8.5
COTTLE B	230	BELLOTA	230	#1	1	289	793	Amps	EMERGENCY	756	95.4	824	103.85	8.5
COTTLE B	230	BELLOTA	230	#1	1	36	793	Amps	EMERGENCY	754	95.1	821	103.56	8.5
COTTLE B	230	BELLOTA	230	#1	1	209	793	Amps	EMERGENCY	754	95.1	821	103.56	8.5
COTTLE B	230	BELLOTA	230	#1	1	266	793	Amps	EMERGENCY	754	95.1	821	103.56	8.5
COTTLE B	230	BELLOTA	230	#1	1	268	793	Amps	EMERGENCY	753	94.9	820	103.37	8.5
COTTLE B	230	BELLOTA	230	#1	1	273	793	Amps	EMERGENCY	753	94.9	820	103.39	8.5
COTTLE B	230	BELLOTA	230	#1	1	226	793	Amps	EMERGENCY	754	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	228	793	Amps	EMERGENCY	753	94.9	820	103.39	8.5
COTTLE B	230	BELLOTA	230	#1	1	231	793	Amps	EMERGENCY	753	94.9	820	103.42	8.5

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
COTTLE B	230	BELLOTA	230	#1	1	261	793	Amps	EMERGENCY	754	95	821	103.51	8.5
COTTLE B	230	BELLOTA	230	#1	1	295	793	Amps	EMERGENCY	754	95.1	821	103.55	8.5
WARNERVL	230	COTTLE B	230	#1	1	235	793	Amps	EMERGENCY	819	103.3	887	111.76	8.5
COTTLE B	230	BELLOTA	230	#1	1	82	793	Amps	EMERGENCY	753	94.9	820	103.41	8.5
COTTLE B	230	BELLOTA	230	#1	1	255	793	Amps	EMERGENCY	753	94.9	820	103.38	8.5
COTTLE B	230	BELLOTA	230	#1	1	240	793	Amps	EMERGENCY	753	95	821	103.47	8.5
COTTLE B	230	BELLOTA	230	#1	1	263	793	Amps	EMERGENCY	755	95.2	823	103.71	8.5
COTTLE B	230	BELLOTA	230	#1	1	257	793	Amps	EMERGENCY	753	94.9	820	103.37	8.5
WARNERVL	230	COTTLE B	230	#1	1	212	793	Amps	EMERGENCY	815	102.8	883	111.27	8.5
WARNERVL	230	COTTLE B	230	#1	1	103	793	Amps	EMERGENCY	821	103.6	889	112.05	8.5
COTTLE B	230	BELLOTA	230	#1	1	58	793	Amps	EMERGENCY	758	95.6	826	104.09	8.5
COTTLE B	230	BELLOTA	230	#1	1	360	793	Amps	EMERGENCY	754	95.1	822	103.56	8.5
COTTLE B	230	BELLOTA	230	#1	1	237	793	Amps	EMERGENCY	758	95.5	825	103.99	8.5
COTTLE B	230	BELLOTA	230	#1	1	275	793	Amps	EMERGENCY	756	95.2	823	103.73	8.5
COTTLE B	230	BELLOTA	230	#1	1	299	793	Amps	EMERGENCY	754	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	277	793	Amps	EMERGENCY	754	95	821	103.48	8.5
COTTLE B	230	BELLOTA	230	#1	1	247	793	Amps	EMERGENCY	753	94.9	820	103.36	8.5
COTTLE B	230	BELLOTA	230	#1	1	253	793	Amps	EMERGENCY	754	95.1	821	103.53	8.5
COTTLE B	230	BELLOTA	230	#1	1	274	793	Amps	EMERGENCY	753	95	821	103.47	8.5
COTTLE B	230	BELLOTA	230	#1	1	292	793	Amps	EMERGENCY	759	95.7	827	104.2	8.5
COTTLE B	230	BELLOTA	230	#1	1	281	793	Amps	EMERGENCY	759	95.7	826	104.12	8.5
COTTLE B	230	BELLOTA	230	#1	1	276	793	Amps	EMERGENCY	753	95	821	103.44	8.5
COTTLE B	230	BELLOTA	230	#1	1	280	793	Amps	EMERGENCY	759	95.7	826	104.17	8.5
WARNERVL	230	COTTLE B	230	#1	1	29	793	Amps	EMERGENCY	826	104.1	893	112.54	8.5
BORDEN	230	STOREY 1	230	#1	1	152	793	Amps	EMERGENCY	954	120.3	1022	128.78	8.5
WARNERVL	230	COTTLE B	230	#1	1	37	793	Amps	EMERGENCY	821	103.5	888	111.95	8.5
COTTLE B	230	BELLOTA	230	#1	1	241	793	Amps	EMERGENCY	760	95.8	827	104.24	8.5

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
COTTLE B	230	BELLOTA	230	#1	1	233	793	Amps	EMERGENCY	756	95.3	823	103.8	8.5
COTTLE B	230	BELLOTA	230	#1	1	68	793	Amps	EMERGENCY	762	96	829	104.48	8.5
COTTLE B	230	BELLOTA	230	#1	1	67	793	Amps	EMERGENCY	762	96.1	829	104.52	8.5
WARNERVL	230	COTTLE B	230	#1	1	30	793	Amps	EMERGENCY	829	104.6	896	113.02	8.5
COTTLE B	230	BELLOTA	230	#1	1	285	793	Amps	EMERGENCY	754	95	821	103.48	8.5
COTTLE B	230	BELLOTA	230	#1	1	235	793	Amps	EMERGENCY	757	95.5	824	103.91	8.5
WARNERVL	230	COTTLE B	230	#1	1	70	793	Amps	EMERGENCY	818	103.1	885	111.6	8.5
WARNERVL	230	COTTLE B	230	#1	1	25	793	Amps	EMERGENCY	819	103.2	886	111.67	8.4
WARNERVL	230	COTTLE B	230	#1	1	208	793	Amps	EMERGENCY	819	103.2	886	111.67	8.4
COTTLE B	230	BELLOTA	230	#1	1	212	793	Amps	EMERGENCY	753	95	820	103.41	8.4
STOREY 1	230	BORDEN	230	#1	1	2	793	Amps	EMERGENCY	929	117.2	996	125.59	8.4
COTTLE B	230	BELLOTA	230	#1	1	103	793	Amps	EMERGENCY	760	95.8	827	104.22	8.4
COTTLE B	230	BELLOTA	230	#1	1	29	793	Amps	EMERGENCY	764	96.3	830	104.68	8.4
COTTLE B	230	BELLOTA	230	#1	1	37	793	Amps	EMERGENCY	759	95.7	826	104.1	8.4
COTTLE B	230	BELLOTA	230	#1	1	30	793	Amps	EMERGENCY	767	96.7	834	105.15	8.4
COTTLE B	230	BELLOTA	230	#1	1	70	793	Amps	EMERGENCY	756	95.3	823	103.74	8.4
COTTLE B	230	BELLOTA	230	#1	1	25	793	Amps	EMERGENCY	757	95.4	823	103.8	8.4
COTTLE B	230	BELLOTA	230	#1	1	208	793	Amps	EMERGENCY	757	95.4	823	103.8	8.4
BORDEN	230	STOREY 1	230	#1	1	171	793	Amps	EMERGENCY	901	113.5	967	121.92	8.4
WARNERVL	230	COTTLE B	230	#1	1	432	793	Amps	EMERGENCY	843	106.2	906	114.24	8
WARNERVL	230	COTTLE B	230	#1	1	203	793	Amps	EMERGENCY	852	107.4	915	115.37	8
COTTLE B	230	BELLOTA	230	#1	1	432	793	Amps	EMERGENCY	780	98.4	844	106.36	8
COTTLE B	230	BELLOTA	230	#1	1	203	793	Amps	EMERGENCY	790	99.5	853	107.5	8
STOREY 1	230	WILSON	230	#1	1	152	851	Amps	EMERGENCY	879	103.3	947	111.23	7.9
STOREY 1	230	WILSON	230	#1	1	2	851	Amps	EMERGENCY	854	100.3	921	108.25	7.9
STOREY 1	230	WILSON	230	#1	1	171	851	Amps	EMERGENCY	825	96.9	892	104.78	7.9
BORDEN	230	STOREY 1	230	#1	1	28	793	Amps	EMERGENCY	906	114.2	968	122.06	7.9

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
BORDEN	230	STOREY 1	230	#1	1	107	793	Amps	EMERGENCY	961	121.2	1023	129.01	7.8
BORDEN	230	STOREY 1	230	#1	1	153	793	Amps	EMERGENCY	924	116.5	986	124.31	7.8
BORDEN	230	STOREY 1	230	#1	1	25	793	Amps	EMERGENCY	927	116.9	989	124.69	7.8
BORDEN	230	STOREY 1	230	#1	1	208	793	Amps	EMERGENCY	927	116.9	989	124.69	7.8
BORDEN	230	STOREY 1	230	#1	1	106	793	Amps	EMERGENCY	933	117.6	995	125.42	7.8
STOREY 1	230	BORDEN	230	#1	1	420	793	Amps	EMERGENCY	968	122.1	1030	129.87	7.8
BORDEN	230	STOREY 1	230	#1	1	22	793	Amps	EMERGENCY	899	113.3	961	121.12	7.8
STOREY 1	230	BORDEN	230	#1	1	3	793	Amps	EMERGENCY	899	113.3	961	121.09	7.8
STOREY 1	230	BORDEN	230	#1	1	416	793	Amps	EMERGENCY	1031	130	1093	137.74	7.8
STOREY 1	230	BORDEN	230	#1	1	417	793	Amps	EMERGENCY	959	120.9	1021	128.72	7.8
STOREY 1	230	BORDEN	230	#1	1	365	793	Amps	EMERGENCY	950	119.7	1012	127.53	7.8
STOREY 1	230	BORDEN	230	#1	1	436	793	Amps	EMERGENCY	931	117.4	993	125.16	7.8
STOREY 1	230	BORDEN	230	#1	1	161	793	Amps	EMERGENCY	941	118.6	1002	126.37	7.8
STOREY 1	230	BORDEN	230	#1	1	160	793	Amps	EMERGENCY	1013	127.7	1075	135.5	7.8
STOREY 1	230	BORDEN	230	#1	1	189	793	Amps	EMERGENCY	925	116.6	986	124.34	7.8
STOREY 1	230	BORDEN	230	#1	1	381	793	Amps	EMERGENCY	913	115.1	974	122.82	7.7
STOREY 1	230	BORDEN	230	#1	1	155	793	Amps	EMERGENCY	923	116.3	984	124.06	7.7
BORDEN	230	STOREY 1	230	#1	1	12	793	Amps	EMERGENCY	916	115.5	977	123.19	7.7
STOREY 1	230	BORDEN	230	#1	1	11	793	Amps	EMERGENCY	991	125	1053	132.69	7.7
BORDEN	230	STOREY 1	230	#1	1	169	793	Amps	EMERGENCY	923	116.4	984	124.09	7.7
BORDEN	230	STOREY 1	230	#1	1	382	793	Amps	EMERGENCY	893	112.6	955	120.34	7.7
STOREY 1	230	BORDEN	230	#1	1	427	793	Amps	EMERGENCY	1071	135	1132	142.72	7.7
STOREY 1	230	BORDEN	230	#1	1	156	793	Amps	EMERGENCY	922	116.2	983	123.92	7.7
BORDEN	230	STOREY 1	230	#1	1	157	793	Amps	EMERGENCY	920	115.9	981	123.65	7.7
STOREY 1	230	BORDEN	230	#1	1	428	793	Amps	EMERGENCY	975	122.9	1036	130.64	7.7
STOREY 1	230	BORDEN	230	#1	1	435	793	Amps	EMERGENCY	932	117.6	994	125.27	7.7
BORDEN	230	STOREY 1	230	#1	1	207	793	Amps	EMERGENCY	887	111.9	948	119.57	7.7

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	BORDEN	230	#1	1	5	793	Amps	EMERGENCY	897	113.1	959	120.84	7.7
BORDEN	230	STOREY 1	230	#1	1	180	793	Amps	EMERGENCY	885	111.6	946	119.29	7.7
BORDEN	230	STOREY 1	230	#1	1	62	793	Amps	EMERGENCY	898	113.2	959	120.86	7.7
STOREY 1	230	BORDEN	230	#1	1	372	793	Amps	EMERGENCY	1054	132.8	1115	140.51	7.7
BORDEN	230	STOREY 1	230	#1	1	380	793	Amps	EMERGENCY	914	115.2	975	122.93	7.7
BORDEN	230	STOREY 1	230	#1	1	6	793	Amps	EMERGENCY	896	113	957	120.69	7.7
STOREY 1	230	BORDEN	230	#1	1	179	793	Amps	EMERGENCY	956	120.5	1017	128.19	7.7
BORDEN	230	STOREY 1	230	#1	1	7	793	Amps	EMERGENCY	894	112.7	955	120.42	7.7
STOREY 1	230	BORDEN	230	#1	1	373	793	Amps	EMERGENCY	958	120.8	1019	128.46	7.7
BORDEN	230	STOREY 1	230	#1	1	206	793	Amps	EMERGENCY	888	112	949	119.68	7.7
STOREY 1	230	BORDEN	230	#1	1	196	793	Amps	EMERGENCY	1032	130.1	1093	137.75	7.7
STOREY 1	230	BORDEN	230	#1	1	197	793	Amps	EMERGENCY	936	118.1	997	125.71	7.7
MELONES	230	COTTLE A	230	#1	1	1	850	Amps	EMERGENCY	849	99.8	914	107.49	7.7
BORDEN	230	STOREY 1	230	#1	1	41	793	Amps	EMERGENCY	900	113.4	960	121.08	7.7
STOREY 1	230	BORDEN	230	#1	1	389	793	Amps	EMERGENCY	996	125.5	1056	133.18	7.6
BORDEN	230	STOREY 1	230	#1	1	390	793	Amps	EMERGENCY	901	113.6	961	121.18	7.6
BORDEN	230	STOREY 1	230	#1	1	154	793	Amps	EMERGENCY	913	115.1	974	122.76	7.6
MELONES	230	COTTLE A	230	#1	1	170	850	Amps	EMERGENCY	804	94.6	869	102.25	7.6
STOREY 1	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	915	115.3	975	122.95	7.6
MELONES	230	COTTLE A	230	#1	1	151	850	Amps	EMERGENCY	805	94.8	870	102.35	7.6
BORDEN	230	STOREY 1	230	#1	1	112	793	Amps	EMERGENCY	900	113.5	961	121.12	7.6
COTTLE A	230	BELLOTA	230	#1	1	1	850	Amps	EMERGENCY	792	93.2	857	100.82	7.6
BORDEN	230	STOREY 1	230	#1	1	4	793	Amps	EMERGENCY	888	111.9	948	119.52	7.6
BORDEN	230	STOREY 1	230	#1	1	75	793	Amps	EMERGENCY	890	112.2	950	119.75	7.6
STOREY 1	230	BORDEN	230	#1	1	115	793	Amps	EMERGENCY	922	116.2	982	123.78	7.6
BORDEN	230	STOREY 1	230	#1	1	111	793	Amps	EMERGENCY	905	114.1	965	121.64	7.6
STOREY 1	230	BORDEN	230	#1	1	418	793	Amps	EMERGENCY	929	117.1	989	124.66	7.6

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	BORDEN	230	#1	1	419	793	Amps	EMERGENCY	929	117.1	989	124.66	7.6
STOREY 1	230	BORDEN	230	#1	1	433	793	Amps	EMERGENCY	923	116.3	983	123.87	7.6
STOREY 1	230	BORDEN	230	#1	1	434	793	Amps	EMERGENCY	921	116.1	981	123.69	7.6
BORDEN	230	STOREY 1	230	#1	1	163	793	Amps	EMERGENCY	910	114.8	970	122.32	7.6
STOREY 1	230	BORDEN	230	#1	1	162	793	Amps	EMERGENCY	910	114.8	970	122.32	7.6
BORDEN	230	STOREY 1	230	#1	1	38	793	Amps	EMERGENCY	892	112.4	952	119.98	7.5
STOREY 1	230	BORDEN	230	#1	1	378	793	Amps	EMERGENCY	904	114	964	121.53	7.5
BORDEN	230	STOREY 1	230	#1	1	379	793	Amps	EMERGENCY	903	113.8	963	121.35	7.5
BORDEN	230	STOREY 1	230	#1	1	299	793	Amps	EMERGENCY	885	111.6	945	119.08	7.5
STOREY 1	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	930	117.2	989	124.69	7.5
STOREY 1	230	BORDEN	230	#1	1	429	793	Amps	EMERGENCY	928	117	988	124.54	7.5
BORDEN	230	STOREY 1	230	#1	1	63	793	Amps	EMERGENCY	886	111.7	945	119.18	7.5
STOREY 1	230	BORDEN	230	#1	1	27	793	Amps	EMERGENCY	913	115.1	972	122.59	7.5
BORDEN	230	STOREY 1	230	#1	1	117	793	Amps	EMERGENCY	912	115	971	122.45	7.5
BORDEN	230	STOREY 1	230	#1	1	113	793	Amps	EMERGENCY	910	114.8	970	122.27	7.5
STOREY 1	230	BORDEN	230	#1	1	69	793	Amps	EMERGENCY	889	112.1	949	119.61	7.5
STOREY 1	230	BORDEN	230	#1	1	355	793	Amps	EMERGENCY	911	114.9	971	122.39	7.5
STOREY 1	230	BORDEN	230	#1	1	431	793	Amps	EMERGENCY	906	114.2	965	121.69	7.5
STOREY 1	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	910	114.7	970	122.22	7.5
STOREY 1	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	910	114.7	970	122.23	7.5
BORDEN	230	STOREY 1	230	#1	1	265	793	Amps	EMERGENCY	893	112.6	952	120.05	7.5
BORDEN	230	STOREY 1	230	#1	1	362	793	Amps	EMERGENCY	893	112.6	952	120.05	7.5
BORDEN	230	STOREY 1	230	#1	1	159	793	Amps	EMERGENCY	910	114.7	970	122.23	7.5
STOREY 1	230	BORDEN	230	#1	1	158	793	Amps	EMERGENCY	910	114.7	970	122.23	7.5
BORDEN	230	STOREY 1	230	#1	1	54	793	Amps	EMERGENCY	904	114	963	121.43	7.5
BORDEN	230	STOREY 1	230	#1	1	256	793	Amps	EMERGENCY	900	113.5	959	120.94	7.5
STOREY 1	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	887	111.9	947	119.33	7.5

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	BORDEN	230	#1	1	374	793	Amps	EMERGENCY	910	114.7	969	122.21	7.5
BORDEN	230	STOREY 1	230	#1	1	42	793	Amps	EMERGENCY	891	112.3	950	119.81	7.5
BORDEN	230	STOREY 1	230	#1	1	60	793	Amps	EMERGENCY	890	112.2	950	119.71	7.5
BORDEN	230	STOREY 1	230	#1	1	251	793	Amps	EMERGENCY	891	112.3	950	119.81	7.5
BORDEN	230	STOREY 1	230	#1	1	45	793	Amps	EMERGENCY	886	111.7	945	119.19	7.5
BORDEN	230	STOREY 1	230	#1	1	40	793	Amps	EMERGENCY	886	111.6	945	119.11	7.5
BORDEN	230	STOREY 1	230	#1	1	120	793	Amps	EMERGENCY	886	111.7	945	119.15	7.5
BORDEN	230	STOREY 1	230	#1	1	361	793	Amps	EMERGENCY	889	112	948	119.49	7.5
BORDEN	230	STOREY 1	230	#1	1	36	793	Amps	EMERGENCY	885	111.5	944	119.01	7.5
BORDEN	230	STOREY 1	230	#1	1	209	793	Amps	EMERGENCY	885	111.5	944	119.01	7.5
BORDEN	230	STOREY 1	230	#1	1	66	793	Amps	EMERGENCY	902	113.7	961	121.18	7.5
BORDEN	230	STOREY 1	230	#1	1	264	793	Amps	EMERGENCY	888	111.9	947	119.4	7.5
BORDEN	230	STOREY 1	230	#1	1	119	793	Amps	EMERGENCY	886	111.7	945	119.14	7.5
BORDEN	230	STOREY 1	230	#1	1	430	793	Amps	EMERGENCY	893	112.6	952	120.07	7.5
BORDEN	230	STOREY 1	230	#1	1	92	793	Amps	EMERGENCY	886	111.7	945	119.14	7.5
BORDEN	230	STOREY 1	230	#1	1	80	793	Amps	EMERGENCY	886	111.7	946	119.21	7.5
BORDEN	230	STOREY 1	230	#1	1	65	793	Amps	EMERGENCY	886	111.7	945	119.13	7.5
BORDEN	230	STOREY 1	230	#1	1	249	793	Amps	EMERGENCY	890	112.2	949	119.62	7.5
BORDEN	230	STOREY 1	230	#1	1	250	793	Amps	EMERGENCY	889	112	948	119.51	7.5
BORDEN	230	STOREY 1	230	#1	1	270	793	Amps	EMERGENCY	886	111.7	945	119.18	7.5
BORDEN	230	STOREY 1	230	#1	1	297	793	Amps	EMERGENCY	885	111.6	944	119.06	7.5
BORDEN	230	STOREY 1	230	#1	1	91	793	Amps	EMERGENCY	889	112.1	948	119.54	7.5
BORDEN	230	STOREY 1	230	#1	1	246	793	Amps	EMERGENCY	885	111.6	944	119.05	7.5
BORDEN	230	STOREY 1	230	#1	1	269	793	Amps	EMERGENCY	886	111.7	945	119.12	7.5
BORDEN	230	STOREY 1	230	#1	1	289	793	Amps	EMERGENCY	888	112	948	119.47	7.5
BORDEN	230	STOREY 1	230	#1	1	276	793	Amps	EMERGENCY	885	111.6	944	119.03	7.5
BORDEN	230	STOREY 1	230	#1	1	242	793	Amps	EMERGENCY	885	111.6	945	119.07	7.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
BORDEN	230	STOREY 1	230	#1	1	262	793	Amps	EMERGENCY	889	112.1	948	119.53	7.5
BORDEN	230	STOREY 1	230	#1	1	32	793	Amps	EMERGENCY	885	111.5	944	119.01	7.5
BORDEN	230	STOREY 1	230	#1	1	46	793	Amps	EMERGENCY	888	112	948	119.45	7.5
BORDEN	230	STOREY 1	230	#1	1	59	793	Amps	EMERGENCY	887	111.8	946	119.3	7.5
BORDEN	230	STOREY 1	230	#1	1	243	793	Amps	EMERGENCY	887	111.8	946	119.3	7.5
BORDEN	230	STOREY 1	230	#1	1	244	793	Amps	EMERGENCY	888	112	947	119.44	7.5
BORDEN	230	STOREY 1	230	#1	1	266	793	Amps	EMERGENCY	886	111.7	945	119.19	7.5
BORDEN	230	STOREY 1	230	#1	1	268	793	Amps	EMERGENCY	885	111.5	944	119.01	7.5
BORDEN	230	STOREY 1	230	#1	1	273	793	Amps	EMERGENCY	885	111.5	944	119	7.5
BORDEN	230	STOREY 1	230	#1	1	277	793	Amps	EMERGENCY	885	111.6	945	119.07	7.5
BORDEN	230	STOREY 1	230	#1	1	261	793	Amps	EMERGENCY	886	111.7	945	119.14	7.5
BORDEN	230	STOREY 1	230	#1	1	51	793	Amps	EMERGENCY	885	111.5	944	119	7.5
BORDEN	230	STOREY 1	230	#1	1	73	793	Amps	EMERGENCY	887	111.8	946	119.3	7.5
BORDEN	230	STOREY 1	230	#1	1	74	793	Amps	EMERGENCY	887	111.8	946	119.3	7.5
BORDEN	230	STOREY 1	230	#1	1	83	793	Amps	EMERGENCY	887	111.8	946	119.31	7.5
BORDEN	230	STOREY 1	230	#1	1	226	793	Amps	EMERGENCY	886	111.7	945	119.13	7.5
BORDEN	230	STOREY 1	230	#1	1	231	793	Amps	EMERGENCY	885	111.6	944	119.04	7.5
BORDEN	230	STOREY 1	230	#1	1	84	793	Amps	EMERGENCY	885	111.6	945	119.08	7.5
BORDEN	230	STOREY 1	230	#1	1	295	793	Amps	EMERGENCY	886	111.7	945	119.18	7.5
BORDEN	230	STOREY 1	230	#1	1	50	793	Amps	EMERGENCY	885	111.5	944	119	7.5
BORDEN	230	STOREY 1	230	#1	1	110	793	Amps	EMERGENCY	900	113.5	959	120.95	7.5
BORDEN	230	STOREY 1	230	#1	1	228	793	Amps	EMERGENCY	885	111.6	944	119.02	7.5
BORDEN	230	STOREY 1	230	#1	1	109	793	Amps	EMERGENCY	901	113.6	960	121.04	7.5
BORDEN	230	STOREY 1	230	#1	1	240	793	Amps	EMERGENCY	885	111.6	944	119.05	7.5
BORDEN	230	STOREY 1	230	#1	1	71	793	Amps	EMERGENCY	885	111.6	945	119.08	7.5
BORDEN	230	STOREY 1	230	#1	1	72	793	Amps	EMERGENCY	885	111.6	945	119.07	7.5
BORDEN	230	STOREY 1	230	#1	1	122	793	Amps	EMERGENCY	886	111.6	945	119.1	7.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
BORDEN	230	STOREY 1	230	#1	1	376	793	Amps	EMERGENCY	888	111.9	947	119.36	7.5
BORDEN	230	STOREY 1	230	#1	1	255	793	Amps	EMERGENCY	886	111.7	945	119.11	7.5
BORDEN	230	STOREY 1	230	#1	1	118	793	Amps	EMERGENCY	909	114.6	968	122.03	7.5
BORDEN	230	STOREY 1	230	#1	1	263	793	Amps	EMERGENCY	887	111.9	946	119.3	7.5
BORDEN	230	STOREY 1	230	#1	1	48	793	Amps	EMERGENCY	886	111.7	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	257	793	Amps	EMERGENCY	885	111.6	944	119.06	7.4
BORDEN	230	STOREY 1	230	#1	1	275	793	Amps	EMERGENCY	888	111.9	947	119.39	7.4
BORDEN	230	STOREY 1	230	#1	1	58	793	Amps	EMERGENCY	893	112.6	952	120	7.4
BORDEN	230	STOREY 1	230	#1	1	253	793	Amps	EMERGENCY	887	111.9	946	119.3	7.4
BORDEN	230	STOREY 1	230	#1	1	274	793	Amps	EMERGENCY	886	111.7	945	119.19	7.4
BORDEN	230	STOREY 1	230	#1	1	360	793	Amps	EMERGENCY	889	112.1	948	119.5	7.4
BORDEN	230	STOREY 1	230	#1	1	247	793	Amps	EMERGENCY	885	111.6	944	119.03	7.4
BORDEN	230	STOREY 1	230	#1	1	241	793	Amps	EMERGENCY	891	112.4	950	119.8	7.4
BORDEN	230	STOREY 1	230	#1	1	285	793	Amps	EMERGENCY	886	111.6	945	119.08	7.4
STOREY 1	230	BORDEN	230	#1	1	292	793	Amps	EMERGENCY	900	113.5	959	120.88	7.4
STOREY 1	230	BORDEN	230	#1	1	237	793	Amps	EMERGENCY	902	113.7	961	121.14	7.4
BORDEN	230	STOREY 1	230	#1	1	281	793	Amps	EMERGENCY	899	113.3	957	120.7	7.4
BORDEN	230	STOREY 1	230	#1	1	280	793	Amps	EMERGENCY	900	113.4	958	120.82	7.4
STOREY 1	230	WILSON	230	#1	1	28	851	Amps	EMERGENCY	829	97.5	892	104.85	7.4
BORDEN	230	STOREY 1	230	#1	1	233	793	Amps	EMERGENCY	892	112.5	951	119.87	7.4
BORDEN	230	STOREY 1	230	#1	1	235	793	Amps	EMERGENCY	894	112.7	952	120.05	7.4
STOREY 1	230	WILSON	230	#1	1	107	851	Amps	EMERGENCY	885	104	948	111.37	7.3
STOREY 1	230	WILSON	230	#1	1	153	851	Amps	EMERGENCY	848	99.7	911	107.02	7.3
STOREY 1	230	WILSON	230	#1	1	25	851	Amps	EMERGENCY	851	100	913	107.33	7.3
STOREY 1	230	WILSON	230	#1	1	208	851	Amps	EMERGENCY	851	100	913	107.33	7.3
STOREY 1	230	WILSON	230	#1	1	106	851	Amps	EMERGENCY	857	100.7	919	108	7.3
STOREY 1	230	WILSON	230	#1	1	3	851	Amps	EMERGENCY	823	96.7	885	104.01	7.3

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	420	851	Amps	EMERGENCY	893	105	955	112.27	7.3
STOREY 1	230	WILSON	230	#1	1	22	851	Amps	EMERGENCY	823	96.7	885	103.98	7.3
STOREY 1	230	WILSON	230	#1	1	416	851	Amps	EMERGENCY	956	112.3	1018	119.61	7.3
STOREY 1	230	WILSON	230	#1	1	365	851	Amps	EMERGENCY	874	102.7	936	110.01	7.3
STOREY 1	230	WILSON	230	#1	1	417	851	Amps	EMERGENCY	884	103.9	946	111.2	7.3
STOREY 1	230	WILSON	230	#1	1	161	851	Amps	EMERGENCY	865	101.7	927	108.94	7.3
STOREY 1	230	WILSON	230	#1	1	436	851	Amps	EMERGENCY	856	100.6	918	107.88	7.3
STOREY 1	230	WILSON	230	#1	1	160	851	Amps	EMERGENCY	938	110.2	1000	117.46	7.3
STOREY 1	230	WILSON	230	#1	1	189	851	Amps	EMERGENCY	849	99.7	911	107.03	7.3
STOREY 1	230	WILSON	230	#1	1	381	851	Amps	EMERGENCY	837	98.4	899	105.62	7.3
STOREY 1	230	WILSON	230	#1	1	155	851	Amps	EMERGENCY	847	99.5	909	106.79	7.3
STOREY 1	230	WILSON	230	#1	1	12	851	Amps	EMERGENCY	840	98.7	902	105.96	7.3
STOREY 1	230	WILSON	230	#1	1	11	851	Amps	EMERGENCY	915	107.6	977	114.83	7.3
STOREY 2	230	BORDEN	230	#1	1	152	793	Amps	EMERGENCY	814	102.7	872	109.93	7.3
STOREY 1	230	WILSON	230	#1	1	169	851	Amps	EMERGENCY	847	99.6	909	106.81	7.3
STOREY 1	230	WILSON	230	#1	1	382	851	Amps	EMERGENCY	817	96	879	103.27	7.3
STOREY 1	230	WILSON	230	#1	1	207	851	Amps	EMERGENCY	811	95.3	873	102.58	7.3
STOREY 1	230	WILSON	230	#1	1	156	851	Amps	EMERGENCY	846	99.4	908	106.65	7.2
STOREY 1	230	WILSON	230	#1	1	157	851	Amps	EMERGENCY	844	99.2	905	106.4	7.2
STOREY 1	230	WILSON	230	#1	1	427	851	Amps	EMERGENCY	996	117	1058	124.28	7.2
STOREY 1	230	WILSON	230	#1	1	5	851	Amps	EMERGENCY	821	96.5	883	103.77	7.2
STOREY 1	230	WILSON	230	#1	1	428	851	Amps	EMERGENCY	899	105.7	961	112.94	7.2
STOREY 1	230	WILSON	230	#1	1	435	851	Amps	EMERGENCY	857	100.7	919	107.98	7.2
STOREY 2	230	BORDEN	230	#1	1	2	793	Amps	EMERGENCY	793	100	850	107.21	7.2
STOREY 1	230	WILSON	230	#1	1	62	851	Amps	EMERGENCY	822	96.6	883	103.79	7.2
STOREY 1	230	WILSON	230	#1	1	6	851	Amps	EMERGENCY	820	96.4	882	103.63	7.2
STOREY 1	230	WILSON	230	#1	1	179	851	Amps	EMERGENCY	880	103.4	941	110.59	7.2

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	7	851	Amps	EMERGENCY	818	96.2	880	103.38	7.2
STOREY 1	230	WILSON	230	#1	1	380	851	Amps	EMERGENCY	838	98.5	900	105.73	7.2
STOREY 1	230	WILSON	230	#1	1	372	851	Amps	EMERGENCY	978	114.9	1040	122.16	7.2
STOREY 1	230	WILSON	230	#1	1	373	851	Amps	EMERGENCY	882	103.6	943	110.85	7.2
STOREY 2	230	WILSON	230	#1	1	152	793	Amps	EMERGENCY	746	94.1	803	101.27	7.2
STOREY 1	230	WILSON	230	#1	1	206	851	Amps	EMERGENCY	812	95.5	874	102.68	7.2
STOREY 1	230	WILSON	230	#1	1	197	851	Amps	EMERGENCY	860	101.1	921	108.28	7.2
STOREY 2	230	BORDEN	230	#1	1	171	793	Amps	EMERGENCY	768	96.8	825	104.04	7.2
STOREY 1	230	WILSON	230	#1	1	196	851	Amps	EMERGENCY	956	112.4	1018	119.58	7.2
STOREY 1	230	WILSON	230	#1	1	41	851	Amps	EMERGENCY	824	96.8	885	104	7.2
STOREY 1	230	WILSON	230	#1	1	389	851	Amps	EMERGENCY	920	108.1	981	115.28	7.2
STOREY 1	230	WILSON	230	#1	1	390	851	Amps	EMERGENCY	824	96.8	885	104.01	7.2
STOREY 1	230	WILSON	230	#1	1	154	851	Amps	EMERGENCY	837	98.4	898	105.57	7.2
STOREY 1	230	WILSON	230	#1	1	112	851	Amps	EMERGENCY	824	96.9	885	104.03	7.1
STOREY 1	230	WILSON	230	#1	1	114	851	Amps	EMERGENCY	839	98.6	900	105.76	7.1
STOREY 1	230	WILSON	230	#1	1	4	851	Amps	EMERGENCY	812	95.4	873	102.53	7.1
STOREY 1	230	WILSON	230	#1	1	75	851	Amps	EMERGENCY	814	95.6	875	102.77	7.1
STOREY 1	230	WILSON	230	#1	1	111	851	Amps	EMERGENCY	829	97.4	889	104.52	7.1
STOREY 1	230	WILSON	230	#1	1	115	851	Amps	EMERGENCY	846	99.4	907	106.55	7.1
STOREY 1	230	WILSON	230	#1	1	418	851	Amps	EMERGENCY	854	100.3	914	107.41	7.1
STOREY 1	230	WILSON	230	#1	1	419	851	Amps	EMERGENCY	854	100.3	914	107.41	7.1
STOREY 1	230	WILSON	230	#1	1	433	851	Amps	EMERGENCY	847	99.6	908	106.67	7.1
STOREY 1	230	WILSON	230	#1	1	162	851	Amps	EMERGENCY	834	98.1	895	105.15	7.1
STOREY 1	230	WILSON	230	#1	1	163	851	Amps	EMERGENCY	834	98.1	895	105.15	7.1
STOREY 1	230	WILSON	230	#1	1	434	851	Amps	EMERGENCY	846	99.4	906	106.5	7.1
STOREY 1	230	WILSON	230	#1	1	38	851	Amps	EMERGENCY	816	95.9	876	102.98	7.1
STOREY 1	230	WILSON	230	#1	1	379	851	Amps	EMERGENCY	827	97.2	887	104.25	7.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	378	851	Amps	EMERGENCY	828	97.3	889	104.41	7.1
STOREY 1	230	WILSON	230	#1	1	299	851	Amps	EMERGENCY	809	95.1	869	102.12	7.1
STOREY 1	230	WILSON	230	#1	1	63	851	Amps	EMERGENCY	810	95.2	870	102.22	7
STOREY 1	230	WILSON	230	#1	1	116	851	Amps	EMERGENCY	854	100.4	914	107.4	7
STOREY 1	230	WILSON	230	#1	1	27	851	Amps	EMERGENCY	837	98.4	897	105.41	7
STOREY 1	230	WILSON	230	#1	1	117	851	Amps	EMERGENCY	836	98.2	896	105.28	7
STOREY 1	230	WILSON	230	#1	1	429	851	Amps	EMERGENCY	853	100.2	913	107.29	7
STOREY 1	230	WILSON	230	#1	1	113	851	Amps	EMERGENCY	835	98.1	895	105.13	7
STOREY 1	230	WILSON	230	#1	1	69	851	Amps	EMERGENCY	814	95.6	873	102.65	7
STOREY 1	230	WILSON	230	#1	1	355	851	Amps	EMERGENCY	836	98.2	895	105.22	7
STOREY 1	230	WILSON	230	#1	1	265	851	Amps	EMERGENCY	817	96	877	103.03	7
STOREY 1	230	WILSON	230	#1	1	362	851	Amps	EMERGENCY	817	96	877	103.03	7
STOREY 1	230	WILSON	230	#1	1	108	851	Amps	EMERGENCY	834	98	894	105.07	7
STOREY 1	230	WILSON	230	#1	1	256	851	Amps	EMERGENCY	824	96.9	884	103.88	7
STOREY 1	230	WILSON	230	#1	1	47	851	Amps	EMERGENCY	811	95.3	871	102.37	7
STOREY 1	230	WILSON	230	#1	1	60	851	Amps	EMERGENCY	814	95.7	874	102.72	7
STOREY 1	230	WILSON	230	#1	1	42	851	Amps	EMERGENCY	815	95.8	875	102.79	7
STOREY 1	230	WILSON	230	#1	1	81	851	Amps	EMERGENCY	834	98	894	105.07	7
STOREY 1	230	WILSON	230	#1	1	251	851	Amps	EMERGENCY	815	95.8	875	102.79	7
STOREY 1	230	WILSON	230	#1	1	158	851	Amps	EMERGENCY	834	98	894	105.07	7
STOREY 1	230	WILSON	230	#1	1	159	851	Amps	EMERGENCY	834	98	894	105.07	7
STOREY 1	230	WILSON	230	#1	1	40	851	Amps	EMERGENCY	809	95.1	869	102.15	7
STOREY 1	230	WILSON	230	#1	1	45	851	Amps	EMERGENCY	810	95.2	870	102.22	7
STOREY 1	230	WILSON	230	#1	1	54	851	Amps	EMERGENCY	828	97.3	888	104.34	7
STOREY 1	230	WILSON	230	#1	1	361	851	Amps	EMERGENCY	813	95.5	872	102.51	7
STOREY 1	230	WILSON	230	#1	1	374	851	Amps	EMERGENCY	834	98	894	105.04	7
STOREY 1	230	WILSON	230	#1	1	36	851	Amps	EMERGENCY	809	95	868	102.06	7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	209	851	Amps	EMERGENCY	809	95	868	102.06	7
STOREY 1	230	WILSON	230	#1	1	120	851	Amps	EMERGENCY	810	95.2	870	102.21	7
STOREY 1	230	WILSON	230	#1	1	264	851	Amps	EMERGENCY	812	95.4	872	102.43	7
STOREY 1	230	WILSON	230	#1	1	66	851	Amps	EMERGENCY	826	97.1	886	104.08	7
STOREY 1	230	WILSON	230	#1	1	119	851	Amps	EMERGENCY	810	95.2	870	102.19	7
STOREY 1	230	WILSON	230	#1	1	431	851	Amps	EMERGENCY	831	97.6	890	104.63	7
STOREY 1	230	WILSON	230	#1	1	80	851	Amps	EMERGENCY	810	95.2	870	102.25	7
STOREY 1	230	WILSON	230	#1	1	92	851	Amps	EMERGENCY	810	95.2	870	102.19	7
STOREY 1	230	WILSON	230	#1	1	249	851	Amps	EMERGENCY	814	95.6	873	102.63	7
STOREY 1	230	WILSON	230	#1	1	65	851	Amps	EMERGENCY	810	95.1	869	102.16	7
STOREY 1	230	WILSON	230	#1	1	289	851	Amps	EMERGENCY	812	95.5	872	102.48	7
STOREY 1	230	WILSON	230	#1	1	250	851	Amps	EMERGENCY	813	95.5	872	102.53	7
STOREY 1	230	WILSON	230	#1	1	262	851	Amps	EMERGENCY	813	95.5	873	102.54	7
STOREY 1	230	WILSON	230	#1	1	276	851	Amps	EMERGENCY	809	95.1	869	102.07	7
STOREY 1	230	WILSON	230	#1	1	297	851	Amps	EMERGENCY	809	95.1	869	102.1	7
STOREY 1	230	WILSON	230	#1	1	269	851	Amps	EMERGENCY	810	95.1	869	102.16	7
STOREY 1	230	WILSON	230	#1	1	270	851	Amps	EMERGENCY	810	95.2	870	102.21	7
STOREY 1	230	WILSON	230	#1	1	32	851	Amps	EMERGENCY	809	95	868	102.06	7
STOREY 1	230	WILSON	230	#1	1	91	851	Amps	EMERGENCY	813	95.5	873	102.55	7
STOREY 1	230	WILSON	230	#1	1	242	851	Amps	EMERGENCY	809	95.1	869	102.11	7
STOREY 1	230	WILSON	230	#1	1	246	851	Amps	EMERGENCY	809	95.1	869	102.09	7
STOREY 1	230	WILSON	230	#1	1	277	851	Amps	EMERGENCY	809	95.1	869	102.11	7
STOREY 1	230	WILSON	230	#1	1	59	851	Amps	EMERGENCY	811	95.3	871	102.33	7
STOREY 1	230	WILSON	230	#1	1	243	851	Amps	EMERGENCY	811	95.3	871	102.33	7
STOREY 1	230	WILSON	230	#1	1	244	851	Amps	EMERGENCY	812	95.4	872	102.46	7
STOREY 1	230	WILSON	230	#1	1	266	851	Amps	EMERGENCY	810	95.2	870	102.22	7
STOREY 1	230	WILSON	230	#1	1	73	851	Amps	EMERGENCY	811	95.3	871	102.34	7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	74	851	Amps	EMERGENCY	811	95.3	871	102.34	7
STOREY 1	230	WILSON	230	#1	1	46	851	Amps	EMERGENCY	812	95.5	872	102.47	7
STOREY 1	230	WILSON	230	#1	1	51	851	Amps	EMERGENCY	809	95	868	102.04	7
STOREY 1	230	WILSON	230	#1	1	84	851	Amps	EMERGENCY	809	95.1	869	102.12	7
STOREY 1	230	WILSON	230	#1	1	83	851	Amps	EMERGENCY	811	95.3	871	102.33	7
STOREY 1	230	WILSON	230	#1	1	226	851	Amps	EMERGENCY	810	95.2	869	102.17	7
STOREY 1	230	WILSON	230	#1	1	295	851	Amps	EMERGENCY	810	95.2	870	102.22	7
STOREY 1	230	WILSON	230	#1	1	228	851	Amps	EMERGENCY	809	95.1	869	102.07	7
STOREY 1	230	WILSON	230	#1	1	231	851	Amps	EMERGENCY	809	95.1	869	102.08	7
STOREY 1	230	WILSON	230	#1	1	261	851	Amps	EMERGENCY	810	95.2	870	102.18	7
STOREY 1	230	WILSON	230	#1	1	268	851	Amps	EMERGENCY	809	95	868	102.05	7
STOREY 1	230	WILSON	230	#1	1	273	851	Amps	EMERGENCY	809	95	868	102.05	7
STOREY 1	230	WILSON	230	#1	1	50	851	Amps	EMERGENCY	809	95	868	102.05	7
STOREY 1	230	WILSON	230	#1	1	109	851	Amps	EMERGENCY	825	96.9	884	103.93	7
STOREY 1	230	WILSON	230	#1	1	110	851	Amps	EMERGENCY	824	96.8	884	103.86	7
STOREY 1	230	WILSON	230	#1	1	240	851	Amps	EMERGENCY	809	95.1	869	102.09	7
STOREY 1	230	WILSON	230	#1	1	72	851	Amps	EMERGENCY	809	95.1	869	102.12	7
STOREY 1	230	WILSON	230	#1	1	71	851	Amps	EMERGENCY	809	95.1	869	102.12	7
STOREY 1	230	WILSON	230	#1	1	255	851	Amps	EMERGENCY	810	95.1	869	102.15	7
STOREY 1	230	WILSON	230	#1	1	430	851	Amps	EMERGENCY	818	96.1	877	103.12	7
STOREY 1	230	WILSON	230	#1	1	376	851	Amps	EMERGENCY	812	95.4	871	102.38	7
STOREY 1	230	WILSON	230	#1	1	122	851	Amps	EMERGENCY	809	95.1	869	102.13	7
STOREY 1	230	WILSON	230	#1	1	263	851	Amps	EMERGENCY	811	95.3	871	102.34	7
STOREY 1	230	WILSON	230	#1	1	48	851	Amps	EMERGENCY	810	95.1	869	102.15	7
STOREY 1	230	WILSON	230	#1	1	118	851	Amps	EMERGENCY	833	97.9	893	104.89	7
STOREY 1	230	WILSON	230	#1	1	257	851	Amps	EMERGENCY	809	95.1	869	102.1	7
STOREY 1	230	WILSON	230	#1	1	275	851	Amps	EMERGENCY	812	95.4	871	102.41	7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 1	230	WILSON	230	#1	1	58	851	Amps	EMERGENCY	817	96	876	102.98	7
STOREY 1	230	WILSON	230	#1	1	253	851	Amps	EMERGENCY	811	95.3	871	102.32	7
STOREY 1	230	WILSON	230	#1	1	274	851	Amps	EMERGENCY	810	95.2	870	102.22	7
STOREY 1	230	WILSON	230	#1	1	360	851	Amps	EMERGENCY	813	95.5	872	102.51	7
STOREY 1	230	WILSON	230	#1	1	247	851	Amps	EMERGENCY	809	95.1	869	102.07	7
STOREY 1	230	WILSON	230	#1	1	241	851	Amps	EMERGENCY	815	95.8	875	102.79	7
STOREY 1	230	WILSON	230	#1	1	285	851	Amps	EMERGENCY	810	95.1	869	102.12	7
STOREY 1	230	WILSON	230	#1	1	292	851	Amps	EMERGENCY	824	96.9	884	103.83	7
STOREY 1	230	BORDEN	230	#1	1	432	793	Amps	EMERGENCY	966	121.8	1021	128.73	7
STOREY 1	230	WILSON	230	#1	1	237	851	Amps	EMERGENCY	826	97.1	886	104.06	7
STOREY 1	230	WILSON	230	#1	1	281	851	Amps	EMERGENCY	823	96.7	882	103.63	7
STOREY 1	230	BORDEN	230	#1	1	377	793	Amps	EMERGENCY	947	119.4	1002	126.36	7
STOREY 1	230	WILSON	230	#1	1	280	851	Amps	EMERGENCY	824	96.8	883	103.74	7
STOREY 1	230	BORDEN	230	#1	1	203	793	Amps	EMERGENCY	922	116.3	977	123.22	6.9
STOREY 1	230	WILSON	230	#1	1	233	851	Amps	EMERGENCY	816	95.9	875	102.87	6.9
STOREY 1	230	WILSON	230	#1	1	235	851	Amps	EMERGENCY	818	96.1	877	103.03	6.9
BORDEN	230	STOREY 1	230	#1	1	394	793	Amps	EMERGENCY	891	112.3	946	119.21	6.9
STOREY 2	230	BORDEN	230	#1	1	28	793	Amps	EMERGENCY	772	97.3	826	104.08	6.8
STOREY 2	230	BORDEN	230	#1	1	107	793	Amps	EMERGENCY	820	103.3	873	110.05	6.7
STOREY 2	230	BORDEN	230	#1	1	153	793	Amps	EMERGENCY	788	99.4	842	106.09	6.7
STOREY 2	230	BORDEN	230	#1	1	25	793	Amps	EMERGENCY	791	99.7	844	106.36	6.7
STOREY 2	230	BORDEN	230	#1	1	208	793	Amps	EMERGENCY	791	99.7	844	106.36	6.7
STOREY 2	230	BORDEN	230	#1	1	106	793	Amps	EMERGENCY	795	100.3	848	106.96	6.7
STOREY 2	230	BORDEN	230	#1	1	3	793	Amps	EMERGENCY	767	96.7	820	103.34	6.7
STOREY 2	230	BORDEN	230	#1	1	420	793	Amps	EMERGENCY	827	104.2	880	110.9	6.7
STOREY 2	230	BORDEN	230	#1	1	22	793	Amps	EMERGENCY	766	96.6	819	103.29	6.7
STOREY 2	230	BORDEN	230	#1	1	365	793	Amps	EMERGENCY	810	102.1	863	108.82	6.7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	BORDEN	230	#1	1	416	793	Amps	EMERGENCY	880	110.9	933	117.6	6.7
STOREY 2	230	BORDEN	230	#1	1	417	793	Amps	EMERGENCY	819	103.3	872	109.93	6.7
STOREY 2	230	WILSON	230	#1	1	107	793	Amps	EMERGENCY	752	94.8	805	101.42	6.7
STOREY 2	230	BORDEN	230	#1	1	161	793	Amps	EMERGENCY	803	101.2	855	107.84	6.7
STOREY 2	230	BORDEN	230	#1	1	160	793	Amps	EMERGENCY	864	109	917	115.62	6.7
STOREY 2	230	BORDEN	230	#1	1	189	793	Amps	EMERGENCY	789	99.4	842	106.1	6.7
STOREY 2	230	BORDEN	230	#1	1	436	793	Amps	EMERGENCY	795	100.2	848	106.88	6.7
STOREY 2	230	BORDEN	230	#1	1	381	793	Amps	EMERGENCY	779	98.2	831	104.8	6.6
STOREY 2	230	WILSON	230	#1	1	420	793	Amps	EMERGENCY	758	95.6	811	102.2	6.6
STOREY 2	230	BORDEN	230	#1	1	155	793	Amps	EMERGENCY	787	99.2	840	105.87	6.6
STOREY 2	230	BORDEN	230	#1	1	12	793	Amps	EMERGENCY	781	98.5	834	105.12	6.6
STOREY 2	230	BORDEN	230	#1	1	11	793	Amps	EMERGENCY	845	106.6	898	113.22	6.6
STOREY 2	230	BORDEN	230	#1	1	169	793	Amps	EMERGENCY	787	99.3	840	105.9	6.6
STOREY 2	230	WILSON	230	#1	1	416	793	Amps	EMERGENCY	811	102.2	864	108.88	6.6
STOREY 2	230	WILSON	230	#1	1	365	793	Amps	EMERGENCY	742	93.5	795	100.18	6.6
STOREY 2	230	BORDEN	230	#1	1	207	793	Amps	EMERGENCY	757	95.4	809	102.03	6.6
STOREY 2	230	WILSON	230	#1	1	417	793	Amps	EMERGENCY	750	94.6	803	101.23	6.6
STOREY 2	230	BORDEN	230	#1	1	382	793	Amps	EMERGENCY	762	96	814	102.66	6.6
STOREY 2	230	BORDEN	230	#1	1	156	793	Amps	EMERGENCY	786	99.1	839	105.75	6.6
STOREY 2	230	BORDEN	230	#1	1	157	793	Amps	EMERGENCY	784	98.9	837	105.52	6.6
STOREY 2	230	BORDEN	230	#1	1	5	793	Amps	EMERGENCY	765	96.5	818	103.12	6.6
STOREY 2	230	BORDEN	230	#1	1	427	793	Amps	EMERGENCY	914	115.2	967	121.85	6.6
STOREY 2	230	BORDEN	230	#1	1	428	793	Amps	EMERGENCY	832	104.9	885	111.53	6.6
STOREY 2	230	BORDEN	230	#1	1	435	793	Amps	EMERGENCY	796	100.4	849	106.98	6.6
STOREY 2	230	BORDEN	230	#1	1	62	793	Amps	EMERGENCY	766	96.5	818	103.14	6.6
STOREY 2	230	WILSON	230	#1	1	160	793	Amps	EMERGENCY	796	100.3	848	106.95	6.6
STOREY 2	230	BORDEN	230	#1	1	6	793	Amps	EMERGENCY	765	96.4	817	102.99	6.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	BORDEN	230	#1	1	179	793	Amps	EMERGENCY	815	102.7	867	109.35	6.6
STOREY 2	230	BORDEN	230	#1	1	7	793	Amps	EMERGENCY	763	96.2	815	102.76	6.6
STOREY 2	230	BORDEN	230	#1	1	380	793	Amps	EMERGENCY	780	98.3	832	104.9	6.6
STOREY 2	230	BORDEN	230	#1	1	372	793	Amps	EMERGENCY	899	113.3	951	119.9	6.6
STOREY 2	230	BORDEN	230	#1	1	373	793	Amps	EMERGENCY	817	103	869	109.6	6.6
STOREY 2	230	WILSON	230	#1	1	11	793	Amps	EMERGENCY	777	98	829	104.55	6.6
STOREY 2	230	BORDEN	230	#1	1	206	793	Amps	EMERGENCY	758	95.5	810	102.12	6.6
STOREY 2	230	BORDEN	230	#1	1	197	793	Amps	EMERGENCY	799	100.7	851	107.25	6.6
STOREY 2	230	WILSON	230	#1	1	427	793	Amps	EMERGENCY	845	106.5	897	113.12	6.6
STOREY 2	230	BORDEN	230	#1	1	196	793	Amps	EMERGENCY	880	111	932	117.54	6.6
STOREY 2	230	WILSON	230	#1	1	428	793	Amps	EMERGENCY	763	96.2	816	102.82	6.6
STOREY 2	230	BORDEN	230	#1	1	41	793	Amps	EMERGENCY	768	96.8	820	103.33	6.6
STOREY 2	230	WILSON	230	#1	1	179	793	Amps	EMERGENCY	747	94.2	799	100.71	6.6
STOREY 2	230	WILSON	230	#1	1	372	793	Amps	EMERGENCY	830	104.7	882	111.22	6.6
STOREY 2	230	WILSON	230	#1	1	373	793	Amps	EMERGENCY	749	94.4	801	100.94	6.6
STOREY 2	230	BORDEN	230	#1	1	390	793	Amps	EMERGENCY	768	96.8	820	103.35	6.6
STOREY 2	230	BORDEN	230	#1	1	389	793	Amps	EMERGENCY	849	107.1	901	113.61	6.6
STOREY 1	230	WILSON	230	#1	1	432	851	Amps	EMERGENCY	891	104.7	946	111.21	6.5
OAKH_JCT	115	SHARON T	115	#1	1	165	397	Amps	EMERGENCY	391	98.5	416	105	6.5
STOREY 2	230	BORDEN	230	#1	1	154	793	Amps	EMERGENCY	779	98.2	831	104.76	6.5
STOREY 1	230	WILSON	230	#1	1	377	851	Amps	EMERGENCY	871	102.4	927	108.93	6.5
STOREY 2	230	WILSON	230	#1	1	196	793	Amps	EMERGENCY	812	102.3	864	108.87	6.5
STOREY 2	230	BORDEN	230	#1	1	112	793	Amps	EMERGENCY	768	96.8	820	103.35	6.5
STOREY 2	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	781	98.4	832	104.94	6.5
STOREY 2	230	BORDEN	230	#1	1	4	793	Amps	EMERGENCY	757	95.5	809	101.99	6.5
STOREY 1	230	WILSON	230	#1	1	203	851	Amps	EMERGENCY	846	99.5	902	105.99	6.5
STOREY 2	230	BORDEN	230	#1	1	75	793	Amps	EMERGENCY	759	95.7	811	102.21	6.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	WILSON	230	#1	1	389	793	Amps	EMERGENCY	781	98.5	833	104.97	6.5
STOREY 2	230	BORDEN	230	#1	1	111	793	Amps	EMERGENCY	772	97.3	823	103.8	6.5
STOREY 2	230	BORDEN	230	#1	1	115	793	Amps	EMERGENCY	787	99.2	838	105.67	6.5
STOREY 2	230	BORDEN	230	#1	1	418	793	Amps	EMERGENCY	793	100	844	106.45	6.5
STOREY 2	230	BORDEN	230	#1	1	419	793	Amps	EMERGENCY	793	100	844	106.45	6.5
STOREY 1	230	WILSON	230	#1	1	394	851	Amps	EMERGENCY	815	95.7	870	102.22	6.5
STOREY 2	230	BORDEN	230	#1	1	162	793	Amps	EMERGENCY	777	97.9	828	104.38	6.5
STOREY 2	230	BORDEN	230	#1	1	163	793	Amps	EMERGENCY	777	97.9	828	104.38	6.5
STOREY 2	230	BORDEN	230	#1	1	433	793	Amps	EMERGENCY	788	99.3	839	105.78	6.5
STOREY 2	230	BORDEN	230	#1	1	434	793	Amps	EMERGENCY	787	99.2	838	105.63	6.5
STOREY 2	230	BORDEN	230	#1	1	38	793	Amps	EMERGENCY	761	95.9	812	102.41	6.5
STOREY 2	230	BORDEN	230	#1	1	378	793	Amps	EMERGENCY	771	97.2	823	103.7	6.5
STOREY 2	230	BORDEN	230	#1	1	379	793	Amps	EMERGENCY	770	97.1	821	103.55	6.5
STOREY 2	230	BORDEN	230	#1	1	299	793	Amps	EMERGENCY	755	95.2	806	101.61	6.5
STOREY 2	230	BORDEN	230	#1	1	63	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	793	100	844	106.42	6.4
STOREY 2	230	BORDEN	230	#1	1	27	793	Amps	EMERGENCY	779	98.2	830	104.62	6.4
STOREY 2	230	BORDEN	230	#1	1	117	793	Amps	EMERGENCY	778	98.1	829	104.5	6.4
STOREY 2	230	BORDEN	230	#1	1	113	793	Amps	EMERGENCY	777	97.9	828	104.36	6.4
STOREY 2	230	BORDEN	230	#1	1	429	793	Amps	EMERGENCY	793	99.9	844	106.35	6.4
STOREY 2	230	BORDEN	230	#1	1	69	793	Amps	EMERGENCY	759	95.7	810	102.1	6.4
STOREY 2	230	BORDEN	230	#1	1	355	793	Amps	EMERGENCY	777	98	828	104.44	6.4
STOREY 2	230	BORDEN	230	#1	1	265	793	Amps	EMERGENCY	762	96	813	102.44	6.4
STOREY 2	230	BORDEN	230	#1	1	362	793	Amps	EMERGENCY	762	96	813	102.44	6.4
STOREY 2	230	BORDEN	230	#1	1	42	793	Amps	EMERGENCY	760	95.8	811	102.23	6.4
STOREY 2	230	BORDEN	230	#1	1	251	793	Amps	EMERGENCY	760	95.8	811	102.23	6.4
STOREY 2	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	776	97.9	827	104.3	6.4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	757	95.4	808	101.84	6.4
STOREY 2	230	BORDEN	230	#1	1	60	793	Amps	EMERGENCY	759	95.7	810	102.16	6.4
STOREY 2	230	BORDEN	230	#1	1	40	793	Amps	EMERGENCY	755	95.2	806	101.64	6.4
STOREY 2	230	BORDEN	230	#1	1	45	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	776	97.9	827	104.3	6.4
STOREY 2	230	BORDEN	230	#1	1	158	793	Amps	EMERGENCY	776	97.9	827	104.3	6.4
STOREY 2	230	BORDEN	230	#1	1	159	793	Amps	EMERGENCY	776	97.9	827	104.3	6.4
STOREY 2	230	BORDEN	230	#1	1	256	793	Amps	EMERGENCY	768	96.8	819	103.21	6.4
STOREY 2	230	BORDEN	230	#1	1	54	793	Amps	EMERGENCY	771	97.2	822	103.63	6.4
STOREY 2	230	BORDEN	230	#1	1	361	793	Amps	EMERGENCY	758	95.5	809	101.97	6.4
STOREY 2	230	BORDEN	230	#1	1	374	793	Amps	EMERGENCY	776	97.9	827	104.28	6.4
STOREY 2	230	BORDEN	230	#1	1	264	793	Amps	EMERGENCY	757	95.5	808	101.89	6.4
STOREY 2	230	BORDEN	230	#1	1	120	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	66	793	Amps	EMERGENCY	769	97	820	103.39	6.4
STOREY 2	230	BORDEN	230	#1	1	119	793	Amps	EMERGENCY	756	95.3	807	101.68	6.4
STOREY 2	230	BORDEN	230	#1	1	80	793	Amps	EMERGENCY	756	95.3	807	101.73	6.4
STOREY 2	230	BORDEN	230	#1	1	92	793	Amps	EMERGENCY	756	95.3	807	101.68	6.4
STOREY 2	230	BORDEN	230	#1	1	249	793	Amps	EMERGENCY	759	95.7	810	102.07	6.4
STOREY 2	230	BORDEN	230	#1	1	270	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	297	793	Amps	EMERGENCY	755	95.2	806	101.59	6.4
STOREY 2	230	BORDEN	230	#1	1	431	793	Amps	EMERGENCY	773	97.5	824	103.92	6.4
STOREY 2	230	BORDEN	230	#1	1	65	793	Amps	EMERGENCY	755	95.2	806	101.65	6.4
STOREY 2	230	BORDEN	230	#1	1	289	793	Amps	EMERGENCY	758	95.5	809	101.94	6.4
STOREY 2	230	BORDEN	230	#1	1	250	793	Amps	EMERGENCY	758	95.6	809	101.98	6.4
STOREY 2	230	BORDEN	230	#1	1	91	793	Amps	EMERGENCY	758	95.6	809	102.01	6.4
STOREY 2	230	BORDEN	230	#1	1	269	793	Amps	EMERGENCY	755	95.2	806	101.64	6.4
STOREY 2	230	BORDEN	230	#1	1	276	793	Amps	EMERGENCY	755	95.2	806	101.56	6.4

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	BORDEN	230	#1	1	244	793	Amps	EMERGENCY	758	95.5	808	101.92	6.4
STOREY 2	230	BORDEN	230	#1	1	246	793	Amps	EMERGENCY	755	95.2	806	101.58	6.4
STOREY 2	230	BORDEN	230	#1	1	266	793	Amps	EMERGENCY	756	95.3	807	101.71	6.4
STOREY 2	230	BORDEN	230	#1	1	268	793	Amps	EMERGENCY	755	95.1	806	101.55	6.4
STOREY 2	230	BORDEN	230	#1	1	277	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	262	793	Amps	EMERGENCY	758	95.6	809	101.99	6.4
STOREY 2	230	BORDEN	230	#1	1	46	793	Amps	EMERGENCY	758	95.5	809	101.93	6.4
STOREY 2	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	757	95.4	807	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	231	793	Amps	EMERGENCY	755	95.2	806	101.57	6.4
STOREY 2	230	BORDEN	230	#1	1	242	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	243	793	Amps	EMERGENCY	757	95.4	807	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	273	793	Amps	EMERGENCY	755	95.1	805	101.54	6.4
STOREY 2	230	BORDEN	230	#1	1	295	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	83	793	Amps	EMERGENCY	757	95.4	808	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	226	793	Amps	EMERGENCY	756	95.2	806	101.66	6.4
STOREY 2	230	BORDEN	230	#1	1	32	793	Amps	EMERGENCY	755	95.1	806	101.55	6.4
STOREY 2	230	BORDEN	230	#1	1	228	793	Amps	EMERGENCY	755	95.2	806	101.56	6.4
STOREY 2	230	BORDEN	230	#1	1	50	793	Amps	EMERGENCY	755	95.1	805	101.55	6.4
STOREY 2	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	757	95.4	808	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	74	793	Amps	EMERGENCY	757	95.4	808	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	755	95.2	806	101.61	6.4
STOREY 2	230	BORDEN	230	#1	1	109	793	Amps	EMERGENCY	768	96.8	819	103.25	6.4
STOREY 2	230	BORDEN	230	#1	1	261	793	Amps	EMERGENCY	756	95.3	806	101.66	6.4
STOREY 2	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	768	96.8	819	103.19	6.4
STOREY 2	230	BORDEN	230	#1	1	240	793	Amps	EMERGENCY	755	95.2	806	101.58	6.4
STOREY 2	230	BORDEN	230	#1	1	255	793	Amps	EMERGENCY	755	95.2	806	101.64	6.4
STOREY 2	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	755	95.2	806	101.61	6.4

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
STOREY 2	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	755	95.2	806	101.61	6.4
STOREY 2	230	BORDEN	230	#1	1	376	793	Amps	EMERGENCY	757	95.4	808	101.84	6.4
STOREY 2	230	BORDEN	230	#1	1	430	793	Amps	EMERGENCY	763	96.1	813	102.53	6.4
STOREY 2	230	BORDEN	230	#1	1	48	793	Amps	EMERGENCY	755	95.2	806	101.64	6.4
STOREY 2	230	BORDEN	230	#1	1	122	793	Amps	EMERGENCY	755	95.2	806	101.61	6.4
STOREY 2	230	BORDEN	230	#1	1	263	793	Amps	EMERGENCY	757	95.4	808	101.81	6.4
STOREY 2	230	BORDEN	230	#1	1	118	793	Amps	EMERGENCY	775	97.7	826	104.13	6.4
STOREY 2	230	BORDEN	230	#1	1	257	793	Amps	EMERGENCY	755	95.2	806	101.59	6.4
STOREY 2	230	BORDEN	230	#1	1	275	793	Amps	EMERGENCY	757	95.5	808	101.88	6.4
STOREY 2	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	762	96	812	102.4	6.4
STOREY 2	230	BORDEN	230	#1	1	253	793	Amps	EMERGENCY	757	95.4	807	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	274	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	360	793	Amps	EMERGENCY	758	95.6	809	101.97	6.4
STOREY 2	230	BORDEN	230	#1	1	241	793	Amps	EMERGENCY	760	95.8	811	102.22	6.4
STOREY 2	230	BORDEN	230	#1	1	247	793	Amps	EMERGENCY	755	95.2	806	101.56	6.4
STOREY 2	230	BORDEN	230	#1	1	285	793	Amps	EMERGENCY	755	95.2	806	101.61	6.4
STOREY 2	230	BORDEN	230	#1	1	292	793	Amps	EMERGENCY	768	96.8	818	103.16	6.4
STOREY 2	230	BORDEN	230	#1	1	237	793	Amps	EMERGENCY	769	97	820	103.37	6.4
STOREY 2	230	BORDEN	230	#1	1	281	793	Amps	EMERGENCY	766	96.6	817	102.99	6.4
STOREY 2	230	BORDEN	230	#1	1	280	793	Amps	EMERGENCY	767	96.7	818	103.09	6.4
STOREY 2	230	BORDEN	230	#1	1	233	793	Amps	EMERGENCY	761	96	811	102.29	6.3
STOREY 2	230	BORDEN	230	#1	1	235	793	Amps	EMERGENCY	762	96.1	813	102.44	6.3
STOREY 2	230	BORDEN	230	#1	1	432	793	Amps	EMERGENCY	825	104	872	109.94	6
STOREY 2	230	BORDEN	230	#1	1	377	793	Amps	EMERGENCY	808	101.9	855	107.84	6
STOREY 2	230	BORDEN	230	#1	1	203	793	Amps	EMERGENCY	787	99.2	834	105.15	6
STOREY 2	230	WILSON	230	#1	1	432	793	Amps	EMERGENCY	756	95.3	803	101.24	5.9
STOREY 2	230	BORDEN	230	#1	1	394	793	Amps	EMERGENCY	760	95.8	807	101.7	5.9

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Category B outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PCT (%)	PST _LOADING	PCT (%)	DELTA _PCT(%)
ORO LOMA	70	DOS PALS	70	#1	1	44	282	Amps	EMERGENCY	294	104.3	310	109.91	5.6
ORO LOMA	70	DOS PALS	70	#1	1	125	282	Amps	EMERGENCY	291	103.2	307	108.79	5.6
ORO LOMA	70	DOS PALS	70	#1	1	118	282	Amps	EMERGENCY	280	99.4	296	104.93	5.5
AGRCJCT	70	KERMAN	70	#1	1	196	379	Amps	EMERGENCY	375	98.8	381	100.36	1.5
KINGS J2	115	KINGS J1	115	#1	1	240	600	Amps	EMERGENCY	737	122.8	719	119.79	-3

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
PANOCHE	230	LOSBANOS	230	#2	1	18	850	Amps	EMERGENCY	752	88.4	872	102.5	14.1
WILSON	230	WARNERVL	230	#1	1	17	793	Amps	EMERGENCY	888	111.9	993	125.2	13.3
WILSON	230	WARNERVL	230	#1	1	19	793	Amps	EMERGENCY	934	117.7	1032	130.2	12.4
PANOCHE	230	DS AMIGO	230	#1	1	19	850	Amps	EMERGENCY	818	96.3	924	108.7	12.4
WILSON	230	WARNERVL	230	#1	1	18	793	Amps	EMERGENCY	842	106.1	940	118.4	12.3
LE GRAND	115	WILSON A	115	#1	1	13	512	Amps	EMERGENCY	756	147.7	819	159.9	12.2
WILSON	230	WARNERVL	230	#1	1	7	793	Amps	EMERGENCY	849	107.1	946	119.3	12.2
WILSON	230	WARNERVL	230	#1	1	6	793	Amps	EMERGENCY	841	106	938	118.2	12.2
WILSON	230	WARNERVL	230	#1	1	15	793	Amps	EMERGENCY	827	104.2	923	116.3	12.1
WILSON	230	WARNERVL	230	#1	1	20	793	Amps	EMERGENCY	795	100.3	891	112.4	12.1
WILSON	230	WARNERVL	230	#1	1	16	793	Amps	EMERGENCY	959	120.9	1053	132.7	11.8
WILSON	230	WARNERVL	230	#1	1	57	793	Amps	EMERGENCY	959	120.9	1053	132.7	11.8
WILSON	230	WARNERVL	230	#1	1	58	793	Amps	EMERGENCY	962	121.3	1056	133.1	11.8
WILSON	230	WARNERVL	230	#1	1	77	793	Amps	EMERGENCY	828	104.4	919	115.8	11.4
WILSON	230	WARNERVL	230	#1	1	71	793	Amps	EMERGENCY	917	115.6	1006	126.9	11.3
WILSON	230	WARNERVL	230	#1	1	62	793	Amps	EMERGENCY	834	105.2	924	116.4	11.2
WILSON	230	WARNERVL	230	#1	1	63	793	Amps	EMERGENCY	922	116.3	1012	127.5	11.2

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	32	793	Amps	EMERGENCY	808	101.9	897	113.1	11.2
OAKH_JCT	115	SHARON T	115	#1	1	13	397	Amps	EMERGENCY	598	150.7	642	161.9	11.2
WILSON	230	WARNERVL	230	#1	1	72	793	Amps	EMERGENCY	852	107.4	941	118.6	11.2
WILSON	230	WARNERVL	230	#1	1	70	793	Amps	EMERGENCY	803	101.2	892	112.4	11.2
CHWCHLLA	115	CERTANJ1	115	#1	1	13	397	Amps	EMERGENCY	572	144.1	616	155.3	11.1
SHARON T	115	CERTANJ1	115	#1	1	13	397	Amps	EMERGENCY	573	144.4	617	155.5	11.1
WILSON	230	WARNERVL	230	#1	1	47	793	Amps	EMERGENCY	863	108.8	951	119.9	11.1
WILSON	230	WARNERVL	230	#1	1	127	793	Amps	EMERGENCY	807	101.8	895	112.9	11.1
WILSON	230	WARNERVL	230	#1	1	76	793	Amps	EMERGENCY	867	109.4	956	120.5	11.1
WILSON	230	WARNERVL	230	#1	1	34	793	Amps	EMERGENCY	798	100.6	886	111.7	11.1
WILSON	230	WARNERVL	230	#1	1	105	793	Amps	EMERGENCY	837	105.5	925	116.6	11.1
WILSON	230	WARNERVL	230	#1	1	54	793	Amps	EMERGENCY	830	104.6	918	115.7	11.1
WILSON	230	WARNERVL	230	#1	1	28	793	Amps	EMERGENCY	818	103.1	906	114.2	11.1
WILSON	230	WARNERVL	230	#1	1	22	793	Amps	EMERGENCY	826	104.1	913	115.2	11.1
WILSON	230	WARNERVL	230	#1	1	36	793	Amps	EMERGENCY	791	99.8	879	110.8	11.1
WILSON	230	WARNERVL	230	#1	1	103	793	Amps	EMERGENCY	814	102.6	902	113.7	11.1
WILSON	230	WARNERVL	230	#1	1	90	793	Amps	EMERGENCY	816	102.9	904	114	11.1
WILSON	230	WARNERVL	230	#1	1	97	793	Amps	EMERGENCY	809	102	897	113.1	11.1
WILSON	230	WARNERVL	230	#1	1	74	793	Amps	EMERGENCY	817	103	905	114.1	11.1
WILSON	230	WARNERVL	230	#1	1	53	793	Amps	EMERGENCY	807	101.8	895	112.8	11.1
WILSON	230	WARNERVL	230	#1	1	75	793	Amps	EMERGENCY	809	101.9	897	113	11.1
WILSON	230	WARNERVL	230	#1	1	98	793	Amps	EMERGENCY	807	101.8	895	112.8	11.1
WILSON	230	WARNERVL	230	#1	1	27	793	Amps	EMERGENCY	837	105.5	924	116.5	11.1
WILSON	230	WARNERVL	230	#1	1	104	793	Amps	EMERGENCY	836	105.4	924	116.5	11.1
WILSON	230	WARNERVL	230	#1	1	41	793	Amps	EMERGENCY	836	105.4	924	116.5	11.1
WILSON	230	WARNERVL	230	#1	1	88	793	Amps	EMERGENCY	803	101.3	891	112.4	11.1
WILSON	230	WARNERVL	230	#1	1	40	793	Amps	EMERGENCY	805	101.5	893	112.6	11.1
WILSON	230	WARNERVL	230	#1	1	89	793	Amps	EMERGENCY	803	101.3	891	112.4	11.1

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	49	793	Amps	EMERGENCY	799	100.7	887	111.8	11.1
WILSON	230	WARNERVL	230	#1	1	108	793	Amps	EMERGENCY	799	100.7	887	111.8	11.1
WILSON	230	WARNERVL	230	#1	1	92	793	Amps	EMERGENCY	808	101.9	896	113	11.1
WILSON	230	WARNERVL	230	#1	1	114	793	Amps	EMERGENCY	795	100.2	882	111.2	11.1
WILSON	230	WARNERVL	230	#1	1	123	793	Amps	EMERGENCY	796	100.3	884	111.4	11.1
WILSON	230	WARNERVL	230	#1	1	38	793	Amps	EMERGENCY	794	100.1	882	111.2	11.1
WILSON	230	WARNERVL	230	#1	1	119	793	Amps	EMERGENCY	795	100.2	883	111.3	11.1
WILSON	230	WARNERVL	230	#1	1	132	793	Amps	EMERGENCY	790	99.6	878	110.7	11.1
WILSON	230	WARNERVL	230	#1	1	39	793	Amps	EMERGENCY	792	99.9	880	110.9	11.1
WILSON	230	WARNERVL	230	#1	1	109	793	Amps	EMERGENCY	789	99.5	877	110.5	11.1
WILSON	230	WARNERVL	230	#1	1	115	793	Amps	EMERGENCY	795	100.2	882	111.2	11.1
WILSON	230	WARNERVL	230	#1	1	126	793	Amps	EMERGENCY	790	99.6	878	110.7	11.1
WILSON	230	WARNERVL	230	#1	1	128	793	Amps	EMERGENCY	789	99.4	877	110.5	11.1
WILSON	230	WARNERVL	230	#1	1	134	793	Amps	EMERGENCY	791	99.7	878	110.7	11.1
WILSON	230	WARNERVL	230	#1	1	95	793	Amps	EMERGENCY	798	100.6	886	111.7	11.1
WILSON	230	WARNERVL	230	#1	1	112	793	Amps	EMERGENCY	790	99.6	878	110.6	11.1
WILSON	230	WARNERVL	230	#1	1	118	793	Amps	EMERGENCY	814	102.6	901	113.6	11.1
WILSON	230	WARNERVL	230	#1	1	4	793	Amps	EMERGENCY	794	100.2	882	111.2	11.1
WILSON	230	WARNERVL	230	#1	1	124	793	Amps	EMERGENCY	794	100.1	882	111.1	11.1
WILSON	230	WARNERVL	230	#1	1	81	793	Amps	EMERGENCY	809	102	897	113	11
WILSON	230	WARNERVL	230	#1	1	94	793	Amps	EMERGENCY	789	99.5	877	110.5	11
WILSON	230	WARNERVL	230	#1	1	122	793	Amps	EMERGENCY	802	101.2	890	112.2	11
WILSON	230	WARNERVL	230	#1	1	135	793	Amps	EMERGENCY	789	99.5	877	110.6	11
WILSON	230	WARNERVL	230	#1	1	113	793	Amps	EMERGENCY	791	99.8	879	110.8	11
WILSON	230	WARNERVL	230	#1	1	117	793	Amps	EMERGENCY	791	99.8	879	110.8	11
WILSON	230	WARNERVL	230	#1	1	43	793	Amps	EMERGENCY	791	99.8	879	110.8	11
WILSON	230	WARNERVL	230	#1	1	130	793	Amps	EMERGENCY	790	99.6	878	110.6	11
WILSON	230	WARNERVL	230	#1	1	73	793	Amps	EMERGENCY	798	100.6	885	111.6	11

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	116	793	Amps	EMERGENCY	789	99.5	877	110.5	11
WILSON	230	WARNERVL	230	#1	1	99	793	Amps	EMERGENCY	824	103.9	912	114.9	11
WILSON	230	WARNERVL	230	#1	1	100	793	Amps	EMERGENCY	820	103.3	907	114.3	11
WILSON	230	WARNERVL	230	#1	1	110	793	Amps	EMERGENCY	790	99.6	877	110.6	11
WILSON	230	WARNERVL	230	#1	1	129	793	Amps	EMERGENCY	790	99.6	877	110.6	11
WILSON	230	WARNERVL	230	#1	1	106	793	Amps	EMERGENCY	792	99.8	879	110.8	11
WILSON	230	WARNERVL	230	#1	1	131	793	Amps	EMERGENCY	792	99.8	879	110.8	11
WILSON	230	WARNERVL	230	#1	1	101	793	Amps	EMERGENCY	802	101.1	889	112	11
WILSON	230	WARNERVL	230	#1	1	102	793	Amps	EMERGENCY	806	101.6	893	112.6	10.9
WILSON	230	WARNERVL	230	#1	1	29	793	Amps	EMERGENCY	809	102	896	113	10.9
WILSON	230	WARNERVL	230	#1	1	3	793	Amps	EMERGENCY	810	102.1	897	113	10.9
WILSON	230	WARNERVL	230	#1	1	48	793	Amps	EMERGENCY	836	105.3	922	116.2	10.9
WILSON	230	WARNERVL	230	#1	1	21	793	Amps	EMERGENCY	788	99.4	875	110.3	10.9
WILSON	230	WARNERVL	230	#1	1	26	793	Amps	EMERGENCY	813	102.5	900	113.4	10.9
CERTAN T	115	LE GRAND	115	#1	1	13	397	Amps	EMERGENCY	507	127.8	550	138.7	10.9
WILSON	230	WARNERVL	230	#1	1	45	793	Amps	EMERGENCY	811	102.2	897	113	10.8
WILSON	230	WARNERVL	230	#1	1	46	793	Amps	EMERGENCY	799	100.8	885	111.6	10.8
WILSON	230	WARNERVL	230	#1	1	44	793	Amps	EMERGENCY	793	99.9	879	110.8	10.8
WILSON	230	WARNERVL	230	#1	1	24	793	Amps	EMERGENCY	802	101.1	887	111.9	10.7
WILSON	230	WARNERVL	230	#1	1	85	793	Amps	EMERGENCY	844	106.4	928	117	10.6
WILSON	230	WARNERVL	230	#1	1	59	793	Amps	EMERGENCY	952	120	1034	130.4	10.3
WILSON	230	WARNERVL	230	#1	1	79	793	Amps	EMERGENCY	799	100.7	880	111	10.3
WARNERVL	230	COTTLE B	230	#1	1	15	793	Amps	EMERGENCY	845	106.6	919	115.9	9.4
COTTLE B	230	BELLOTA	230	#1	1	15	793	Amps	EMERGENCY	783	98.7	857	108	9.3
WARNERVL	230	COTTLE B	230	#1	1	19	793	Amps	EMERGENCY	906	114.2	980	123.5	9.3
COTTLE B	230	BELLOTA	230	#1	1	19	793	Amps	EMERGENCY	844	106.4	917	115.6	9.2
WARNERVL	230	COTTLE B	230	#1	1	18	793	Amps	EMERGENCY	844	106.4	917	115.6	9.2
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	848	107	921	116.1	9.2

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	844	106.4	917	115.6	9.2
COTTLE B	230	BELLOTA	230	#1	1	18	793	Amps	EMERGENCY	782	98.6	855	107.8	9.2
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	786	99.1	859	108.3	9.1
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	782	98.6	854	107.7	9.1
WARNERVL	230	COTTLE B	230	#1	1	17	793	Amps	EMERGENCY	834	105.2	906	114.2	9.1
COTTLE B	230	BELLOTA	230	#1	1	17	793	Amps	EMERGENCY	772	97.4	844	106.4	9
WILSON	230	WARNERVL	230	#1	1	84	793	Amps	EMERGENCY	877	110.6	949	119.6	9
WARNERVL	230	COTTLE B	230	#1	1	16	793	Amps	EMERGENCY	928	116.9	999	125.9	9
WARNERVL	230	COTTLE B	230	#1	1	57	793	Amps	EMERGENCY	928	116.9	999	125.9	9
WARNERVL	230	COTTLE B	230	#1	1	58	793	Amps	EMERGENCY	930	117.2	1001	126.1	8.9
COTTLE B	230	BELLOTA	230	#1	1	16	793	Amps	EMERGENCY	865	109.1	936	118	8.9
COTTLE B	230	BELLOTA	230	#1	1	57	793	Amps	EMERGENCY	865	109.1	936	118	8.9
COTTLE B	230	BELLOTA	230	#1	1	58	793	Amps	EMERGENCY	867	109.3	938	118.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	77	793	Amps	EMERGENCY	840	105.9	909	114.6	8.7
COTTLE B	230	BELLOTA	230	#1	1	77	793	Amps	EMERGENCY	778	98.1	847	106.8	8.7
WARNERVL	230	COTTLE B	230	#1	1	71	793	Amps	EMERGENCY	900	113.5	969	122.1	8.7
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	846	106.6	914	115.3	8.6
WARNERVL	230	COTTLE B	230	#1	1	32	793	Amps	EMERGENCY	827	104.3	896	112.9	8.6
WARNERVL	230	COTTLE B	230	#1	1	63	793	Amps	EMERGENCY	904	113.9	972	122.6	8.6
WARNERVL	230	COTTLE B	230	#1	1	70	793	Amps	EMERGENCY	820	103.3	888	112	8.6
WARNERVL	230	COTTLE B	230	#1	1	72	793	Amps	EMERGENCY	858	108.1	926	116.7	8.6
COTTLE B	230	BELLOTA	230	#1	1	71	793	Amps	EMERGENCY	838	105.6	906	114.2	8.6
COTTLE B	230	BELLOTA	230	#1	1	32	793	Amps	EMERGENCY	765	96.5	833	105.1	8.6
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	784	98.8	852	107.4	8.6
COTTLE B	230	BELLOTA	230	#1	1	63	793	Amps	EMERGENCY	842	106.1	910	114.7	8.6
WARNERVL	230	COTTLE B	230	#1	1	22	793	Amps	EMERGENCY	840	105.9	908	114.5	8.6
WARNERVL	230	COTTLE B	230	#1	1	127	793	Amps	EMERGENCY	829	104.5	897	113	8.6
WARNERVL	230	COTTLE B	230	#1	1	27	793	Amps	EMERGENCY	847	106.8	916	115.4	8.6

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	34	793	Amps	EMERGENCY	822	103.7	890	112.3	8.6
WARNERVL	230	COTTLE B	230	#1	1	47	793	Amps	EMERGENCY	868	109.4	936	118	8.6
COTTLE B	230	BELLOTA	230	#1	1	70	793	Amps	EMERGENCY	758	95.5	826	104.1	8.6
WARNERVL	230	COTTLE B	230	#1	1	28	793	Amps	EMERGENCY	835	105.3	903	113.9	8.6
WARNERVL	230	COTTLE B	230	#1	1	105	793	Amps	EMERGENCY	849	107.1	917	115.6	8.6
COTTLE B	230	BELLOTA	230	#1	1	72	793	Amps	EMERGENCY	796	100.3	863	108.9	8.6
WARNERVL	230	COTTLE B	230	#1	1	36	793	Amps	EMERGENCY	817	102.9	884	111.5	8.6
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	845	106.5	913	115.1	8.6
WARNERVL	230	COTTLE B	230	#1	1	103	793	Amps	EMERGENCY	833	105	901	113.6	8.6
BORDEN	230	STOREY 1	230	#1	1	17	793	Amps	EMERGENCY	934	117.8	1002	126.4	8.6
WARNERVL	230	COTTLE B	230	#1	1	41	793	Amps	EMERGENCY	848	106.9	916	115.5	8.6
WARNERVL	230	COTTLE B	230	#1	1	76	793	Amps	EMERGENCY	871	109.8	939	118.4	8.6
WARNERVL	230	COTTLE B	230	#1	1	90	793	Amps	EMERGENCY	835	105.2	902	113.8	8.6
WARNERVL	230	COTTLE B	230	#1	1	97	793	Amps	EMERGENCY	830	104.6	898	113.2	8.6
WARNERVL	230	COTTLE B	230	#1	1	89	793	Amps	EMERGENCY	825	104.1	893	112.6	8.6
WARNERVL	230	COTTLE B	230	#1	1	75	793	Amps	EMERGENCY	829	104.5	897	113.1	8.6
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	827	104.2	894	112.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	828	104.4	896	113	8.5
WARNERVL	230	COTTLE B	230	#1	1	88	793	Amps	EMERGENCY	825	104.1	893	112.6	8.5
WARNERVL	230	COTTLE B	230	#1	1	98	793	Amps	EMERGENCY	828	104.4	896	113	8.5
WARNERVL	230	COTTLE B	230	#1	1	114	793	Amps	EMERGENCY	819	103.2	887	111.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	119	793	Amps	EMERGENCY	819	103.3	887	111.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	38	793	Amps	EMERGENCY	819	103.2	886	111.7	8.5
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	822	103.7	890	112.2	8.5
WARNERVL	230	COTTLE B	230	#1	1	104	793	Amps	EMERGENCY	849	107	917	115.6	8.5
WARNERVL	230	COTTLE B	230	#1	1	108	793	Amps	EMERGENCY	822	103.7	890	112.2	8.5
WARNERVL	230	COTTLE B	230	#1	1	132	793	Amps	EMERGENCY	816	102.9	884	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	39	793	Amps	EMERGENCY	817	103	885	111.6	8.5

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	835	105.3	903	113.9	8.5
WARNERVL	230	COTTLE B	230	#1	1	92	793	Amps	EMERGENCY	829	104.5	897	113.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	123	793	Amps	EMERGENCY	820	103.4	888	111.9	8.5
WARNERVL	230	COTTLE B	230	#1	1	109	793	Amps	EMERGENCY	815	102.8	883	111.3	8.5
WARNERVL	230	COTTLE B	230	#1	1	112	793	Amps	EMERGENCY	816	102.8	883	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	126	793	Amps	EMERGENCY	816	102.9	884	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	128	793	Amps	EMERGENCY	815	102.7	883	111.3	8.5
WARNERVL	230	COTTLE B	230	#1	1	134	793	Amps	EMERGENCY	816	102.9	884	111.5	8.5
WARNERVL	230	COTTLE B	230	#1	1	115	793	Amps	EMERGENCY	819	103.2	887	111.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	118	793	Amps	EMERGENCY	833	105	900	113.5	8.5
WARNERVL	230	COTTLE B	230	#1	1	95	793	Amps	EMERGENCY	822	103.6	890	112.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	124	793	Amps	EMERGENCY	818	103.2	886	111.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	22	793	Amps	EMERGENCY	778	98	845	106.6	8.5
WARNERVL	230	COTTLE B	230	#1	1	4	793	Amps	EMERGENCY	819	103.3	887	111.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	81	793	Amps	EMERGENCY	830	104.6	898	113.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	94	793	Amps	EMERGENCY	815	102.8	883	111.3	8.5
WARNERVL	230	COTTLE B	230	#1	1	135	793	Amps	EMERGENCY	815	102.8	883	111.3	8.5
WARNERVL	230	COTTLE B	230	#1	1	122	793	Amps	EMERGENCY	825	104	893	112.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	127	793	Amps	EMERGENCY	767	96.6	834	105.2	8.5
WARNERVL	230	COTTLE B	230	#1	1	113	793	Amps	EMERGENCY	817	103	884	111.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	27	793	Amps	EMERGENCY	785	99	853	107.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	34	793	Amps	EMERGENCY	760	95.9	828	104.4	8.5
COTTLE B	230	BELLOTA	230	#1	1	47	793	Amps	EMERGENCY	806	101.6	873	110.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	117	793	Amps	EMERGENCY	817	102.9	884	111.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	28	793	Amps	EMERGENCY	773	97.5	841	106	8.5
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	817	103	884	111.5	8.5
WARNERVL	230	COTTLE B	230	#1	1	130	793	Amps	EMERGENCY	816	102.9	883	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	73	793	Amps	EMERGENCY	821	103.5	889	112	8.5

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	116	793	Amps	EMERGENCY	815	102.8	883	111.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	105	793	Amps	EMERGENCY	787	99.2	855	107.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	36	793	Amps	EMERGENCY	755	95.1	822	103.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	783	98.7	851	107.2	8.5
WARNERVL	230	COTTLE B	230	#1	1	99	793	Amps	EMERGENCY	840	105.9	908	114.4	8.5
COTTLE B	230	BELLOTA	230	#1	1	103	793	Amps	EMERGENCY	771	97.2	838	105.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	41	793	Amps	EMERGENCY	786	99.1	853	107.6	8.5
STOREY 1	230	BORDEN	230	#1	1	19	793	Amps	EMERGENCY	1004	126.6	1072	135.1	8.5
WARNERVL	230	COTTLE B	230	#1	1	100	793	Amps	EMERGENCY	837	105.5	904	114	8.5
COTTLE B	230	BELLOTA	230	#1	1	76	793	Amps	EMERGENCY	809	102	877	110.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	90	793	Amps	EMERGENCY	773	97.4	840	105.9	8.5
COTTLE B	230	BELLOTA	230	#1	1	75	793	Amps	EMERGENCY	767	96.7	834	105.2	8.5
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	766	96.6	834	105.1	8.5
COTTLE B	230	BELLOTA	230	#1	1	88	793	Amps	EMERGENCY	763	96.2	831	104.8	8.5
COTTLE B	230	BELLOTA	230	#1	1	97	793	Amps	EMERGENCY	768	96.8	835	105.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	98	793	Amps	EMERGENCY	766	96.6	834	105.1	8.5
COTTLE B	230	BELLOTA	230	#1	1	89	793	Amps	EMERGENCY	763	96.2	831	104.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	765	96.4	832	104.9	8.5
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	760	95.8	828	104.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	108	793	Amps	EMERGENCY	760	95.8	828	104.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	104	793	Amps	EMERGENCY	787	99.2	854	107.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	114	793	Amps	EMERGENCY	757	95.4	824	103.9	8.5
WARNERVL	230	COTTLE B	230	#1	1	110	793	Amps	EMERGENCY	816	102.8	883	111.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	38	793	Amps	EMERGENCY	757	95.4	824	103.9	8.5
COTTLE B	230	BELLOTA	230	#1	1	39	793	Amps	EMERGENCY	755	95.2	823	103.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	119	793	Amps	EMERGENCY	757	95.5	825	104	8.5
COTTLE B	230	BELLOTA	230	#1	1	123	793	Amps	EMERGENCY	758	95.6	825	104.1	8.5
COTTLE B	230	BELLOTA	230	#1	1	132	793	Amps	EMERGENCY	754	95.1	821	103.6	8.5

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	109	793	Amps	EMERGENCY	753	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	126	793	Amps	EMERGENCY	754	95.1	821	103.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	112	793	Amps	EMERGENCY	754	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	128	793	Amps	EMERGENCY	753	94.9	820	103.4	8.5
COTTLE B	230	BELLOTA	230	#1	1	92	793	Amps	EMERGENCY	767	96.7	835	105.2	8.5
COTTLE B	230	BELLOTA	230	#1	1	118	793	Amps	EMERGENCY	771	97.1	838	105.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	134	793	Amps	EMERGENCY	754	95.1	822	103.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	773	97.5	841	106	8.5
COTTLE B	230	BELLOTA	230	#1	1	115	793	Amps	EMERGENCY	757	95.4	824	103.9	8.5
COTTLE B	230	BELLOTA	230	#1	1	95	793	Amps	EMERGENCY	760	95.8	827	104.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	124	793	Amps	EMERGENCY	757	95.4	824	103.9	8.5
WARNERVL	230	COTTLE B	230	#1	1	129	793	Amps	EMERGENCY	816	102.9	883	111.4	8.5
WARNERVL	230	COTTLE B	230	#1	1	106	793	Amps	EMERGENCY	817	103	884	111.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	81	793	Amps	EMERGENCY	768	96.8	835	105.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	94	793	Amps	EMERGENCY	753	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	4	793	Amps	EMERGENCY	757	95.5	825	104	8.5
COTTLE B	230	BELLOTA	230	#1	1	135	793	Amps	EMERGENCY	753	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	122	793	Amps	EMERGENCY	763	96.2	830	104.7	8.5
COTTLE B	230	BELLOTA	230	#1	1	113	793	Amps	EMERGENCY	755	95.1	822	103.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	117	793	Amps	EMERGENCY	755	95.1	822	103.6	8.5
WARNERVL	230	COTTLE B	230	#1	1	131	793	Amps	EMERGENCY	817	103	884	111.5	8.5
WARNERVL	230	COTTLE B	230	#1	1	101	793	Amps	EMERGENCY	824	103.8	891	112.3	8.5
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	755	95.2	822	103.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	73	793	Amps	EMERGENCY	759	95.7	826	104.2	8.5
COTTLE B	230	BELLOTA	230	#1	1	116	793	Amps	EMERGENCY	753	95	820	103.4	8.5
COTTLE B	230	BELLOTA	230	#1	1	130	793	Amps	EMERGENCY	754	95	821	103.5	8.5
WARNERVL	230	COTTLE B	230	#1	1	29	793	Amps	EMERGENCY	829	104.5	896	113	8.5
WARNERVL	230	COTTLE B	230	#1	1	102	793	Amps	EMERGENCY	827	104.2	894	112.7	8.5

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	99	793	Amps	EMERGENCY	778	98.1	845	106.6	8.5
COTTLE B	230	BELLOTA	230	#1	1	100	793	Amps	EMERGENCY	775	97.7	842	106.2	8.5
WARNERVL	230	COTTLE B	230	#1	1	3	793	Amps	EMERGENCY	829	104.6	896	113	8.5
COTTLE B	230	BELLOTA	230	#1	1	110	793	Amps	EMERGENCY	754	95	821	103.5	8.5
COTTLE B	230	BELLOTA	230	#1	1	129	793	Amps	EMERGENCY	754	95.1	821	103.5	8.4
COTTLE B	230	BELLOTA	230	#1	1	106	793	Amps	EMERGENCY	755	95.2	822	103.6	8.4
WARNERVL	230	COTTLE B	230	#1	1	48	793	Amps	EMERGENCY	849	107	915	115.4	8.4
COTTLE B	230	BELLOTA	230	#1	1	131	793	Amps	EMERGENCY	755	95.2	822	103.6	8.4
COTTLE B	230	BELLOTA	230	#1	1	101	793	Amps	EMERGENCY	762	96	828	104.4	8.4
COTTLE B	230	BELLOTA	230	#1	1	29	793	Amps	EMERGENCY	767	96.7	834	105.1	8.4
COTTLE B	230	BELLOTA	230	#1	1	102	793	Amps	EMERGENCY	765	96.4	831	104.8	8.4
WARNERVL	230	COTTLE B	230	#1	1	26	793	Amps	EMERGENCY	831	104.8	898	113.2	8.4
COTTLE B	230	BELLOTA	230	#1	1	3	793	Amps	EMERGENCY	767	96.7	834	105.1	8.4
WARNERVL	230	COTTLE B	230	#1	1	45	793	Amps	EMERGENCY	830	104.6	896	113	8.4
WARNERVL	230	COTTLE B	230	#1	1	46	793	Amps	EMERGENCY	822	103.7	889	112	8.4
COTTLE B	230	BELLOTA	230	#1	1	48	793	Amps	EMERGENCY	787	99.2	853	107.5	8.4
WARNERVL	230	COTTLE B	230	#1	1	44	793	Amps	EMERGENCY	818	103.2	885	111.6	8.4
CERTAN T	115	CHWCHLLA	115	#1	1	13	512	Amps	EMERGENCY	498	97.2	541	105.6	8.4
COTTLE B	230	BELLOTA	230	#1	1	26	793	Amps	EMERGENCY	769	97	836	105.4	8.4
COTTLE B	230	BELLOTA	230	#1	1	45	793	Amps	EMERGENCY	768	96.8	834	105.1	8.3
COTTLE B	230	BELLOTA	230	#1	1	46	793	Amps	EMERGENCY	760	95.8	826	104.2	8.3
COTTLE B	230	BELLOTA	230	#1	1	44	793	Amps	EMERGENCY	757	95.4	823	103.7	8.3
WARNERVL	230	COTTLE B	230	#1	1	24	793	Amps	EMERGENCY	824	103.9	890	112.2	8.3
BORDEN	230	STOREY 1	230	#1	1	20	793	Amps	EMERGENCY	901	113.6	967	121.8	8.3
WARNERVL	230	COTTLE B	230	#1	1	25	793	Amps	EMERGENCY	825	104	891	112.3	8.3
COTTLE B	230	BELLOTA	230	#1	1	24	793	Amps	EMERGENCY	762	96.1	828	104.3	8.3
WARNERVL	230	COTTLE B	230	#1	1	85	793	Amps	EMERGENCY	854	107.6	919	115.9	8.3
STOREY 1	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	1058	133.4	1124	141.7	8.2

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 1	230	BORDEN	230	#1	1	57	793	Amps	EMERGENCY	1058	133.4	1124	141.7	8.2
COTTLE B	230	BELLOTA	230	#1	1	25	793	Amps	EMERGENCY	764	96.3	829	104.5	8.2
STOREY 1	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	1067	134.5	1132	142.8	8.2
COTTLE B	230	BELLOTA	230	#1	1	85	793	Amps	EMERGENCY	792	99.8	857	108	8.2
BORDEN	230	STOREY 1	230	#1	1	18	793	Amps	EMERGENCY	916	115.4	980	123.6	8.1
BORDEN	230	STOREY 1	230	#1	1	7	793	Amps	EMERGENCY	918	115.7	982	123.8	8.1
BORDEN	230	STOREY 1	230	#1	1	6	793	Amps	EMERGENCY	913	115.1	978	123.2	8.1
STOREY 1	230	WILSON	230	#1	1	17	851	Amps	EMERGENCY	859	100.9	927	109	8
WILSON	230	WARNERVL	230	#1	1	65	793	Amps	EMERGENCY	846	106.6	909	114.7	8
STOREY 1	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	905	114.1	968	122.1	8
WARNERVL	230	COTTLE B	230	#1	1	79	793	Amps	EMERGENCY	821	103.5	884	111.5	8
STOREY 1	230	WILSON	230	#1	1	19	851	Amps	EMERGENCY	929	109.1	997	117.1	8
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	925	116.6	988	124.6	8
COTTLE B	230	BELLOTA	230	#1	1	79	793	Amps	EMERGENCY	759	95.7	822	103.6	7.9
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	863	108.8	926	116.7	7.9
BORDEN	230	STOREY 1	230	#1	1	87	793	Amps	EMERGENCY	901	113.6	963	121.4	7.8
BORDEN	230	STOREY 1	230	#1	1	21	793	Amps	EMERGENCY	905	114	966	121.8	7.8
STOREY 1	230	WILSON	230	#1	1	20	851	Amps	EMERGENCY	825	96.9	891	104.7	7.8
BORDEN	230	STOREY 1	230	#1	1	77	793	Amps	EMERGENCY	925	116.6	987	124.4	7.8
STOREY 1	230	WILSON	230	#1	1	16	851	Amps	EMERGENCY	983	115.5	1049	123.2	7.7
STOREY 1	230	WILSON	230	#1	1	57	851	Amps	EMERGENCY	983	115.5	1049	123.2	7.7
STOREY 1	230	WILSON	230	#1	1	58	851	Amps	EMERGENCY	991	116.5	1057	124.2	7.7
STOREY 1	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	1028	129.6	1089	137.3	7.7
BORDEN	230	STOREY 1	230	#1	1	30	793	Amps	EMERGENCY	903	113.8	963	121.5	7.7
STOREY 1	230	BORDEN	230	#1	1	63	793	Amps	EMERGENCY	1032	130.1	1093	137.8	7.7
BORDEN	230	STOREY 1	230	#1	1	62	793	Amps	EMERGENCY	937	118.1	997	125.7	7.7
STOREY 1	230	WILSON	230	#1	1	18	851	Amps	EMERGENCY	840	98.7	905	106.3	7.6
BORDEN	230	STOREY 1	230	#1	1	70	793	Amps	EMERGENCY	923	116.3	983	123.9	7.6

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	7	851	Amps	EMERGENCY	842	99	907	106.6	7.6
STOREY 1	230	WILSON	230	#1	1	6	851	Amps	EMERGENCY	838	98.4	902	106	7.6
STOREY 1	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	960	121.1	1021	128.7	7.6
WARNERVL	230	WRNRVLLE	115	#1	0	9	150	MVA	EMERGENCY	202	134.6	213	142.2	7.6
WARNERVL	230	WRNRVLLE	115	#2	0	9	75	MVA	EMERGENCY	101	134.6	107	142.2	7.6
WARNERVL	230	WRNRVLLE	115	#3	0	9	75	MVA	EMERGENCY	101	134.6	107	142.2	7.6
STOREY 1	230	WILSON	230	#1	1	15	851	Amps	EMERGENCY	829	97.4	893	104.9	7.5
BORDEN	230	STOREY 1	230	#1	1	4	793	Amps	EMERGENCY	885	111.6	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	127	793	Amps	EMERGENCY	899	113.3	958	120.8	7.5
STOREY 1	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	947	119.4	1007	126.9	7.5
BORDEN	230	STOREY 1	230	#1	1	42	793	Amps	EMERGENCY	890	112.2	950	119.7	7.5
STOREY 1	230	BORDEN	230	#1	1	23	793	Amps	EMERGENCY	913	115.1	972	122.6	7.5
STOREY 1	230	BORDEN	230	#1	1	105	793	Amps	EMERGENCY	925	116.6	985	124.1	7.5
BORDEN	230	STOREY 1	230	#1	1	54	793	Amps	EMERGENCY	914	115.2	973	122.7	7.5
BORDEN	230	STOREY 1	230	#1	1	76	793	Amps	EMERGENCY	956	120.5	1015	127.9	7.5
STOREY 1	230	BORDEN	230	#1	1	33	793	Amps	EMERGENCY	892	112.4	951	119.9	7.5
STOREY 1	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	900	113.4	959	120.9	7.5
BORDEN	230	STOREY 1	230	#1	1	129	793	Amps	EMERGENCY	886	111.7	945	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	93	793	Amps	EMERGENCY	886	111.7	945	119.2	7.5
STOREY 1	230	BORDEN	230	#1	1	103	793	Amps	EMERGENCY	906	114.2	966	121.7	7.5
BORDEN	230	STOREY 1	230	#1	1	131	793	Amps	EMERGENCY	887	111.8	946	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	90	793	Amps	EMERGENCY	902	113.7	961	121.2	7.5
STOREY 1	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	886	111.7	946	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	97	793	Amps	EMERGENCY	900	113.4	959	120.9	7.5
STOREY 1	230	BORDEN	230	#1	1	53	793	Amps	EMERGENCY	898	113.2	957	120.7	7.5
STOREY 1	230	BORDEN	230	#1	1	98	793	Amps	EMERGENCY	898	113.2	957	120.7	7.5
BORDEN	230	STOREY 1	230	#1	1	88	793	Amps	EMERGENCY	896	113	955	120.4	7.5
BORDEN	230	STOREY 1	230	#1	1	89	793	Amps	EMERGENCY	895	112.8	954	120.3	7.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
BORDEN	230	STOREY 1	230	#1	1	75	793	Amps	EMERGENCY	903	113.8	962	121.3	7.5
BORDEN	230	STOREY 1	230	#1	1	92	793	Amps	EMERGENCY	899	113.3	958	120.8	7.5
BORDEN	230	STOREY 1	230	#1	1	40	793	Amps	EMERGENCY	900	113.5	959	120.9	7.5
BORDEN	230	STOREY 1	230	#1	1	43	793	Amps	EMERGENCY	886	111.7	945	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	49	793	Amps	EMERGENCY	892	112.5	952	120	7.5
BORDEN	230	STOREY 1	230	#1	1	108	793	Amps	EMERGENCY	892	112.5	952	120	7.5
BORDEN	230	STOREY 1	230	#1	1	114	793	Amps	EMERGENCY	890	112.2	949	119.6	7.5
BORDEN	230	STOREY 1	230	#1	1	130	793	Amps	EMERGENCY	886	111.6	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	41	793	Amps	EMERGENCY	928	117	988	124.5	7.5
BORDEN	230	STOREY 1	230	#1	1	38	793	Amps	EMERGENCY	890	112.2	949	119.6	7.5
BORDEN	230	STOREY 1	230	#1	1	74	793	Amps	EMERGENCY	911	114.9	970	122.3	7.5
BORDEN	230	STOREY 1	230	#1	1	134	793	Amps	EMERGENCY	886	111.7	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	39	793	Amps	EMERGENCY	888	112	947	119.4	7.5
BORDEN	230	STOREY 1	230	#1	1	123	793	Amps	EMERGENCY	890	112.2	949	119.7	7.5
BORDEN	230	STOREY 1	230	#1	1	109	793	Amps	EMERGENCY	885	111.6	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	119	793	Amps	EMERGENCY	889	112	948	119.5	7.5
BORDEN	230	STOREY 1	230	#1	1	126	793	Amps	EMERGENCY	886	111.7	945	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	132	793	Amps	EMERGENCY	886	111.7	945	119.1	7.5
BORDEN	230	STOREY 1	230	#1	1	128	793	Amps	EMERGENCY	885	111.6	944	119	7.5
BORDEN	230	STOREY 1	230	#1	1	112	793	Amps	EMERGENCY	886	111.7	945	119.2	7.5
BORDEN	230	STOREY 1	230	#1	1	115	793	Amps	EMERGENCY	892	112.4	951	119.9	7.5
BORDEN	230	STOREY 1	230	#1	1	95	793	Amps	EMERGENCY	891	112.4	950	119.8	7.5
BORDEN	230	STOREY 1	230	#1	1	124	793	Amps	EMERGENCY	889	112.1	948	119.5	7.5
BORDEN	230	STOREY 1	230	#1	1	118	793	Amps	EMERGENCY	907	114.4	966	121.8	7.5
BORDEN	230	STOREY 1	230	#1	1	35	793	Amps	EMERGENCY	891	112.3	950	119.8	7.4
BORDEN	230	STOREY 1	230	#1	1	122	793	Amps	EMERGENCY	894	112.7	953	120.1	7.4
BORDEN	230	STOREY 1	230	#1	1	113	793	Amps	EMERGENCY	888	111.9	947	119.4	7.4
BORDEN	230	STOREY 1	230	#1	1	104	793	Amps	EMERGENCY	920	116	979	123.5	7.4

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
BORDEN	230	STOREY 1	230	#1	1	117	793	Amps	EMERGENCY	887	111.8	946	119.3	7.4
BORDEN	230	STOREY 1	230	#1	1	116	793	Amps	EMERGENCY	887	111.8	946	119.2	7.4
BORDEN	230	STOREY 1	230	#1	1	110	793	Amps	EMERGENCY	886	111.6	945	119.1	7.4
BORDEN	230	STOREY 1	230	#1	1	106	793	Amps	EMERGENCY	887	111.8	945	119.2	7.4
BORDEN	230	STOREY 1	230	#1	1	73	793	Amps	EMERGENCY	900	113.4	958	120.8	7.4
STOREY 1	230	BORDEN	230	#1	1	99	793	Amps	EMERGENCY	913	115.1	972	122.5	7.4
BORDEN	230	STOREY 1	230	#1	1	100	793	Amps	EMERGENCY	911	114.8	969	122.2	7.4
STOREY 2	230	BORDEN	230	#1	1	17	793	Amps	EMERGENCY	797	100.5	856	107.9	7.3
BORDEN	230	STOREY 1	230	#1	1	101	793	Amps	EMERGENCY	905	114.1	963	121.4	7.3
STOREY 1	230	WILSON	230	#1	1	87	851	Amps	EMERGENCY	825	96.9	887	104.3	7.3
STOREY 1	230	WILSON	230	#1	1	21	851	Amps	EMERGENCY	828	97.3	891	104.7	7.3
STOREY 2	230	BORDEN	230	#1	1	19	793	Amps	EMERGENCY	857	108	915	115.3	7.3
STOREY 1	230	WILSON	230	#1	1	77	851	Amps	EMERGENCY	849	99.8	911	107.1	7.3
BORDEN	230	STOREY 1	230	#1	1	102	793	Amps	EMERGENCY	918	115.8	976	123	7.3
STOREY 2	230	WILSON	230	#1	1	19	793	Amps	EMERGENCY	788	99.4	846	106.6	7.3
STOREY 1	230	WILSON	230	#1	1	71	851	Amps	EMERGENCY	953	112	1014	119.2	7.2
STOREY 1	230	WILSON	230	#1	1	62	851	Amps	EMERGENCY	860	101.1	921	108.3	7.2
STOREY 1	230	WILSON	230	#1	1	63	851	Amps	EMERGENCY	956	112.4	1017	119.6	7.2
STOREY 1	230	WILSON	230	#1	1	30	851	Amps	EMERGENCY	827	97.2	888	104.4	7.2
BORDEN	230	STOREY 1	230	#1	1	85	793	Amps	EMERGENCY	924	116.5	981	123.7	7.2
STOREY 1	230	WILSON	230	#1	1	70	851	Amps	EMERGENCY	846	99.4	907	106.6	7.2
BORDEN	230	STOREY 1	230	#1	1	46	793	Amps	EMERGENCY	897	113	954	120.2	7.2
BORDEN	230	STOREY 1	230	#1	1	45	793	Amps	EMERGENCY	914	115.2	971	122.4	7.2
WARNERVL	230	COTTLE B	230	#1	1	84	793	Amps	EMERGENCY	876	110.5	933	117.6	7.1
STOREY 1	230	WILSON	230	#1	1	72	851	Amps	EMERGENCY	884	103.9	945	111	7.1
STOREY 2	230	BORDEN	230	#1	1	20	793	Amps	EMERGENCY	768	96.9	825	104	7.1
COTTLE B	230	BELLOTA	230	#1	1	84	793	Amps	EMERGENCY	814	102.6	870	109.7	7.1
STOREY 1	230	WILSON	230	#1	1	4	851	Amps	EMERGENCY	809	95.1	869	102.2	7.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	903	113.8	959	120.9	7.1
STOREY 2	230	BORDEN	230	#1	1	57	793	Amps	EMERGENCY	903	113.8	959	120.9	7.1
STOREY 1	230	WILSON	230	#1	1	127	851	Amps	EMERGENCY	823	96.7	883	103.8	7.1
STOREY 1	230	WILSON	230	#1	1	47	851	Amps	EMERGENCY	872	102.4	932	109.5	7.1
STOREY 2	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	910	114.8	966	121.8	7
STOREY 1	230	WILSON	230	#1	1	42	851	Amps	EMERGENCY	814	95.7	874	102.7	7
STOREY 1	230	WILSON	230	#1	1	1	851	Amps	EMERGENCY	810	95.2	870	102.3	7
STOREY 1	230	WILSON	230	#1	1	23	851	Amps	EMERGENCY	837	98.4	897	105.4	7
STOREY 1	230	WILSON	230	#1	1	54	851	Amps	EMERGENCY	838	98.5	898	105.5	7
STOREY 1	230	WILSON	230	#1	1	105	851	Amps	EMERGENCY	849	99.8	909	106.9	7
STOREY 1	230	WILSON	230	#1	1	76	851	Amps	EMERGENCY	880	103.4	939	110.4	7
STOREY 1	230	WILSON	230	#1	1	33	851	Amps	EMERGENCY	816	95.9	876	102.9	7
STOREY 1	230	WILSON	230	#1	1	81	851	Amps	EMERGENCY	824	96.8	884	103.9	7
STOREY 1	230	WILSON	230	#1	1	93	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	129	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	131	851	Amps	EMERGENCY	810	95.2	870	102.3	7
STOREY 1	230	WILSON	230	#1	1	90	851	Amps	EMERGENCY	826	97	886	104.1	7
STOREY 1	230	WILSON	230	#1	1	37	851	Amps	EMERGENCY	810	95.2	870	102.3	7
STOREY 1	230	WILSON	230	#1	1	103	851	Amps	EMERGENCY	830	97.6	890	104.6	7
STOREY 1	230	WILSON	230	#1	1	97	851	Amps	EMERGENCY	824	96.8	883	103.8	7
STOREY 1	230	WILSON	230	#1	1	53	851	Amps	EMERGENCY	822	96.6	882	103.6	7
STOREY 1	230	WILSON	230	#1	1	98	851	Amps	EMERGENCY	822	96.6	882	103.6	7
STOREY 1	230	WILSON	230	#1	1	88	851	Amps	EMERGENCY	820	96.4	880	103.4	7
STOREY 1	230	WILSON	230	#1	1	89	851	Amps	EMERGENCY	819	96.2	878	103.2	7
STOREY 1	230	WILSON	230	#1	1	75	851	Amps	EMERGENCY	827	97.2	887	104.2	7
STOREY 1	230	WILSON	230	#1	1	43	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	49	851	Amps	EMERGENCY	816	95.9	876	102.9	7
STOREY 1	230	WILSON	230	#1	1	108	851	Amps	EMERGENCY	816	95.9	876	102.9	7

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	40	851	Amps	EMERGENCY	824	96.8	884	103.9	7
STOREY 1	230	WILSON	230	#1	1	114	851	Amps	EMERGENCY	814	95.6	873	102.6	7
STOREY 1	230	WILSON	230	#1	1	130	851	Amps	EMERGENCY	810	95.1	869	102.2	7
STOREY 1	230	WILSON	230	#1	1	92	851	Amps	EMERGENCY	823	96.7	882	103.7	7
STOREY 1	230	WILSON	230	#1	1	74	851	Amps	EMERGENCY	835	98.1	895	105.1	7
STOREY 1	230	WILSON	230	#1	1	39	851	Amps	EMERGENCY	812	95.5	872	102.5	7
STOREY 1	230	WILSON	230	#1	1	38	851	Amps	EMERGENCY	814	95.6	874	102.7	7
STOREY 1	230	WILSON	230	#1	1	123	851	Amps	EMERGENCY	814	95.7	874	102.7	7
STOREY 1	230	WILSON	230	#1	1	134	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 2	230	WILSON	230	#1	1	16	793	Amps	EMERGENCY	834	105.2	890	112.2	7
STOREY 2	230	WILSON	230	#1	1	57	793	Amps	EMERGENCY	834	105.2	890	112.2	7
STOREY 1	230	WILSON	230	#1	1	109	851	Amps	EMERGENCY	809	95.1	869	102.1	7
STOREY 1	230	WILSON	230	#1	1	119	851	Amps	EMERGENCY	813	95.5	872	102.5	7
STOREY 1	230	WILSON	230	#1	1	112	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	41	851	Amps	EMERGENCY	853	100.2	913	107.3	7
STOREY 1	230	WILSON	230	#1	1	126	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	128	851	Amps	EMERGENCY	809	95.1	869	102.1	7
STOREY 1	230	WILSON	230	#1	1	132	851	Amps	EMERGENCY	810	95.1	869	102.2	7
STOREY 1	230	WILSON	230	#1	1	95	851	Amps	EMERGENCY	815	95.8	875	102.8	7
STOREY 1	230	WILSON	230	#1	1	115	851	Amps	EMERGENCY	816	95.9	876	102.9	7
STOREY 1	230	WILSON	230	#1	1	124	851	Amps	EMERGENCY	813	95.5	873	102.5	7
STOREY 2	230	WILSON	230	#1	1	58	793	Amps	EMERGENCY	842	106.1	897	113.1	7
STOREY 1	230	WILSON	230	#1	1	118	851	Amps	EMERGENCY	832	97.7	891	104.7	7
STOREY 1	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	1024	129.1	1080	136.1	7
STOREY 1	230	WILSON	230	#1	1	122	851	Amps	EMERGENCY	818	96.1	877	103.1	7
STOREY 1	230	WILSON	230	#1	1	35	851	Amps	EMERGENCY	815	95.8	875	102.8	7
STOREY 1	230	WILSON	230	#1	1	113	851	Amps	EMERGENCY	812	95.4	871	102.4	7
STOREY 1	230	WILSON	230	#1	1	117	851	Amps	EMERGENCY	811	95.3	871	102.3	7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	104	851	Amps	EMERGENCY	845	99.3	904	106.2	7
STOREY 1	230	WILSON	230	#1	1	116	851	Amps	EMERGENCY	811	95.3	870	102.3	7
STOREY 1	230	WILSON	230	#1	1	110	851	Amps	EMERGENCY	810	95.1	869	102.1	7
STOREY 2	230	BORDEN	230	#1	1	18	793	Amps	EMERGENCY	781	98.5	837	105.5	7
STOREY 1	230	WILSON	230	#1	1	106	851	Amps	EMERGENCY	810	95.2	870	102.2	7
STOREY 1	230	WILSON	230	#1	1	73	851	Amps	EMERGENCY	824	96.8	883	103.7	7
STOREY 2	230	BORDEN	230	#1	1	7	793	Amps	EMERGENCY	783	98.7	838	105.7	7
STANDFRD	115	WRNRVLLE	115	#1	1	9	939	Amps	EMERGENCY	1056	112.4	1121	119.4	7
STANDFRD	115	WRNRVLLE	115	#2	1	9	939	Amps	EMERGENCY	1056	112.4	1121	119.4	7
STOREY 2	230	BORDEN	230	#1	1	6	793	Amps	EMERGENCY	779	98.2	834	105.2	6.9
STOREY 1	230	WILSON	230	#1	1	99	851	Amps	EMERGENCY	837	98.4	897	105.4	6.9
STOREY 1	230	WILSON	230	#1	1	100	851	Amps	EMERGENCY	835	98.1	894	105	6.9
BORDEN	230	STOREY 1	230	#1	1	79	793	Amps	EMERGENCY	893	112.6	948	119.5	6.9
STOREY 1	230	WILSON	230	#1	1	101	851	Amps	EMERGENCY	829	97.4	887	104.3	6.9
STOREY 2	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	772	97.3	826	104.2	6.9
STOREY 1	230	WILSON	230	#1	1	102	851	Amps	EMERGENCY	842	99	901	105.8	6.8
STOREY 1	230	WILSON	230	#1	1	85	851	Amps	EMERGENCY	849	99.7	906	106.5	6.7
STOREY 1	230	WILSON	230	#1	1	46	851	Amps	EMERGENCY	821	96.4	878	103.2	6.7
STOREY 1	230	WILSON	230	#1	1	45	851	Amps	EMERGENCY	838	98.5	895	105.2	6.7
STOREY 2	230	BORDEN	230	#1	1	87	793	Amps	EMERGENCY	768	96.9	822	103.6	6.7
STOREY 2	230	BORDEN	230	#1	1	21	793	Amps	EMERGENCY	771	97.2	824	103.9	6.7
STOREY 2	230	BORDEN	230	#1	1	77	793	Amps	EMERGENCY	789	99.5	842	106.2	6.7
STOREY 2	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	877	110.6	929	117.2	6.6
STOREY 2	230	BORDEN	230	#1	1	62	793	Amps	EMERGENCY	799	100.7	851	107.3	6.6
STOREY 2	230	BORDEN	230	#1	1	30	793	Amps	EMERGENCY	770	97.1	822	103.7	6.6
STOREY 2	230	BORDEN	230	#1	1	63	793	Amps	EMERGENCY	880	111	932	117.5	6.6
STOREY 1	230	WILSON	230	#1	1	59	851	Amps	EMERGENCY	948	111.4	1004	118	6.6
STOREY 2	230	WILSON	230	#1	1	71	793	Amps	EMERGENCY	809	101.9	861	108.5	6.6

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Category C outages--2013 Spring Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	70	793	Amps	EMERGENCY	787	99.2	839	105.7	6.5
STOREY 2	230	WILSON	230	#1	1	63	793	Amps	EMERGENCY	812	102.3	864	108.9	6.5
STOREY 2	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	819	103.2	871	109.8	6.5
STOREY 1	230	WILSON	230	#1	1	79	851	Amps	EMERGENCY	817	96	872	102.5	6.5
WARNERVL	230	COTTLE B	230	#1	1	65	793	Amps	EMERGENCY	846	106.6	897	113.1	6.5
STOREY 2	230	WILSON	230	#1	1	72	793	Amps	EMERGENCY	751	94.6	802	101.1	6.5
STOREY 2	230	BORDEN	230	#1	1	4	793	Amps	EMERGENCY	755	95.2	806	101.7	6.5
STOREY 2	230	BORDEN	230	#1	1	127	793	Amps	EMERGENCY	767	96.7	818	103.1	6.5
STOREY 2	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	808	101.9	859	108.3	6.4
STOREY 2	230	BORDEN	230	#1	1	42	793	Amps	EMERGENCY	759	95.7	810	102.2	6.4
COTTLE B	230	BELLOTA	230	#1	1	65	793	Amps	EMERGENCY	784	98.8	835	105.3	6.4
STOREY 2	230	BORDEN	230	#1	1	1	793	Amps	EMERGENCY	756	95.3	807	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	23	793	Amps	EMERGENCY	779	98.2	830	104.6	6.4
STOREY 2	230	BORDEN	230	#1	1	54	793	Amps	EMERGENCY	780	98.3	831	104.7	6.4
STOREY 2	230	BORDEN	230	#1	1	105	793	Amps	EMERGENCY	789	99.5	840	105.9	6.4
STOREY 2	230	BORDEN	230	#1	1	76	793	Amps	EMERGENCY	815	102.7	866	109.2	6.4
STOREY 2	230	BORDEN	230	#1	1	33	793	Amps	EMERGENCY	761	95.9	812	102.3	6.4
STOREY 2	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	768	96.8	819	103.2	6.4
STOREY 2	230	BORDEN	230	#1	1	93	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	129	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	103	793	Amps	EMERGENCY	773	97.5	824	103.9	6.4
STOREY 2	230	BORDEN	230	#1	1	131	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	90	793	Amps	EMERGENCY	769	97	820	103.4	6.4
STOREY 2	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	97	793	Amps	EMERGENCY	767	96.7	818	103.2	6.4
STOREY 2	230	BORDEN	230	#1	1	53	793	Amps	EMERGENCY	766	96.6	817	103	6.4
STOREY 2	230	BORDEN	230	#1	1	98	793	Amps	EMERGENCY	766	96.6	817	103	6.4
STOREY 2	230	BORDEN	230	#1	1	88	793	Amps	EMERGENCY	764	96.4	815	102.8	6.4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	89	793	Amps	EMERGENCY	763	96.2	814	102.6	6.4
STOREY 2	230	BORDEN	230	#1	1	75	793	Amps	EMERGENCY	770	97.1	821	103.5	6.4
STOREY 2	230	BORDEN	230	#1	1	43	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	40	793	Amps	EMERGENCY	768	96.8	819	103.2	6.4
STOREY 2	230	BORDEN	230	#1	1	49	793	Amps	EMERGENCY	761	95.9	812	102.4	6.4
STOREY 2	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	761	95.9	812	102.4	6.4
STOREY 2	230	BORDEN	230	#1	1	92	793	Amps	EMERGENCY	767	96.6	817	103.1	6.4
STOREY 2	230	BORDEN	230	#1	1	74	793	Amps	EMERGENCY	777	98	828	104.4	6.4
STOREY 2	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	759	95.7	810	102.1	6.4
STOREY 2	230	BORDEN	230	#1	1	130	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	123	793	Amps	EMERGENCY	759	95.7	810	102.1	6.4
STOREY 2	230	BORDEN	230	#1	1	38	793	Amps	EMERGENCY	759	95.7	810	102.1	6.4
STOREY 2	230	BORDEN	230	#1	1	39	793	Amps	EMERGENCY	758	95.5	809	101.9	6.4
STOREY 2	230	BORDEN	230	#1	1	119	793	Amps	EMERGENCY	758	95.5	809	102	6.4
STOREY 2	230	BORDEN	230	#1	1	134	793	Amps	EMERGENCY	756	95.3	806	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	109	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	112	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	132	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	126	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	128	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	41	793	Amps	EMERGENCY	792	99.9	843	106.3	6.4
STOREY 2	230	BORDEN	230	#1	1	95	793	Amps	EMERGENCY	760	95.8	811	102.2	6.4
STOREY 2	230	BORDEN	230	#1	1	115	793	Amps	EMERGENCY	761	95.9	812	102.3	6.4
STOREY 2	230	BORDEN	230	#1	1	124	793	Amps	EMERGENCY	758	95.6	809	102	6.4
STOREY 2	230	BORDEN	230	#1	1	118	793	Amps	EMERGENCY	774	97.6	825	104	6.4
STOREY 2	230	BORDEN	230	#1	1	122	793	Amps	EMERGENCY	763	96.1	813	102.5	6.4
STOREY 2	230	BORDEN	230	#1	1	113	793	Amps	EMERGENCY	757	95.5	808	101.9	6.4
STOREY 2	230	BORDEN	230	#1	1	35	793	Amps	EMERGENCY	760	95.9	811	102.3	6.4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	117	793	Amps	EMERGENCY	757	95.4	807	101.8	6.4
STOREY 2	230	BORDEN	230	#1	1	104	793	Amps	EMERGENCY	785	99	836	105.4	6.4
STOREY 2	230	WILSON	230	#1	1	76	793	Amps	EMERGENCY	747	94.1	797	100.5	6.4
STOREY 2	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	756	95.4	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	755	95.2	806	101.6	6.4
STOREY 2	230	BORDEN	230	#1	1	106	793	Amps	EMERGENCY	756	95.3	807	101.7	6.4
STOREY 2	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	767	96.7	818	103.1	6.4
STOREY 2	230	BORDEN	230	#1	1	99	793	Amps	EMERGENCY	779	98.2	829	104.6	6.3
STOREY 2	230	BORDEN	230	#1	1	100	793	Amps	EMERGENCY	777	97.9	827	104.3	6.3
STOREY 2	230	BORDEN	230	#1	1	101	793	Amps	EMERGENCY	772	97.3	822	103.6	6.3
K1-JCT	115	OAKH_JCT	115	#1	1	13	743	Amps	EMERGENCY	814	109.5	860	115.8	6.3
STOREY 2	230	BORDEN	230	#1	1	102	793	Amps	EMERGENCY	783	98.7	833	105	6.3
KERCKHF2	115	K1-JCT	115	#2	1	13	743	Amps	EMERGENCY	814	109.5	860	115.8	6.3
MC CALL	230	HELM	230	#1	1	91	850	Amps	EMERGENCY	820	96.5	872	102.6	6.2
STOREY 2	230	BORDEN	230	#1	1	85	793	Amps	EMERGENCY	789	99.4	837	105.6	6.2
STOREY 2	230	BORDEN	230	#1	1	46	793	Amps	EMERGENCY	765	96.4	814	102.6	6.2
STOREY 2	230	BORDEN	230	#1	1	45	793	Amps	EMERGENCY	780	98.3	828	104.4	6.2
STOREY 2	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	874	110.2	921	116.2	6
STOREY 2	230	WILSON	230	#1	1	59	793	Amps	EMERGENCY	805	101.5	852	107.4	6
STOREY 2	230	BORDEN	230	#1	1	79	793	Amps	EMERGENCY	762	96	809	102	5.9
STOREY 1	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	968	122.1	1012	127.6	5.5
STOREY 1	230	WILSON	230	#1	1	84	851	Amps	EMERGENCY	892	104.9	936	110	5.1
KEARNEY	230	BULRD_EC	230	#1	1	13	976	Amps	EMERGENCY	1347	138	1394	142.8	4.8
BORDEN	230	STOREY 1	230	#1	1	56	793	Amps	EMERGENCY	912	115	950	119.8	4.8
STOREY 2	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	826	104.1	863	108.8	4.7
STOREY 2	230	WILSON	230	#1	1	84	793	Amps	EMERGENCY	758	95.5	795	100.2	4.7
STOREY 1	230	BORDEN	230	#1	1	65	793	Amps	EMERGENCY	971	122.4	1007	126.9	4.5
KEARNEY	230	MCMULLN1	230	#1	1	13	975	Amps	EMERGENCY	1087	111.5	1131	116	4.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST-LOADING	PST_ PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	56	851	Amps	EMERGENCY	837	98.3	875	102.8	4.5
MCMULLN1	230	PANOCHE	230	#1	1	13	975	Amps	EMERGENCY	1046	107.2	1089	111.7	4.5
STOREY 1	230	WILSON	230	#1	1	65	851	Amps	EMERGENCY	896	105.3	932	109.5	4.3
STOREY 2	230	BORDEN	230	#1	1	56	793	Amps	EMERGENCY	778	98.1	811	102.2	4.1
STOREY 2	230	BORDEN	230	#1	1	65	793	Amps	EMERGENCY	828	104.4	859	108.3	3.9
OAKH_JCT	115	SHARON T	115	#1	1	59	397	Amps	EMERGENCY	460	115.9	474	119.4	3.5
CHWCHLLA	115	CERTANJ1	115	#1	1	59	397	Amps	EMERGENCY	434	109.5	448	113	3.5
SHARON T	115	CERTANJ1	115	#1	1	59	397	Amps	EMERGENCY	435	109.8	449	113.2	3.4
SAN JOQN	70	SNJQJCT	70	#1	1	58	396	Amps	EMERGENCY	437	110.4	447	112.9	2.5
AGRCJCT	70	KERMAN	70	#1	1	63	379	Amps	EMERGENCY	375	98.8	381	100.4	1.5
CAMDEN	70	KNGLOBUS	70	#1	1	71	398	Amps	EMERGENCY	404	101.4	409	102.8	1.4
CERTAN T	115	LE GRAND	115	#1	1	48	397	Amps	EMERGENCY	400	100.9	405	102.2	1.2
DOS PALS	70	ORO LOMA	70	#1	1	35	282	Amps	EMERGENCY	427	151.4	430	152.5	1.1
SHARON T	115	CERTANJ1	115	#1	1	48	397	Amps	EMERGENCY	470	118.5	474	119.6	1.1
CERTANJ1	115	CHWCHLLA	115	#1	1	48	397	Amps	EMERGENCY	469	118.3	474	119.4	1.1
OAKH_JCT	115	SHARON T	115	#1	1	48	397	Amps	EMERGENCY	497	125.2	501	126.3	1.1
CRESEY T	115	ATWATR J	115	#1	1	1	512	Amps	EMERGENCY	747	145.9	753	147	1.1
MC CALL	230	HELM	230	#1	1	85	850	Amps	EMERGENCY	903	106.2	911	107.2	1
GREGG	230	FGRDN T2	230	#1	1	61	850	Amps	EMERGENCY	1137	133.8	1125	132.3	-1.4
FGRDN T2	230	ASHLAN	230	#1	1	61	850	Amps	EMERGENCY	1033	121.5	1021	120.1	-1.5
KINGS J2	115	KINGS J1	115	#1	1	59	600	Amps	EMERGENCY	722	120.4	706	117.6	-2.8
KINGS J2	115	KINGS J1	115	#1	1	107	600	Amps	EMERGENCY	661	110.1	639	106.5	-3.6
MC CALL	230	HENTAP2	230	#1	1	58	975	Amps	EMERGENCY	1003	102.8	957	98.2	-4.7
CAMDEN	70	CMDN JCT	70	#1	1	51	297	Amps	EMERGENCY	357	120.3	341	115	-5.4
CMDN JCT	70	CARUTHRS	70	#1	1	51	297	Amps	EMERGENCY	357	120.3	341	115	-5.4
CARUTHRS	70	KEARNEY	70	#1	1	51	297	Amps	EMERGENCY	499	167.9	482	162.5	-5.4

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category A--Normal System (no Contingencies)--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT (%)	PST_ LOADING	PST_ PCT (%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	675	Amps	NORMAL	867	128.4	896	132.6	4.24
COTTLE B	230	BELLOTA	230	#1	1	675	Amps	NORMAL	832	123.2	860	127.4	4.24
LOSBANOS	230	WESTLEY	230	#1	1	1484	Amps	NORMAL	1872	126.1	1900	128	1.93
MC CALL	115	SANGER	115	#3	1	823	Amps	NORMAL	825	100.2	836	101.6	1.37
TEMPLETN	230	GATES	230	#1	1	825	Amps	NORMAL	847	102.6	783	94.9	-7.75
MORROBAY	230	GATES	230	#1	1	825	Amps	NORMAL	910	110.2	845	102.4	-7.8

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	286	793	Amps	EMERGENCY	907	114.4	978	123.3	8.9
COTTLE B	230	BELLOTA	230	#1	1	286	793	Amps	EMERGENCY	872	109.9	943	118.8	8.9
PANOCHE	230	DS AMIGO	230	#1	1	136	850	Amps	EMERGENCY	800	94.2	866	101.8	7.7
PANOCHE	230	DS AMIGO	230	#1	1	137	850	Amps	EMERGENCY	787	92.6	851	100.1	7.5
WILSON	230	WARNERVL	230	#1	1	147	793	Amps	EMERGENCY	828	104.3	876	110.5	6.2
WILSON	230	WARNERVL	230	#1	1	133	793	Amps	EMERGENCY	867	109.3	909	114.6	5.4
BORDEN	230	STOREY 1	230	#1	1	145	793	Amps	EMERGENCY	899	113.4	942	118.7	5.3
BORDEN	230	STOREY 2	230	#1	1	146	793	Amps	EMERGENCY	838	105.6	878	110.7	5
STOREY 2	230	WILSON	230	#1	1	146	793	Amps	EMERGENCY	801	101	840	106	5
STOREY 1	230	WILSON	230	#1	1	145	851	Amps	EMERGENCY	854	100.4	897	105.4	5
WILSON	230	WARNERVL	230	#1	1	400	793	Amps	EMERGENCY	850	107.1	889	112.1	5
WILSON	230	WARNERVL	230	#1	1	401	793	Amps	EMERGENCY	850	107.1	889	112.1	5
WARNERVL	230	COTTLE B	230	#1	1	185	793	Amps	EMERGENCY	946	119.3	983	123.9	4.6
COTTLE B	230	BELLOTA	230	#1	1	185	793	Amps	EMERGENCY	911	114.8	947	119.4	4.6
WARNERVL	230	COTTLE B	230	#1	1	61	793	Amps	EMERGENCY	965	121.6	1001	126.2	4.6
WARNERVL	230	COTTLE B	230	#1	1	166	793	Amps	EMERGENCY	941	118.6	977	123.2	4.6
COTTLE B	230	BELLOTA	230	#1	1	166	793	Amps	EMERGENCY	905	114.1	942	118.7	4.6
COTTLE B	230	BELLOTA	230	#1	1	61	793	Amps	EMERGENCY	929	117.1	966	121.7	4.6
WARNERVL	230	COTTLE B	230	#1	1	131	793	Amps	EMERGENCY	1001	126.2	1038	130.8	4.6
COTTLE B	230	BELLOTA	230	#1	1	131	793	Amps	EMERGENCY	966	121.8	1002	126.4	4.6
WARNERVL	230	COTTLE B	230	#1	1	147	793	Amps	EMERGENCY	1117	140.9	1154	145.4	4.6
COTTLE B	230	BELLOTA	230	#1	1	147	793	Amps	EMERGENCY	1082	136.4	1118	141	4.6
LOSBANOS	230	WESTLEY	230	#1	1	286	1700	Amps	EMERGENCY	1919	112.9	1994	117.3	4.4

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	188	793	Amps	EMERGENCY	868	109.4	900	113.5	4.1
COTTLE B	230	BELLOTA	230	#1	1	188	793	Amps	EMERGENCY	832	105	865	109	4.1
WARNERVL	230	COTTLE B	230	#1	1	189	793	Amps	EMERGENCY	892	112.4	923	116.4	4
WARNERVL	230	COTTLE B	230	#1	1	12	793	Amps	EMERGENCY	886	111.7	918	115.7	4
COTTLE B	230	BELLOTA	230	#1	1	189	793	Amps	EMERGENCY	856	108	888	111.9	4
COTTLE B	230	BELLOTA	230	#1	1	12	793	Amps	EMERGENCY	851	107.2	882	111.2	4
WARNERVL	230	COTTLE B	230	#1	1	415	793	Amps	EMERGENCY	981	123.6	1012	127.6	3.9
COTTLE B	230	BELLOTA	230	#1	1	415	793	Amps	EMERGENCY	945	119.2	976	123.1	3.9
WARNERVL	230	COTTLE B	230	#1	1	414	793	Amps	EMERGENCY	984	124	1014	127.9	3.9
COTTLE B	230	BELLOTA	230	#1	1	414	793	Amps	EMERGENCY	948	119.5	979	123.4	3.9
WARNERVL	230	COTTLE B	230	#1	1	172	793	Amps	EMERGENCY	880	111	911	114.9	3.9
COTTLE B	230	BELLOTA	230	#1	1	172	793	Amps	EMERGENCY	845	106.5	876	110.4	3.9
WARNERVL	230	COTTLE B	230	#1	1	3	793	Amps	EMERGENCY	895	112.8	926	116.7	3.9
WARNERVL	230	COTTLE B	230	#1	1	153	793	Amps	EMERGENCY	876	110.4	907	114.3	3.9
COTTLE B	230	BELLOTA	230	#1	1	3	793	Amps	EMERGENCY	860	108.4	890	112.2	3.9
COTTLE B	230	BELLOTA	230	#1	1	153	793	Amps	EMERGENCY	841	106	871	109.8	3.9
WARNERVL	230	COTTLE B	230	#1	1	134	793	Amps	EMERGENCY	1018	128.3	1048	132.1	3.8
COTTLE B	230	BELLOTA	230	#1	1	134	793	Amps	EMERGENCY	982	123.8	1013	127.7	3.8
WARNERVL	230	COTTLE B	230	#1	1	390	793	Amps	EMERGENCY	919	115.8	949	119.6	3.8
WARNERVL	230	COTTLE B	230	#1	1	428	793	Amps	EMERGENCY	924	116.6	955	120.3	3.8
COTTLE B	230	BELLOTA	230	#1	1	390	793	Amps	EMERGENCY	883	111.4	913	115.2	3.8
WARNERVL	230	COTTLE B	230	#1	1	197	793	Amps	EMERGENCY	935	117.9	965	121.6	3.8
WARNERVL	230	COTTLE B	230	#1	1	373	793	Amps	EMERGENCY	915	115.4	945	119.1	3.8
WARNERVL	230	COTTLE B	230	#1	1	407	793	Amps	EMERGENCY	935	117.9	965	121.6	3.8
COTTLE B	230	BELLOTA	230	#1	1	197	793	Amps	EMERGENCY	899	113.4	929	117.2	3.8
COTTLE B	230	BELLOTA	230	#1	1	373	793	Amps	EMERGENCY	879	110.9	910	114.7	3.8
COTTLE B	230	BELLOTA	230	#1	1	407	793	Amps	EMERGENCY	899	113.4	929	117.2	3.8
COTTLE B	230	BELLOTA	230	#1	1	428	793	Amps	EMERGENCY	889	112.1	919	115.9	3.8
WARNERVL	230	COTTLE B	230	#1	1	179	793	Amps	EMERGENCY	970	122.3	1000	126.1	3.8
COTTLE B	230	BELLOTA	230	#1	1	179	793	Amps	EMERGENCY	935	117.8	965	121.6	3.8
WARNERVL	230	COTTLE B	230	#1	1	11	793	Amps	EMERGENCY	986	124.3	1016	128.1	3.8
WARNERVL	230	COTTLE B	230	#1	1	141	793	Amps	EMERGENCY	986	124.3	1016	128.1	3.8
WARNERVL	230	COTTLE B	230	#1	1	416	793	Amps	EMERGENCY	976	123	1006	126.8	3.8
WARNERVL	230	COTTLE B	230	#1	1	389	793	Amps	EMERGENCY	984	124	1014	127.8	3.8
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	878	110.7	908	114.5	3.8
WARNERVL	230	COTTLE B	230	#1	1	160	793	Amps	EMERGENCY	966	121.8	996	125.6	3.8
WARNERVL	230	COTTLE B	230	#1	1	196	793	Amps	EMERGENCY	1000	126	1030	129.8	3.8
WARNERVL	230	COTTLE B	230	#1	1	406	793	Amps	EMERGENCY	1000	126	1030	129.8	3.8
WARNERVL	230	COTTLE B	230	#1	1	427	793	Amps	EMERGENCY	989	124.7	1019	128.5	3.8
COTTLE B	230	BELLOTA	230	#1	1	11	793	Amps	EMERGENCY	951	119.8	981	123.6	3.8
COTTLE B	230	BELLOTA	230	#1	1	141	793	Amps	EMERGENCY	951	119.8	981	123.6	3.8

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	416	793	Amps	EMERGENCY	940	118.6	970	122.3	3.8
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	843	106.3	873	110.1	3.8
COTTLE B	230	BELLOTA	230	#1	1	160	793	Amps	EMERGENCY	931	117.4	961	121.1	3.8
COTTLE B	230	BELLOTA	230	#1	1	389	793	Amps	EMERGENCY	948	119.5	978	123.3	3.8
WARNERVL	230	COTTLE B	230	#1	1	372	793	Amps	EMERGENCY	980	123.5	1010	127.3	3.8
COTTLE B	230	BELLOTA	230	#1	1	427	793	Amps	EMERGENCY	954	120.2	984	124	3.8
COTTLE B	230	BELLOTA	230	#1	1	196	793	Amps	EMERGENCY	964	121.5	994	125.3	3.8
COTTLE B	230	BELLOTA	230	#1	1	372	793	Amps	EMERGENCY	944	119	974	122.8	3.8
COTTLE B	230	BELLOTA	230	#1	1	406	793	Amps	EMERGENCY	964	121.5	994	125.3	3.8
WARNERVL	230	COTTLE B	230	#1	1	5	793	Amps	EMERGENCY	881	111.1	911	114.9	3.8
WARNERVL	230	COTTLE B	230	#1	1	399	793	Amps	EMERGENCY	1014	127.8	1044	131.6	3.8
COTTLE B	230	BELLOTA	230	#1	1	5	793	Amps	EMERGENCY	846	106.6	876	110.4	3.8
COTTLE B	230	BELLOTA	230	#1	1	399	793	Amps	EMERGENCY	978	123.3	1008	127.1	3.8
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	882	111.2	912	115	3.8
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	880	110.9	910	114.7	3.8
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	847	106.8	877	110.5	3.8
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	845	106.5	874	110.2	3.8
WARNERVL	230	COTTLE B	230	#1	1	136	793	Amps	EMERGENCY	1002	126.4	1032	130.1	3.8
COTTLE B	230	BELLOTA	230	#1	1	136	793	Amps	EMERGENCY	967	121.9	997	125.6	3.8
WARNERVL	230	COTTLE B	230	#1	1	138	793	Amps	EMERGENCY	997	125.7	1027	129.5	3.8
COTTLE B	230	BELLOTA	230	#1	1	138	793	Amps	EMERGENCY	962	121.2	991	125	3.8
WARNERVL	230	COTTLE B	230	#1	1	150	793	Amps	EMERGENCY	1003	126.5	1033	130.2	3.7
COTTLE B	230	BELLOTA	230	#1	1	150	793	Amps	EMERGENCY	968	122	998	125.8	3.7
WARNERVL	230	COTTLE B	230	#1	1	137	793	Amps	EMERGENCY	1001	126.2	1031	129.9	3.7
COTTLE B	230	BELLOTA	230	#1	1	137	793	Amps	EMERGENCY	965	121.7	995	125.5	3.7
WARNERVL	230	COTTLE B	230	#1	1	382	793	Amps	EMERGENCY	879	110.8	909	114.6	3.7
COTTLE B	230	BELLOTA	230	#1	1	382	793	Amps	EMERGENCY	844	106.4	873	110.1	3.7
WARNERVL	230	COTTLE B	230	#1	1	180	793	Amps	EMERGENCY	873	110.1	903	113.8	3.7
COTTLE B	230	BELLOTA	230	#1	1	180	793	Amps	EMERGENCY	838	105.6	867	109.4	3.7
WARNERVL	230	COTTLE B	230	#1	1	365	793	Amps	EMERGENCY	875	110.3	905	114	3.7
WARNERVL	230	COTTLE B	230	#1	1	420	793	Amps	EMERGENCY	886	111.7	915	115.4	3.7
WARNERVL	230	COTTLE B	230	#1	1	413	793	Amps	EMERGENCY	974	122.8	1004	126.6	3.7
COTTLE B	230	BELLOTA	230	#1	1	365	793	Amps	EMERGENCY	840	105.9	869	109.6	3.7
COTTLE B	230	BELLOTA	230	#1	1	420	793	Amps	EMERGENCY	850	107.2	880	110.9	3.7
COTTLE B	230	BELLOTA	230	#1	1	161	793	Amps	EMERGENCY	834	105.1	863	108.8	3.7
COTTLE B	230	BELLOTA	230	#1	1	413	793	Amps	EMERGENCY	939	118.4	968	122.1	3.7
WARNERVL	230	COTTLE B	230	#1	1	417	793	Amps	EMERGENCY	880	110.9	909	114.6	3.7
WARNERVL	230	COTTLE B	230	#1	1	161	793	Amps	EMERGENCY	869	109.6	899	113.3	3.7
COTTLE B	230	BELLOTA	230	#1	1	417	793	Amps	EMERGENCY	845	106.5	874	110.2	3.7
WARNERVL	230	COTTLE B	230	#1	1	4	793	Amps	EMERGENCY	872	110	902	113.7	3.7
COTTLE B	230	BELLOTA	230	#1	1	4	793	Amps	EMERGENCY	837	105.5	866	109.2	3.7

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	171	793	Amps	EMERGENCY	879	110.9	909	114.6	3.7
COTTLE B	230	BELLOTA	230	#1	1	171	793	Amps	EMERGENCY	844	106.4	873	110.1	3.7
WARNERVL	230	COTTLE B	230	#1	1	2	793	Amps	EMERGENCY	894	112.7	923	116.4	3.7
WARNERVL	230	COTTLE B	230	#1	1	152	793	Amps	EMERGENCY	875	110.3	904	114	3.7
COTTLE B	230	BELLOTA	230	#1	1	152	793	Amps	EMERGENCY	840	105.8	869	109.5	3.7
COTTLE B	230	BELLOTA	230	#1	1	2	793	Amps	EMERGENCY	858	108.2	888	111.9	3.7
WARNERVL	230	COTTLE B	230	#1	1	412	793	Amps	EMERGENCY	977	123.1	1006	126.8	3.7
COTTLE B	230	BELLOTA	230	#1	1	412	793	Amps	EMERGENCY	941	118.7	970	122.3	3.7
WARNERVL	230	COTTLE B	230	#1	1	135	793	Amps	EMERGENCY	993	125.2	1022	128.9	3.7
COTTLE B	230	BELLOTA	230	#1	1	135	793	Amps	EMERGENCY	957	120.7	987	124.4	3.7
WARNERVL	230	COTTLE B	230	#1	1	142	793	Amps	EMERGENCY	1008	127	1037	130.7	3.7
COTTLE B	230	BELLOTA	230	#1	1	142	793	Amps	EMERGENCY	972	122.5	1001	126.2	3.7
WARNERVL	230	COTTLE B	230	#1	1	44	793	Amps	EMERGENCY	871	109.8	900	113.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	125	793	Amps	EMERGENCY	871	109.8	899	113.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	44	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	125	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	101	793	Amps	EMERGENCY	871	109.8	900	113.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	101	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	133	793	Amps	EMERGENCY	1016	128.1	1045	131.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	133	793	Amps	EMERGENCY	981	123.6	1009	127.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	48	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	48	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	832	104.9	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
WARNERVL	230	COTTLE B	230	#1	1	65	793	Amps	EMERGENCY	867	109.3	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	65	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	24	793	Amps	EMERGENCY	874	110.2	903	113.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	26	793	Amps	EMERGENCY	875	110.3	903	113.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	410	793	Amps	EMERGENCY	943	118.9	972	122.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	24	793	Amps	EMERGENCY	838	105.7	867	109.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	211	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	288	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	297	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	45	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	50	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	51	793	Amps	EMERGENCY	867	109.3	896	112.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	870	109.7	898	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	230	793	Amps	EMERGENCY	867	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	268	793	Amps	EMERGENCY	867	109.4	896	113	3.6

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	288	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	410	793	Amps	EMERGENCY	907	114.4	936	118	3.6
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	228	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	242	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	243	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	245	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	250	793	Amps	EMERGENCY	870	109.7	898	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	255	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	261	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	26	793	Amps	EMERGENCY	839	105.8	868	109.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	73	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	226	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	266	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	45	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	73	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	230	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	257	793	Amps	EMERGENCY	835	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	297	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	871	109.9	900	113.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	224	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	231	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	240	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	249	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	256	793	Amps	EMERGENCY	877	110.6	906	114.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	257	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	258	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	263	793	Amps	EMERGENCY	869	109.5	898	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	269	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	273	793	Amps	EMERGENCY	867	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	289	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	361	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	211	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	228	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	252	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	270	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	295	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	50	793	Amps	EMERGENCY	833	105	862	108.6	3.6

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Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	243	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	255	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	295	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	36	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	209	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	264	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	290	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	51	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	226	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	231	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	240	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	242	793	Amps	EMERGENCY	832	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	245	793	Amps	EMERGENCY	833	105	862	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	249	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	261	793	Amps	EMERGENCY	832	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	266	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	268	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	289	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	361	793	Amps	EMERGENCY	833	105	862	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	262	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	292	793	Amps	EMERGENCY	882	111.2	911	114.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	250	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	224	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	252	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	256	793	Amps	EMERGENCY	842	106.1	870	109.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	263	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	269	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	270	793	Amps	EMERGENCY	833	105	862	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	292	793	Amps	EMERGENCY	847	106.8	876	110.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	869	109.6	898	113.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	836	105.4	865	109	3.6
COTTLE B	230	BELLOTA	230	#1	1	258	793	Amps	EMERGENCY	834	105.1	863	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	262	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	290	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	36	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	834	105.1	862	108.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	209	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	264	793	Amps	EMERGENCY	835	105.3	863	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	273	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	265	793	Amps	EMERGENCY	873	110	901	113.6	3.6

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Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	275	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	362	793	Amps	EMERGENCY	873	110	901	113.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	265	793	Amps	EMERGENCY	837	105.6	866	109.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	362	793	Amps	EMERGENCY	837	105.6	866	109.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	275	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	409	793	Amps	EMERGENCY	965	121.7	994	125.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	277	793	Amps	EMERGENCY	867	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	277	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	409	793	Amps	EMERGENCY	930	117.2	958	120.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	67	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	68	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	68	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	67	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	103	793	Amps	EMERGENCY	872	109.9	900	113.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	103	793	Amps	EMERGENCY	837	105.5	865	109.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	311	793	Amps	EMERGENCY	986	124.4	1015	128	3.6
WARNERVL	230	COTTLE B	230	#1	1	312	793	Amps	EMERGENCY	986	124.4	1015	128	3.6
WARNERVL	230	COTTLE B	230	#1	1	402	793	Amps	EMERGENCY	986	124.3	1015	127.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	403	793	Amps	EMERGENCY	986	124.3	1015	127.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	139	793	Amps	EMERGENCY	951	119.9	979	123.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	140	793	Amps	EMERGENCY	951	119.9	979	123.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	285	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	383	793	Amps	EMERGENCY	972	122.5	1000	126.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	384	793	Amps	EMERGENCY	972	122.5	1000	126.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	408	793	Amps	EMERGENCY	986	124.3	1015	127.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	139	793	Amps	EMERGENCY	986	124.4	1015	128	3.6
WARNERVL	230	COTTLE B	230	#1	1	140	793	Amps	EMERGENCY	986	124.4	1015	128	3.6
COTTLE B	230	BELLOTA	230	#1	1	311	793	Amps	EMERGENCY	951	119.9	979	123.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	312	793	Amps	EMERGENCY	951	119.9	979	123.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	404	793	Amps	EMERGENCY	987	124.4	1015	128	3.6
COTTLE B	230	BELLOTA	230	#1	1	402	793	Amps	EMERGENCY	951	119.8	979	123.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	403	793	Amps	EMERGENCY	951	119.8	979	123.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	408	793	Amps	EMERGENCY	951	119.8	979	123.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	241	793	Amps	EMERGENCY	873	110	901	113.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	383	793	Amps	EMERGENCY	936	118	965	121.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	384	793	Amps	EMERGENCY	936	118	965	121.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	190	793	Amps	EMERGENCY	986	124.3	1014	127.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	191	793	Amps	EMERGENCY	986	124.3	1014	127.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	366	793	Amps	EMERGENCY	967	122	996	125.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	367	793	Amps	EMERGENCY	967	122	996	125.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	421	793	Amps	EMERGENCY	978	123.3	1007	126.9	3.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	422	793	Amps	EMERGENCY	978	123.3	1007	126.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	285	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	404	793	Amps	EMERGENCY	951	119.9	979	123.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	421	793	Amps	EMERGENCY	943	118.8	971	122.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	422	793	Amps	EMERGENCY	943	118.8	971	122.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	241	793	Amps	EMERGENCY	837	105.6	866	109.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	190	793	Amps	EMERGENCY	951	119.8	979	123.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	191	793	Amps	EMERGENCY	951	119.8	979	123.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	366	793	Amps	EMERGENCY	932	117.5	960	121.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	367	793	Amps	EMERGENCY	932	117.5	960	121.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	25	793	Amps	EMERGENCY	869	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	208	793	Amps	EMERGENCY	869	109.5	897	113.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	25	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	208	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	20	793	Amps	EMERGENCY	872	109.9	900	113.4	3.5
WARNERVL	230	COTTLE B	230	#1	1	19	793	Amps	EMERGENCY	872	109.9	900	113.5	3.5
WARNERVL	230	COTTLE B	230	#1	1	400	793	Amps	EMERGENCY	1105	139.3	1133	142.9	3.5
WARNERVL	230	COTTLE B	230	#1	1	401	793	Amps	EMERGENCY	1105	139.3	1133	142.9	3.5
COTTLE B	230	BELLOTA	230	#1	1	20	793	Amps	EMERGENCY	836	105.4	864	109	3.5
COTTLE B	230	BELLOTA	230	#1	1	19	793	Amps	EMERGENCY	837	105.5	865	109	3.5
COTTLE B	230	BELLOTA	230	#1	1	400	793	Amps	EMERGENCY	1069	134.8	1097	138.4	3.5
COTTLE B	230	BELLOTA	230	#1	1	401	793	Amps	EMERGENCY	1069	134.8	1097	138.4	3.5
WARNERVL	230	COTTLE B	230	#1	1	149	793	Amps	EMERGENCY	988	124.6	1016	128.1	3.5
COTTLE B	230	BELLOTA	230	#1	1	149	793	Amps	EMERGENCY	953	120.1	981	123.7	3.5
WARNERVL	230	COTTLE B	230	#1	1	148	793	Amps	EMERGENCY	989	124.6	1016	128.1	3.5
COTTLE B	230	BELLOTA	230	#1	1	148	793	Amps	EMERGENCY	953	120.1	981	123.7	3.5
WARNERVL	230	COTTLE B	230	#1	1	143	793	Amps	EMERGENCY	980	123.6	1008	127	3.4
WARNERVL	230	COTTLE B	230	#1	1	144	793	Amps	EMERGENCY	980	123.6	1008	127	3.4
COTTLE B	230	BELLOTA	230	#1	1	143	793	Amps	EMERGENCY	945	119.1	972	122.6	3.4
COTTLE B	230	BELLOTA	230	#1	1	144	793	Amps	EMERGENCY	945	119.1	972	122.6	3.4
WARNERVL	230	COTTLE B	230	#1	1	203	793	Amps	EMERGENCY	879	110.8	906	114.2	3.3
COTTLE B	230	BELLOTA	230	#1	1	432	793	Amps	EMERGENCY	835	105.3	862	108.7	3.3
WARNERVL	230	COTTLE B	230	#1	1	432	793	Amps	EMERGENCY	871	109.8	897	113.1	3.3
COTTLE B	230	BELLOTA	230	#1	1	203	793	Amps	EMERGENCY	844	106.4	870	109.7	3.3
WARNERVL	230	COTTLE B	230	#1	1	411	793	Amps	EMERGENCY	1003	126.4	1029	129.7	3.3
COTTLE B	230	BELLOTA	230	#1	1	411	793	Amps	EMERGENCY	967	121.9	993	125.2	3.3
WARNERVL	230	COTTLE B	230	#1	1	145	793	Amps	EMERGENCY	932	117.5	957	120.6	3.2
COTTLE B	230	BELLOTA	230	#1	1	145	793	Amps	EMERGENCY	896	113	921	116.2	3.2
WARNERVL	230	COTTLE B	230	#1	1	146	793	Amps	EMERGENCY	915	115.3	939	118.4	3.1
COTTLE B	230	BELLOTA	230	#1	1	146	793	Amps	EMERGENCY	879	110.8	903	113.9	3.1
COTTLE B	230	BELLOTA	230	#1	1	388	793	Amps	EMERGENCY	886	111.6	907	114.3	2.7

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Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	388	793	Amps	EMERGENCY	921	116.1	942	118.8	2.7
WARNERVL	230	COTTLE B	230	#1	1	195	793	Amps	EMERGENCY	937	118.2	958	120.8	2.7
WARNERVL	230	COTTLE B	230	#1	1	405	793	Amps	EMERGENCY	937	118.2	958	120.8	2.7
COTTLE B	230	BELLOTA	230	#1	1	195	793	Amps	EMERGENCY	902	113.7	923	116.3	2.7
COTTLE B	230	BELLOTA	230	#1	1	405	793	Amps	EMERGENCY	902	113.7	923	116.3	2.7
WARNERVL	230	COTTLE B	230	#1	1	371	793	Amps	EMERGENCY	917	115.6	938	118.3	2.7
COTTLE B	230	BELLOTA	230	#1	1	426	793	Amps	EMERGENCY	891	112.3	912	115	2.7
COTTLE B	230	BELLOTA	230	#1	1	371	793	Amps	EMERGENCY	882	111.1	903	113.8	2.7
WARNERVL	230	COTTLE B	230	#1	1	426	793	Amps	EMERGENCY	926	116.8	948	119.5	2.7
LOSBANOS	230	WESTLEY	230	#1	1	126	1700	Amps	EMERGENCY	1968	115.8	2005	118	2.2
LOSBANOS	230	WESTLEY	230	#1	1	170	1700	Amps	EMERGENCY	1961	115.4	1998	117.6	2.2
LOSBANOS	230	WESTLEY	230	#1	1	151	1700	Amps	EMERGENCY	1964	115.5	2001	117.7	2.2
LOSBANOS	230	WESTLEY	230	#1	1	1	1700	Amps	EMERGENCY	1980	116.5	2017	118.7	2.2
LOSBANOS	230	WESTLEY	230	#1	1	132	1700	Amps	EMERGENCY	2118	124.6	2154	126.7	2.1
LOSBANOS	230	WESTLEY	230	#1	1	172	1700	Amps	EMERGENCY	1946	114.5	1981	116.5	2.1
LOSBANOS	230	WESTLEY	230	#1	1	153	1700	Amps	EMERGENCY	1950	114.7	1984	116.7	2
LOSBANOS	230	WESTLEY	230	#1	1	3	1700	Amps	EMERGENCY	1962	115.4	1996	117.4	2
LOSBANOS	230	WESTLEY	230	#1	1	134	1700	Amps	EMERGENCY	2070	121.8	2104	123.8	2
MC CALL	115	SANGER	115	#3	1	189	974	Amps	EMERGENCY	992	101.8	1011	103.8	1.9
LOSBANOS	230	WESTLEY	230	#1	1	415	1700	Amps	EMERGENCY	1964	115.5	1995	117.4	1.9
LOSBANOS	230	WESTLEY	230	#1	1	173	1700	Amps	EMERGENCY	1873	110.2	1904	112	1.8
LOSBANOS	230	WESTLEY	230	#1	1	154	1700	Amps	EMERGENCY	1877	110.4	1908	112.3	1.8
LOSBANOS	230	WESTLEY	230	#1	1	4	1700	Amps	EMERGENCY	1888	111.1	1919	112.9	1.8
LOSBANOS	230	WESTLEY	230	#1	1	135	1700	Amps	EMERGENCY	1990	117.1	2021	118.9	1.8
LOSBANOS	230	WESTLEY	230	#1	1	414	1700	Amps	EMERGENCY	1967	115.7	1998	117.5	1.8
LOSBANOS	230	WESTLEY	230	#1	1	16	1700	Amps	EMERGENCY	1908	112.2	1939	114.1	1.8
LOSBANOS	230	WESTLEY	230	#1	1	184	1700	Amps	EMERGENCY	1893	111.4	1924	113.2	1.8
LOSBANOS	230	WESTLEY	230	#1	1	128	1700	Amps	EMERGENCY	1904	112	1935	113.8	1.8
LOSBANOS	230	WESTLEY	230	#1	1	165	1700	Amps	EMERGENCY	1898	111.7	1929	113.5	1.8
LOSBANOS	230	WESTLEY	230	#1	1	185	1700	Amps	EMERGENCY	1880	110.6	1911	112.4	1.8
LOSBANOS	230	WESTLEY	230	#1	1	131	1700	Amps	EMERGENCY	1900	111.8	1931	113.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	166	1700	Amps	EMERGENCY	1883	110.8	1914	112.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	61	1700	Amps	EMERGENCY	1895	111.5	1926	113.3	1.8
MC CALL	115	SANGER	115	#3	1	382	974	Amps	EMERGENCY	1016	104.3	1033	106.1	1.8
MC CALL	115	SANGER	115	#3	1	365	974	Amps	EMERGENCY	1000	102.7	1017	104.5	1.8
MC CALL	115	SANGER	115	#3	1	420	974	Amps	EMERGENCY	1001	102.8	1019	104.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	183	1700	Amps	EMERGENCY	1885	110.9	1915	112.7	1.8
LOSBANOS	230	WESTLEY	230	#1	1	127	1700	Amps	EMERGENCY	1896	111.5	1926	113.3	1.8
LOSBANOS	230	WESTLEY	230	#1	1	164	1700	Amps	EMERGENCY	1890	111.2	1920	113	1.8
LOSBANOS	230	WESTLEY	230	#1	1	146	1700	Amps	EMERGENCY	2018	118.7	2048	120.5	1.8
LOSBANOS	230	WESTLEY	230	#1	1	15	1700	Amps	EMERGENCY	1900	111.8	1930	113.6	1.8

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	147	1700	Amps	EMERGENCY	2002	117.8	2032	119.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	145	1700	Amps	EMERGENCY	2007	118.1	2037	119.8	1.8
LOSBANOS	230	WESTLEY	230	#1	1	413	1700	Amps	EMERGENCY	1953	114.9	1983	116.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	412	1700	Amps	EMERGENCY	1958	115.2	1987	116.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	388	1700	Amps	EMERGENCY	1963	115.5	1992	117.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	28	1700	Amps	EMERGENCY	1888	111	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	426	1700	Amps	EMERGENCY	1972	116	2001	117.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	371	1700	Amps	EMERGENCY	1967	115.7	1996	117.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	195	1700	Amps	EMERGENCY	1977	116.3	2006	118	1.7
LOSBANOS	230	WESTLEY	230	#1	1	405	1700	Amps	EMERGENCY	1977	116.3	2006	118	1.7
LOSBANOS	230	WESTLEY	230	#1	1	410	1700	Amps	EMERGENCY	1897	111.6	1926	113.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	148	1700	Amps	EMERGENCY	1969	115.8	1998	117.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	399	1700	Amps	EMERGENCY	1910	112.3	1939	114	1.7
LOSBANOS	230	WESTLEY	230	#1	1	149	1700	Amps	EMERGENCY	1969	115.8	1998	117.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	22	1700	Amps	EMERGENCY	1872	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	107	1700	Amps	EMERGENCY	1874	110.3	1903	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	37	1700	Amps	EMERGENCY	1876	110.4	1905	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	111	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	25	1700	Amps	EMERGENCY	1884	110.9	1913	112.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	208	1700	Amps	EMERGENCY	1884	110.9	1913	112.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	38	1700	Amps	EMERGENCY	1878	110.5	1907	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	29	1700	Amps	EMERGENCY	1881	110.7	1910	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	75	1700	Amps	EMERGENCY	1886	110.9	1914	112.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	41	1700	Amps	EMERGENCY	1883	110.8	1912	112.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	235	1700	Amps	EMERGENCY	1876	110.4	1905	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	247	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	280	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	281	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	42	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	251	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	215	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	254	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	297	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	218	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	229	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	361	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	47	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	69	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	219	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
MC CALL	115	SANGER	115	#3	1	180	974	Amps	EMERGENCY	964	99	981	100.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	73	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	74	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	223	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	284	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	363	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	50	1700	Amps	EMERGENCY	1881	110.7	1910	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	51	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	58	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	59	1700	Amps	EMERGENCY	1873	110.2	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	192	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	193	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	228	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	231	1700	Amps	EMERGENCY	1874	110.2	1903	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	237	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	243	1700	Amps	EMERGENCY	1873	110.2	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	255	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	268	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	283	1700	Amps	EMERGENCY	1874	110.2	1903	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	409	1700	Amps	EMERGENCY	1935	113.8	1963	115.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	53	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	211	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	288	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	216	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	217	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	233	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	242	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	250	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	257	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	224	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	226	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	230	1700	Amps	EMERGENCY	1872	110.2	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	261	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	266	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	282	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	295	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	357	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	240	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	249	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	26	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	54	1700	Amps	EMERGENCY	1876	110.4	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	212	1700	Amps	EMERGENCY	1881	110.7	1910	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	245	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	258	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	263	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	264	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	24	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	213	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	252	1700	Amps	EMERGENCY	1878	110.5	1907	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	262	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	269	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	273	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	275	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	289	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	270	1700	Amps	EMERGENCY	1876	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	290	1700	Amps	EMERGENCY	1877	110.4	1905	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	112	1700	Amps	EMERGENCY	1879	110.5	1908	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	256	1700	Amps	EMERGENCY	1882	110.7	1911	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	45	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	265	1700	Amps	EMERGENCY	1881	110.7	1910	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	292	1700	Amps	EMERGENCY	1888	111	1916	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	362	1700	Amps	EMERGENCY	1881	110.7	1910	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	214	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	30	1700	Amps	EMERGENCY	1889	111.1	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	36	1700	Amps	EMERGENCY	1874	110.3	1903	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	209	1700	Amps	EMERGENCY	1874	110.3	1903	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	285	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	40	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	383	1700	Amps	EMERGENCY	1956	115	1984	116.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	384	1700	Amps	EMERGENCY	1956	115	1984	116.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	421	1700	Amps	EMERGENCY	1964	115.6	1993	117.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	422	1700	Amps	EMERGENCY	1964	115.6	1993	117.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	72	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	71	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	366	1700	Amps	EMERGENCY	1959	115.3	1988	116.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	367	1700	Amps	EMERGENCY	1959	115.3	1988	116.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	139	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	140	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	277	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	311	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	404	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	408	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	241	1700	Amps	EMERGENCY	1880	110.6	1908	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	312	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7

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Category B outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	190	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	191	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	402	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	403	1700	Amps	EMERGENCY	1970	115.9	1999	117.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	48	1700	Amps	EMERGENCY	1880	110.6	1909	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	70	1700	Amps	EMERGENCY	1878	110.5	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	44	1700	Amps	EMERGENCY	1874	110.3	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	125	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	203	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	411	1700	Amps	EMERGENCY	1975	116.2	2002	117.8	1.6
LOSBANOS	230	WESTLEY	230	#1	1	400	1700	Amps	EMERGENCY	2072	121.9	2100	123.5	1.6
LOSBANOS	230	WESTLEY	230	#1	1	401	1700	Amps	EMERGENCY	2072	121.9	2100	123.5	1.6
LOSBANOS	230	WESTLEY	230	#1	1	389	1700	Amps	EMERGENCY	1945	114.4	1972	116	1.6
LOSBANOS	230	WESTLEY	230	#1	1	427	1700	Amps	EMERGENCY	1954	115	1981	116.5	1.6
LOSBANOS	230	WESTLEY	230	#1	1	416	1700	Amps	EMERGENCY	1973	116.1	2000	117.7	1.6
LOSBANOS	230	WESTLEY	230	#1	1	179	1700	Amps	EMERGENCY	1964	115.6	1991	117.2	1.6
LOSBANOS	230	WESTLEY	230	#1	1	390	1700	Amps	EMERGENCY	2005	118	2032	119.6	1.6
LOSBANOS	230	WESTLEY	230	#1	1	372	1700	Amps	EMERGENCY	1948	114.6	1975	116.2	1.6
LOSBANOS	230	WESTLEY	230	#1	1	428	1700	Amps	EMERGENCY	2014	118.5	2041	120.1	1.6
LOSBANOS	230	WESTLEY	230	#1	1	196	1700	Amps	EMERGENCY	1958	115.2	1985	116.8	1.6
LOSBANOS	230	WESTLEY	230	#1	1	406	1700	Amps	EMERGENCY	1958	115.2	1985	116.8	1.6
LOSBANOS	230	WESTLEY	230	#1	1	160	1700	Amps	EMERGENCY	1968	115.7	1995	117.3	1.6
LOSBANOS	230	WESTLEY	230	#1	1	11	1700	Amps	EMERGENCY	1977	116.3	2004	117.9	1.6
LOSBANOS	230	WESTLEY	230	#1	1	141	1700	Amps	EMERGENCY	1977	116.3	2004	117.9	1.6
LOSBANOS	230	WESTLEY	230	#1	1	373	1700	Amps	EMERGENCY	2009	118.2	2035	119.7	1.6
LOSBANOS	230	WESTLEY	230	#1	1	197	1700	Amps	EMERGENCY	2018	118.7	2045	120.3	1.6
LOSBANOS	230	WESTLEY	230	#1	1	407	1700	Amps	EMERGENCY	2018	118.7	2045	120.3	1.6
LOSBANOS	230	WESTLEY	230	#1	1	142	1700	Amps	EMERGENCY	1923	113.1	1950	114.7	1.6
SANGER	115	MC CALL	115	#3	1	216	974	Amps	EMERGENCY	1077	110.6	1092	112.1	1.5
SANGER	115	MC CALL	115	#3	1	217	974	Amps	EMERGENCY	1077	110.6	1092	112.1	1.5
SANGER	115	AIRWAYJ2	115	#1	1	212	1125	Amps	EMERGENCY	1125	100.1	1140	101.4	1.3
LOSBANOS	230	WESTLEY	230	#1	1	138	1700	Amps	EMERGENCY	1908	112.2	1929	113.5	1.2
LOSBANOS	230	WESTLEY	230	#1	1	143	1700	Amps	EMERGENCY	1929	113.5	1950	114.7	1.2
LOSBANOS	230	WESTLEY	230	#1	1	144	1700	Amps	EMERGENCY	1929	113.5	1950	114.7	1.2
TORNADO	70	COLNGA 2	70	#1	1	357	378	Amps	EMERGENCY	384	101.7	376	99.5	-2.2
TORNADO	70	COLNGA 2	70	#1	1	273	378	Amps	EMERGENCY	382	101	373	98.8	-2.2
TEMPLETN	230	GATES	230	#1	1	434	975	Amps	EMERGENCY	1209	124	1122	115	-9
TEMPLETN	230	GATES	230	#1	1	205	975	Amps	EMERGENCY	1207	123.8	1120	114.8	-9
TEMPLETN	230	GATES	230	#1	1	379	975	Amps	EMERGENCY	1209	124	1121	115	-9
TEMPLETN	230	GATES	230	#1	1	396	975	Amps	EMERGENCY	1210	124.1	1122	115.1	-9
MORROBAY	230	GATES	230	#1	1	433	975	Amps	EMERGENCY	1241	127.3	1153	118.3	-9

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_ PCT (%)
MORROBAY	230	GATES	230	#1	1	378	975	Amps	EMERGENCY	1241	127.3	1153	118.3	-9
MORROBAY	230	GATES	230	#1	1	204	975	Amps	EMERGENCY	1239	127.1	1152	118.1	-9
MORROBAY	230	GATES	230	#1	1	395	975	Amps	EMERGENCY	1242	127.3	1154	118.3	-9
TEMPLETN	230	GATES	230	#1	1	413	975	Amps	EMERGENCY	1191	122.2	1103	113.2	-9
MORROBAY	230	GATES	230	#1	1	412	975	Amps	EMERGENCY	1224	125.5	1136	116.5	-9

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PRE_ PCT(%)	DELTA_PCT (%)
GATES	230	PANOCHE	230	#1	1	20	850	Amps	EMERGENCY	794	93.4	892	105	11.6
PANOCHE	230	LOSBANOS	230	#2	1	18	850	Amps	EMERGENCY	810	95.3	898	105.6	10.3
PANOCHE	230	LOSBANOS	230	#1	1	7	975	Amps	EMERGENCY	931	95.5	1022	104.8	9.3
DS AMIGO	230	LOSBANOS	230	#1	1	19	850	Amps	EMERGENCY	773	91	851	100.1	9.1
PANOCHE	230	DS AMIGO	230	#1	1	19	850	Amps	EMERGENCY	987	116.1	1064	125.2	9.1
LE GRAND	115	WILSON A	115	#1	1	13	512	Amps	EMERGENCY	679	132.5	708	138.3	5.8
OAKH_JCT	115	SHARON T	115	#1	1	13	397	Amps	EMERGENCY	391	98.6	414	104.3	5.7
WILSON	230	WARNERVL	230	#1	1	58	793	Amps	EMERGENCY	756	95.3	800	100.9	5.6
WILSON	230	WARNERVL	230	#1	1	60	793	Amps	EMERGENCY	850	107.2	890	112.2	5
WILSON	230	WARNERVL	230	#1	1	69	793	Amps	EMERGENCY	850	107.2	890	112.2	5
WARNERVL	230	COTTLE B	230	#1	1	11	793	Amps	EMERGENCY	998	125.8	1035	130.4	4.7
COTTLE B	230	BELLOTA	230	#1	1	11	793	Amps	EMERGENCY	962	121.3	999	126	4.7
WARNERVL	230	COTTLE B	230	#1	1	19	793	Amps	EMERGENCY	872	109.9	905	114.1	4.2
COTTLE B	230	BELLOTA	230	#1	1	19	793	Amps	EMERGENCY	836	105.4	870	109.6	4.2
WARNERVL	230	COTTLE B	230	#1	1	18	793	Amps	EMERGENCY	901	113.6	933	117.6	4.1
COTTLE B	230	BELLOTA	230	#1	1	18	793	Amps	EMERGENCY	865	109.1	898	113.2	4.1
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	908	114.4	940	118.5	4.1
WARNERVL	230	COTTLE B	230	#1	1	16	793	Amps	EMERGENCY	1021	128.7	1053	132.8	4.1
WARNERVL	230	COTTLE B	230	#1	1	57	793	Amps	EMERGENCY	1021	128.7	1053	132.8	4.1
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	899	113.4	931	117.4	4.1
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	872	110	904	114	4.1
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	864	108.9	896	113	4.1
COTTLE B	230	BELLOTA	230	#1	1	16	793	Amps	EMERGENCY	986	124.3	1018	128.3	4.1
COTTLE B	230	BELLOTA	230	#1	1	57	793	Amps	EMERGENCY	986	124.3	1018	128.3	4.1
WARNERVL	230	COTTLE B	230	#1	1	15	793	Amps	EMERGENCY	905	114.1	937	118.1	4
COTTLE B	230	BELLOTA	230	#1	1	15	793	Amps	EMERGENCY	870	109.6	902	113.7	4
WARNERVL	230	COTTLE B	230	#1	1	77	793	Amps	EMERGENCY	891	112.4	923	116.4	4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT(%)	PST_LOADING	PRE_PCT(%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	77	793	Amps	EMERGENCY	856	107.9	888	111.9	4
WARNERVL	230	COTTLE B	230	#1	1	58	793	Amps	EMERGENCY	1033	130.3	1065	134.2	4
COTTLE B	230	BELLOTA	230	#1	1	58	793	Amps	EMERGENCY	998	125.8	1029	129.7	4
WRNRVLLE	115	WARNERVL	230	#1	0	9	150	MVA	EMERGENCY	161	107.7	167	111.5	3.9
COTTLE B	230	BELLOTA	230	#1	1	17	793	Amps	EMERGENCY	859	108.3	890	112.2	3.9
WARNERVL	230	COTTLE B	230	#1	1	17	793	Amps	EMERGENCY	894	112.8	925	116.7	3.9
WRNRVLLE	115	WARNERVL	230	#2	0	9	75	MVA	EMERGENCY	81	107.7	84	111.6	3.9
WRNRVLLE	115	WARNERVL	230	#3	0	9	75	MVA	EMERGENCY	81	107.7	84	111.6	3.9
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	935	117.8	965	121.6	3.8
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	899	113.4	929	117.1	3.8
WARNERVL	230	COTTLE B	230	#1	1	63	793	Amps	EMERGENCY	999	126	1029	129.8	3.8
COTTLE B	230	BELLOTA	230	#1	1	63	793	Amps	EMERGENCY	964	121.5	994	125.3	3.8
WARNERVL	230	COTTLE B	230	#1	1	32	793	Amps	EMERGENCY	875	110.4	905	114	3.7
COTTLE B	230	BELLOTA	230	#1	1	32	793	Amps	EMERGENCY	840	105.9	869	109.6	3.7
WARNERVL	230	COTTLE B	230	#1	1	85	793	Amps	EMERGENCY	873	110.1	902	113.7	3.7
COTTLE B	230	BELLOTA	230	#1	1	85	793	Amps	EMERGENCY	838	105.6	867	109.3	3.7
HELM	230	PANOCHE	230	#1	1	91	850	Amps	EMERGENCY	1024	120.5	1055	124.1	3.6
MC CALL	230	HELM	230	#1	1	91	850	Amps	EMERGENCY	1166	137.2	1197	140.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	34	793	Amps	EMERGENCY	872	110	901	113.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	34	793	Amps	EMERGENCY	837	105.5	866	109.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	36	793	Amps	EMERGENCY	869	109.5	897	113.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	36	793	Amps	EMERGENCY	833	105	862	108.7	3.6
WARNERVL	230	COTTLE B	230	#1	1	27	793	Amps	EMERGENCY	886	111.7	915	115.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	22	793	Amps	EMERGENCY	882	111.2	911	114.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	22	793	Amps	EMERGENCY	847	106.7	875	110.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	27	793	Amps	EMERGENCY	851	107.3	879	110.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	86	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	134	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	128	793	Amps	EMERGENCY	867	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	38	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	109	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	126	793	Amps	EMERGENCY	868	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	132	793	Amps	EMERGENCY	868	109.4	897	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	134	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	124	793	Amps	EMERGENCY	835	105.2	863	108.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	28	793	Amps	EMERGENCY	878	110.7	907	114.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	39	793	Amps	EMERGENCY	870	109.6	898	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	103	793	Amps	EMERGENCY	879	110.8	907	114.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	112	793	Amps	EMERGENCY	868	109.4	897	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	114	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	115	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PRE_ PCT(%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	123	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	124	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	38	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	39	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	86	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	119	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	135	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	109	793	Amps	EMERGENCY	832	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	112	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	114	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	126	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	128	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	132	793	Amps	EMERGENCY	833	105	861	108.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	874	110.2	903	113.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	75	793	Amps	EMERGENCY	876	110.5	905	114.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	88	793	Amps	EMERGENCY	874	110.2	902	113.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	118	793	Amps	EMERGENCY	882	111.2	911	114.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	28	793	Amps	EMERGENCY	843	106.3	872	109.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	839	105.8	868	109.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	75	793	Amps	EMERGENCY	841	106	869	109.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	118	793	Amps	EMERGENCY	847	106.8	876	110.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	119	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	123	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	872	109.9	900	113.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	89	793	Amps	EMERGENCY	874	110.2	902	113.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	107	793	Amps	EMERGENCY	871	109.8	899	113.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	108	793	Amps	EMERGENCY	872	109.9	900	113.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	125	793	Amps	EMERGENCY	872	109.9	900	113.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	88	793	Amps	EMERGENCY	838	105.7	867	109.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	115	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	135	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	89	793	Amps	EMERGENCY	838	105.7	867	109.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	125	793	Amps	EMERGENCY	836	105.4	865	109	3.6
WARNERVL	230	COTTLE B	230	#1	1	105	793	Amps	EMERGENCY	889	112.1	917	115.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	836	105.5	865	109.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	103	793	Amps	EMERGENCY	843	106.3	872	109.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	107	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	108	793	Amps	EMERGENCY	836	105.5	865	109.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	41	793	Amps	EMERGENCY	887	111.8	915	115.4	3.6
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	875	110.3	904	113.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	95	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PRE_ PCT(%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	98	793	Amps	EMERGENCY	875	110.3	904	113.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	97	793	Amps	EMERGENCY	876	110.5	905	114.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	127	793	Amps	EMERGENCY	877	110.6	906	114.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	840	105.9	868	109.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	98	793	Amps	EMERGENCY	840	105.9	868	109.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	105	793	Amps	EMERGENCY	853	107.6	882	111.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	880	110.9	908	114.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	97	793	Amps	EMERGENCY	841	106	869	109.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	47	793	Amps	EMERGENCY	901	113.5	929	117.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	90	793	Amps	EMERGENCY	879	110.8	908	114.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	47	793	Amps	EMERGENCY	865	109.1	894	112.7	3.6
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	844	106.5	873	110.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	92	793	Amps	EMERGENCY	875	110.3	904	113.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	41	793	Amps	EMERGENCY	851	107.3	880	110.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	90	793	Amps	EMERGENCY	844	106.4	872	110	3.6
COTTLE B	230	BELLOTA	230	#1	1	95	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
COTTLE B	230	BELLOTA	230	#1	1	127	793	Amps	EMERGENCY	842	106.1	870	109.7	3.6
WARNERVL	230	COTTLE B	230	#1	1	122	793	Amps	EMERGENCY	870	109.7	899	113.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	92	793	Amps	EMERGENCY	840	105.8	868	109.4	3.6
COTTLE B	230	BELLOTA	230	#1	1	122	793	Amps	EMERGENCY	835	105.3	864	108.9	3.6
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	885	111.6	914	115.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	850	107.1	878	110.7	3.6
WARNERVL	230	COTTLE B	230	#1	1	76	793	Amps	EMERGENCY	902	113.7	930	117.3	3.6
COTTLE B	230	BELLOTA	230	#1	1	76	793	Amps	EMERGENCY	866	109.2	895	112.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	4	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	4	793	Amps	EMERGENCY	834	105.2	863	108.8	3.6
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	868	109.4	896	113	3.6
WARNERVL	230	COTTLE B	230	#1	1	67	793	Amps	EMERGENCY	924	116.4	952	120	3.6
COTTLE B	230	BELLOTA	230	#1	1	67	793	Amps	EMERGENCY	888	112	917	115.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	51	793	Amps	EMERGENCY	872	110	901	113.6	3.6
WARNERVL	230	COTTLE B	230	#1	1	104	793	Amps	EMERGENCY	882	111.2	910	114.8	3.6
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
COTTLE B	230	BELLOTA	230	#1	1	51	793	Amps	EMERGENCY	837	105.5	865	109.1	3.6
COTTLE B	230	BELLOTA	230	#1	1	104	793	Amps	EMERGENCY	847	106.7	875	110.3	3.6
WARNERVL	230	COTTLE B	230	#1	1	106	793	Amps	EMERGENCY	869	109.5	897	113.1	3.6
WARNERVL	230	COTTLE B	230	#1	1	110	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	106	793	Amps	EMERGENCY	833	105	862	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	110	793	Amps	EMERGENCY	832	104.9	861	108.5	3.6
WARNERVL	230	COTTLE B	230	#1	1	81	793	Amps	EMERGENCY	878	110.6	906	114.2	3.6
WARNERVL	230	COTTLE B	230	#1	1	100	793	Amps	EMERGENCY	870	109.6	898	113.2	3.6
COTTLE B	230	BELLOTA	230	#1	1	81	793	Amps	EMERGENCY	842	106.2	871	109.8	3.6

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Category C outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT(%)	PST_LOADING	PRE_PCT(%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	100	793	Amps	EMERGENCY	834	105.2	863	108.7	3.6
WARNERVL	230	COTTLE B	230	#1	1	99	793	Amps	EMERGENCY	868	109.4	896	113	3.6
COTTLE B	230	BELLOTA	230	#1	1	99	793	Amps	EMERGENCY	833	105	861	108.6	3.6
COTTLE B	230	BELLOTA	230	#1	1	60	793	Amps	EMERGENCY	1070	134.8	1098	138.4	3.5
COTTLE B	230	BELLOTA	230	#1	1	69	793	Amps	EMERGENCY	1070	134.8	1098	138.4	3.5
WARNERVL	230	COTTLE B	230	#1	1	60	793	Amps	EMERGENCY	1105	139.4	1133	142.9	3.5
WARNERVL	230	COTTLE B	230	#1	1	69	793	Amps	EMERGENCY	1105	139.4	1133	142.9	3.5
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	937	118.2	964	121.6	3.4
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	902	113.7	929	117.1	3.4
MC CALL	230	HELM	230	#1	1	44	850	Amps	EMERGENCY	846	99.6	874	102.8	3.2
WARNERVL	230	COTTLE B	230	#1	1	66	793	Amps	EMERGENCY	937	118.2	959	120.8	2.7
COTTLE B	230	BELLOTA	230	#1	1	66	793	Amps	EMERGENCY	902	113.7	923	116.4	2.7
LOSBANOS	230	WESTLEY	230	#1	1	12	1700	Amps	EMERGENCY	2078	122.2	2123	124.9	2.7
LOSBANOS	230	WESTLEY	230	#1	1	10	1700	Amps	EMERGENCY	2145	126.2	2189	128.8	2.6
WARNERVL	230	COTTLE B	230	#1	1	65	793	Amps	EMERGENCY	935	117.9	955	120.5	2.6
COTTLE B	230	BELLOTA	230	#1	1	65	793	Amps	EMERGENCY	900	113.4	920	116	2.6
COTTLE B	230	BELLOTA	230	#1	1	56	793	Amps	EMERGENCY	879	110.8	899	113.3	2.6
WARNERVL	230	COTTLE B	230	#1	1	56	793	Amps	EMERGENCY	914	115.3	935	117.8	2.6
LOSBANOS	230	WESTLEY	230	#1	1	13	1700	Amps	EMERGENCY	2016	118.6	2056	121	2.4
LOSBANOS	230	WESTLEY	230	#1	1	15	1700	Amps	EMERGENCY	1994	117.3	2032	119.6	2.3
LOSBANOS	230	WESTLEY	230	#1	1	35	1700	Amps	EMERGENCY	1890	111.2	1928	113.5	2.2
SANGER	115	MC CALL	115	#3	1	52	974	Amps	EMERGENCY	1550	159.2	1571	161.3	2.2
REEDLEY	70	TVY VLLY	70	#1	1	91	298	Amps	EMERGENCY	376	126.4	383	128.5	2.1
TVY VLLY	70	COPPRMNE	70	#1	1	91	298	Amps	EMERGENCY	344	115.5	350	117.6	2.1
MC CALL	230	MCCALL2M	115	#2	0	80	465	MVA	EMERGENCY	551	118.5	561	120.6	2.1
MCCALL2M	115	MC CALL	115	#2	0	80	465	MVA	EMERGENCY	546	117.4	555	119.4	2
WARNERVL	230	COTTLE B	230	#1	1	14	793	Amps	EMERGENCY	1005	126.8	1021	128.7	2
WARNERVL	230	COTTLE B	230	#1	1	55	793	Amps	EMERGENCY	946	119.3	961	121.2	2
COTTLE B	230	BELLOTA	230	#1	1	55	793	Amps	EMERGENCY	910	114.8	926	116.7	1.9
COTTLE B	230	BELLOTA	230	#1	1	14	793	Amps	EMERGENCY	970	122.3	985	124.2	1.9
MC CALL	115	SANGER	115	#3	1	77	974	Amps	EMERGENCY	992	101.9	1011	103.8	1.9
MC CALL	115	SANGER	115	#3	1	20	974	Amps	EMERGENCY	961	98.7	980	100.6	1.9
LOSBANOS	230	WESTLEY	230	#1	1	9	1700	Amps	EMERGENCY	1987	116.9	2019	118.8	1.9
LOSBANOS	230	WESTLEY	230	#1	1	64	1700	Amps	EMERGENCY	2051	120.6	2083	122.5	1.9
CLOVISJ1	115	WWARD JT	115	#1	1	46	743	Amps	EMERGENCY	766	103.1	780	104.9	1.9
LOSBANOS	230	WESTLEY	230	#1	1	84	1700	Amps	EMERGENCY	1877	110.4	1909	112.3	1.9
CLOVISJ1	115	WWARD JT	115	#1	1	44	743	Amps	EMERGENCY	851	114.6	865	116.4	1.9
LOSBANOS	230	WESTLEY	230	#1	1	11	1700	Amps	EMERGENCY	1900	111.8	1931	113.6	1.8
LOSBANOS	230	WESTLEY	230	#1	1	65	1700	Amps	EMERGENCY	1980	116.5	2009	118.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	56	1700	Amps	EMERGENCY	2002	117.7	2031	119.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	25	1700	Amps	EMERGENCY	1889	111.1	1918	112.9	1.7

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PRE_ PCT(%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	24	1700	Amps	EMERGENCY	1887	111	1916	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	66	1700	Amps	EMERGENCY	1977	116.3	2006	118	1.7
LOSBANOS	230	WESTLEY	230	#1	1	21	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	48	1700	Amps	EMERGENCY	1900	111.8	1929	113.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	45	1700	Amps	EMERGENCY	1886	110.9	1914	112.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	102	1700	Amps	EMERGENCY	1878	110.5	1907	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	29	1700	Amps	EMERGENCY	1887	111	1916	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	73	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	37	1700	Amps	EMERGENCY	1872	110.2	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	101	1700	Amps	EMERGENCY	1876	110.4	1905	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	117	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	86	1700	Amps	EMERGENCY	1872	110.1	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	26	1700	Amps	EMERGENCY	1881	110.6	1909	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	28	1700	Amps	EMERGENCY	1878	110.5	1907	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	39	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	109	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	124	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	38	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	126	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	128	1700	Amps	EMERGENCY	1873	110.2	1901	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	132	1700	Amps	EMERGENCY	1874	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	134	1700	Amps	EMERGENCY	1875	110.3	1903	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	112	1700	Amps	EMERGENCY	1873	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	114	1700	Amps	EMERGENCY	1875	110.3	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	94	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	115	1700	Amps	EMERGENCY	1880	110.6	1909	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	40	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	46	1700	Amps	EMERGENCY	1891	111.3	1920	113	1.7
LOSBANOS	230	WESTLEY	230	#1	1	52	1700	Amps	EMERGENCY	1877	110.4	1905	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	119	1700	Amps	EMERGENCY	1878	110.5	1907	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	22	1700	Amps	EMERGENCY	1878	110.5	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	44	1700	Amps	EMERGENCY	1902	111.9	1931	113.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	75	1700	Amps	EMERGENCY	1879	110.5	1908	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	122	1700	Amps	EMERGENCY	1881	110.7	1910	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	123	1700	Amps	EMERGENCY	1876	110.4	1905	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	135	1700	Amps	EMERGENCY	1877	110.4	1905	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	127	1700	Amps	EMERGENCY	1888	111	1916	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	27	1700	Amps	EMERGENCY	1879	110.6	1908	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	88	1700	Amps	EMERGENCY	1880	110.6	1908	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	89	1700	Amps	EMERGENCY	1879	110.6	1908	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	103	1700	Amps	EMERGENCY	1882	110.7	1911	112.4	1.7

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT(%)	PST_LOADING	PRE_PCT(%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	107	1700	Amps	EMERGENCY	1877	110.4	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	125	1700	Amps	EMERGENCY	1879	110.6	1908	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	74	1700	Amps	EMERGENCY	1883	110.7	1911	112.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	41	1700	Amps	EMERGENCY	1889	111.1	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	49	1700	Amps	EMERGENCY	1879	110.5	1908	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	95	1700	Amps	EMERGENCY	1881	110.7	1910	112.3	1.7
LOSBANOS	230	WESTLEY	230	#1	1	108	1700	Amps	EMERGENCY	1879	110.5	1908	112.2	1.7
LOSBANOS	230	WESTLEY	230	#1	1	118	1700	Amps	EMERGENCY	1888	111	1916	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	100	1700	Amps	EMERGENCY	1890	111.2	1919	112.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	67	1700	Amps	EMERGENCY	1919	112.9	1948	114.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	61	1700	Amps	EMERGENCY	1888	111.1	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	3	1700	Amps	EMERGENCY	1889	111.1	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	53	1700	Amps	EMERGENCY	1884	110.8	1913	112.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	92	1700	Amps	EMERGENCY	1886	111	1915	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	97	1700	Amps	EMERGENCY	1885	110.9	1914	112.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	98	1700	Amps	EMERGENCY	1884	110.8	1913	112.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	105	1700	Amps	EMERGENCY	1891	111.3	1920	112.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	90	1700	Amps	EMERGENCY	1886	111	1915	112.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	76	1700	Amps	EMERGENCY	1901	111.8	1929	113.5	1.7
LOSBANOS	230	WESTLEY	230	#1	1	99	1700	Amps	EMERGENCY	1892	111.3	1921	113	1.7
LOSBANOS	230	WESTLEY	230	#1	1	81	1700	Amps	EMERGENCY	1888	111.1	1917	112.7	1.7
LOSBANOS	230	WESTLEY	230	#1	1	47	1700	Amps	EMERGENCY	1902	111.9	1930	113.6	1.7
LOSBANOS	230	WESTLEY	230	#1	1	104	1700	Amps	EMERGENCY	1894	111.4	1923	113.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	106	1700	Amps	EMERGENCY	1873	110.2	1901	111.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	54	1700	Amps	EMERGENCY	1899	111.7	1928	113.4	1.7
LOSBANOS	230	WESTLEY	230	#1	1	51	1700	Amps	EMERGENCY	1876	110.4	1904	112	1.7
LOSBANOS	230	WESTLEY	230	#1	1	34	1700	Amps	EMERGENCY	1889	111.1	1917	112.8	1.7
LOSBANOS	230	WESTLEY	230	#1	1	43	1700	Amps	EMERGENCY	1874	110.2	1902	111.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	91	1700	Amps	EMERGENCY	1924	113.2	1952	114.9	1.7
LOSBANOS	230	WESTLEY	230	#1	1	4	1700	Amps	EMERGENCY	1878	110.5	1906	112.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	55	1700	Amps	EMERGENCY	1979	116.4	2007	118.1	1.7
LOSBANOS	230	WESTLEY	230	#1	1	60	1700	Amps	EMERGENCY	2073	121.9	2100	123.5	1.6
LOSBANOS	230	WESTLEY	230	#1	1	69	1700	Amps	EMERGENCY	2073	121.9	2100	123.5	1.6
LOSBANOS	230	WESTLEY	230	#1	1	72	1700	Amps	EMERGENCY	1946	114.5	1973	116	1.6
LOSBANOS	230	WESTLEY	230	#1	1	71	1700	Amps	EMERGENCY	1907	112.2	1934	113.8	1.6
LOSBANOS	230	WESTLEY	230	#1	1	63	1700	Amps	EMERGENCY	1958	115.2	1985	116.8	1.6
LOSBANOS	230	WESTLEY	230	#1	1	62	1700	Amps	EMERGENCY	2018	118.7	2045	120.3	1.6
LOSBANOS	230	WESTLEY	230	#1	1	16	1700	Amps	EMERGENCY	1916	112.7	1943	114.3	1.6
LOSBANOS	230	WESTLEY	230	#1	1	57	1700	Amps	EMERGENCY	1916	112.7	1943	114.3	1.6
SANGER	115	CLOVISJ1	115	#1	1	44	974	Amps	EMERGENCY	965	99	978	100.5	1.4
LOSBANOS	230	WESTLEY	230	#1	1	58	1700	Amps	EMERGENCY	1900	111.8	1924	113.2	1.4

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Off-Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PRE_ PCT(%)	DELTA_PCT (%)
WWARD JT	115	WOODWARD	115	#1	1	44	974	Amps	EMERGENCY	1007	103.4	1018	104.6	1.2
PSA RBLS	70	SAN MIGL	70	#1	1	82	346	Amps	EMERGENCY	374	108	366	105.6	-2.5
TEMPLETN	230	GATES	230	#1	1	83	975	Amps	EMERGENCY	1194	122.5	1104	113.2	-9.3
MORROBAY	230	GATES	230	#1	1	82	975	Amps	EMERGENCY	1219	125	1126	115.4	-9.6

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category A--Normal System (no Contingencies)--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	RATING	UNIT	TYPE	PRE-LOADING	PRE_ PCT(%)	PST_ LOADING	PST_ PCT(%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	675	Amps	NORMAL	894	132.4	981	145.3	12.9
LOSBANOS	230	WESTLEY	230	#1	1	1484	Amps	NORMAL	1520	102.4	1706	114.9	12.6
WARNERVL	230	COTTLE B	230	#1	1	675	Amps	NORMAL	980	145.2	1051	155.6	10.4
COTTLE B	230	BELLOTA	230	#1	1	675	Amps	NORMAL	904	133.8	974	144.2	10.4
STOREY 1	230	BORDEN	230	#1	1	675	Amps	NORMAL	1019	150.9	1079	159.9	8.9
STOREY 1	230	WILSON	230	#1	1	743	Amps	NORMAL	922	124.1	983	132.3	8.2
STOREY 2	230	BORDEN	230	#1	1	675	Amps	NORMAL	870	128.8	922	136.5	7.7
STOREY 2	230	WILSON	230	#1	1	675	Amps	NORMAL	783	116	834	123.6	7.6
Q194SWST	230	MIDWAY	230	#1	1	826	Amps	NORMAL	1488	180.2	1528	185.1	4.9
Q166	230	MIDWAY	230	#1	1	826	Amps	NORMAL	1474	178.5	1515	183.4	4.9
Q194SWST	230	Q166	230	#1	1	826	Amps	NORMAL	1021	123.7	1060	128.4	4.7
ORO LOMA	70	DOS PALS	70	#1	1	243	Amps	NORMAL	252	103.7	260	107	3.2
MORROBAY	230	GATES	230	#1	1	825	Amps	NORMAL	920	111.5	878	106.4	-5.1

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	286	793	Amps	EMERGENCY	1030	129.8	1172	147.7	17.9
PANOCHE	230	DS AMIGO	230	#1	1	286	850	Amps	EMERGENCY	784	92.3	931.2	109.6	17.3
WILSON	230	WARNERVL	230	#1	1	131	793	Amps	EMERGENCY	1092	137.7	1200.1	151.3	13.6
WARNERVL	230	COTTLE B	230	#1	1	286	793	Amps	EMERGENCY	1074	135.4	1180.7	148.9	13.5
WILSON	230	WARNERVL	230	#1	1	185	793	Amps	EMERGENCY	1001	126.2	1107.9	139.7	13.5
COTTLE B	230	BELLOTA	230	#1	1	286	793	Amps	EMERGENCY	997	125.7	1103.4	139.1	13.4
WILSON	230	WARNERVL	230	#1	1	166	793	Amps	EMERGENCY	1006	126.8	1112.2	140.2	13.4
WILSON	230	WARNERVL	230	#1	1	2	793	Amps	EMERGENCY	1028	129.6	1134.5	143	13.4
WILSON	230	WARNERVL	230	#1	1	152	793	Amps	EMERGENCY	974	122.7	1079.6	136.1	13.4
WILSON	230	WARNERVL	230	#1	1	171	793	Amps	EMERGENCY	968	122.1	1074.4	135.4	13.4
LOSBANOS	230	WESTLEY	230	#1	1	286	1700	Amps	EMERGENCY	1629	95.8	1851.3	108.9	13.1
STOREY 1	230	BORDEN	230	#1	1	286	793	Amps	EMERGENCY	1115	140.6	1215.4	153.2	12.7
LOSBANOS	230	WESTLEY	230	#1	1	170	1700	Amps	EMERGENCY	1643	96.7	1848	108.7	12.1
LOSBANOS	230	WESTLEY	230	#1	1	151	1700	Amps	EMERGENCY	1664	97.9	1868.3	109.9	12.1
LOSBANOS	230	WESTLEY	230	#1	1	132	1700	Amps	EMERGENCY	1544	90.8	1747.1	102.8	12
LOSBANOS	230	WESTLEY	230	#1	1	1	1700	Amps	EMERGENCY	1695	99.7	1898	111.7	12
STOREY 1	230	WILSON	230	#1	1	286	851	Amps	EMERGENCY	1018	119.7	1119	131.5	11.8
LOSBANOS	230	WESTLEY	230	#1	1	126	1700	Amps	EMERGENCY	1688	99.3	1888.5	111.1	11.8
LOSBANOS	230	WESTLEY	230	#1	1	3	1700	Amps	EMERGENCY	1588	93.4	1787.3	105.1	11.7
STOREY 1	230	BORDEN	230	#1	1	127	793	Amps	EMERGENCY	1560	196.7	1653	208.4	11.7
LOSBANOS	230	WESTLEY	230	#1	1	153	1700	Amps	EMERGENCY	1566	92.1	1764.3	103.8	11.7
LOSBANOS	230	WESTLEY	230	#1	1	172	1700	Amps	EMERGENCY	1544	90.8	1742.4	102.5	11.7
WILSON	230	WARNERVL	230	#1	1	3	793	Amps	EMERGENCY	922	116.2	1014	127.8	11.6
STOREY 1	230	BORDEN	230	#1	1	164	793	Amps	EMERGENCY	1549	195.3	1641.6	207	11.6
STOREY 1	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	1515	191	1607.1	202.6	11.6
STOREY 1	230	BORDEN	230	#1	1	183	793	Amps	EMERGENCY	1477	186.2	1568.2	197.7	11.5
WILSON	230	WARNERVL	230	#1	1	5	793	Amps	EMERGENCY	922	116.2	1013	127.7	11.5
BORDEN	230	STOREY 1	230	#1	1	145	793	Amps	EMERGENCY	1244	156.9	1335.4	168.4	11.5
WILSON	230	WARNERVL	230	#1	1	62	793	Amps	EMERGENCY	924	116.5	1014.7	127.9	11.5
WILSON	230	WARNERVL	230	#1	1	6	793	Amps	EMERGENCY	920	115.9	1010.3	127.4	11.4
WILSON	230	WARNERVL	230	#1	1	7	793	Amps	EMERGENCY	913	115.1	1003.4	126.5	11.4
WILSON	230	WARNERVL	230	#1	1	420	793	Amps	EMERGENCY	910	114.7	999.9	126.1	11.4
WILSON	230	WARNERVL	230	#1	1	416	793	Amps	EMERGENCY	945	119.2	1035.3	130.5	11.3
WILSON	230	WARNERVL	230	#1	1	207	793	Amps	EMERGENCY	895	112.8	984.9	124.2	11.3
WILSON	230	WARNERVL	230	#1	1	427	793	Amps	EMERGENCY	984	124.1	1073.9	135.4	11.3
WILSON	230	WARNERVL	230	#1	1	196	793	Amps	EMERGENCY	1010	127.3	1099.6	138.6	11.3
WILSON	230	WARNERVL	230	#1	1	189	793	Amps	EMERGENCY	933	117.7	1023	129	11.3
LOSBANOS	230	WESTLEY	230	#1	1	128	1700	Amps	EMERGENCY	1595	93.9	1787.6	105.2	11.3

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	197	793	Amps	EMERGENCY	915	115.3	1004.2	126.6	11.3
WILSON	230	WARNERVL	230	#1	1	11	793	Amps	EMERGENCY	971	122.5	1061	133.8	11.3
LOSBANOS	230	WESTLEY	230	#1	1	131	1700	Amps	EMERGENCY	1563	91.9	1754.7	103.2	11.3
WILSON	230	WARNERVL	230	#1	1	12	793	Amps	EMERGENCY	925	116.7	1014.9	127.9	11.3
LOSBANOS	230	WESTLEY	230	#1	1	16	1700	Amps	EMERGENCY	1595	93.8	1786.9	105.1	11.3
WILSON	230	WARNERVL	230	#1	1	206	793	Amps	EMERGENCY	898	113.2	987.2	124.5	11.3
WILSON	230	WARNERVL	230	#1	1	389	793	Amps	EMERGENCY	946	119.3	1035.6	130.6	11.3
WILSON	230	WARNERVL	230	#1	1	372	793	Amps	EMERGENCY	955	120.3	1043.9	131.6	11.3
WARNERVL	230	COTTLE B	230	#1	1	131	793	Amps	EMERGENCY	1174	148	1263.5	159.3	11.3
LOSBANOS	230	WESTLEY	230	#1	1	4	1700	Amps	EMERGENCY	1534	90.2	1724.8	101.5	11.3
WILSON	230	WARNERVL	230	#1	1	4	793	Amps	EMERGENCY	900	113.5	989.3	124.7	11.3
WILSON	230	WARNERVL	230	#1	1	179	793	Amps	EMERGENCY	908	114.5	997.1	125.7	11.3
LOSBANOS	230	WESTLEY	230	#1	1	165	1700	Amps	EMERGENCY	1577	92.7	1767.7	104	11.2
WILSON	230	WARNERVL	230	#1	1	160	793	Amps	EMERGENCY	916	115.5	1005.1	126.7	11.2
LOSBANOS	230	WESTLEY	230	#1	1	127	1700	Amps	EMERGENCY	1578	92.9	1769.5	104.1	11.2
LOSBANOS	230	WESTLEY	230	#1	1	184	1700	Amps	EMERGENCY	1553	91.4	1744	102.6	11.2
WARNERVL	230	COTTLE B	230	#1	1	185	793	Amps	EMERGENCY	1081	136.3	1170.3	147.5	11.2
LOSBANOS	230	WESTLEY	230	#1	1	166	1700	Amps	EMERGENCY	1532	90.1	1722.6	101.3	11.2
COTTLE B	230	BELLOTA	230	#1	1	131	793	Amps	EMERGENCY	1097	138.3	1186.1	149.5	11.2
WARNERVL	230	COTTLE B	230	#1	1	166	793	Amps	EMERGENCY	1082	136.4	1170.7	147.6	11.2
LOSBANOS	230	WESTLEY	230	#1	1	15	1700	Amps	EMERGENCY	1579	92.9	1769.1	104.1	11.2
COTTLE B	230	BELLOTA	230	#1	1	185	793	Amps	EMERGENCY	1005	126.7	1093.6	137.9	11.2
LOSBANOS	230	WESTLEY	230	#1	1	164	1700	Amps	EMERGENCY	1560	91.8	1749.8	102.9	11.2
COTTLE B	230	BELLOTA	230	#1	1	166	793	Amps	EMERGENCY	1005	126.8	1094	137.9	11.2
LOSBANOS	230	WESTLEY	230	#1	1	183	1700	Amps	EMERGENCY	1537	90.4	1726.8	101.6	11.2
PANOCHE	230	DS AMIGO	230	#1	1	5	850	Amps	EMERGENCY	758	89.2	852.7	100.3	11.1
LOSBANOS	230	WESTLEY	230	#1	1	435	1700	Amps	EMERGENCY	1520	89.4	1708.9	100.5	11.1
LOSBANOS	230	WESTLEY	230	#1	1	207	1700	Amps	EMERGENCY	1520	89.4	1708.9	100.5	11.1
LOSBANOS	230	WESTLEY	230	#1	1	206	1700	Amps	EMERGENCY	1523	89.6	1710.9	100.7	11.1
WILSON	230	WARNERVL	230	#1	1	44	793	Amps	EMERGENCY	901	113.6	988.8	124.7	11.1
WILSON	230	WARNERVL	230	#1	1	125	793	Amps	EMERGENCY	901	113.6	988.8	124.7	11.1
WILSON	230	WARNERVL	230	#1	1	292	793	Amps	EMERGENCY	932	117.5	1019.9	128.6	11
LOSBANOS	230	WESTLEY	230	#1	1	28	1700	Amps	EMERGENCY	1536	90.3	1723.1	101.4	11
WILSON	230	WARNERVL	230	#1	1	24	793	Amps	EMERGENCY	914	115.2	1001.2	126.2	11
WILSON	230	WARNERVL	230	#1	1	26	793	Amps	EMERGENCY	916	115.5	1003.3	126.5	11
WILSON	230	WARNERVL	230	#1	1	256	793	Amps	EMERGENCY	924	116.5	1011.2	127.5	11
LOSBANOS	230	WESTLEY	230	#1	1	30	1700	Amps	EMERGENCY	1533	90.2	1720.3	101.2	11
WILSON	230	WARNERVL	230	#1	1	265	793	Amps	EMERGENCY	909	114.6	996	125.6	11
WILSON	230	WARNERVL	230	#1	1	43	793	Amps	EMERGENCY	900	113.5	987.2	124.5	11
WILSON	230	WARNERVL	230	#1	1	49	793	Amps	EMERGENCY	896	113	983.2	124	11
LOSBANOS	230	WESTLEY	230	#1	1	75	1700	Amps	EMERGENCY	1538	90.5	1725.2	101.5	11

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	361	793	Amps	EMERGENCY	903	113.8	990.2	124.8	11
LOSBANOS	230	WESTLEY	230	#1	1	25	1700	Amps	EMERGENCY	1542	90.7	1729	101.7	11
LOSBANOS	230	WESTLEY	230	#1	1	208	1700	Amps	EMERGENCY	1542	90.7	1729	101.7	11
STOREY 2	230	BORDEN	230	#1	1	128	793	Amps	EMERGENCY	1459	184	1546.5	195	11
LOSBANOS	230	WESTLEY	230	#1	1	37	1700	Amps	EMERGENCY	1524	89.7	1711.2	100.7	11
WILSON	230	WARNERVL	230	#1	1	54	793	Amps	EMERGENCY	904	114	991.2	125	11
WILSON	230	WARNERVL	230	#1	1	249	793	Amps	EMERGENCY	904	114	991.1	125	11
WILSON	230	WARNERVL	230	#1	1	264	793	Amps	EMERGENCY	899	113.4	986.5	124.4	11
WILSON	230	WARNERVL	230	#1	1	45	793	Amps	EMERGENCY	899	113.4	986.5	124.4	11
WILSON	230	WARNERVL	230	#1	1	250	793	Amps	EMERGENCY	902	113.7	989.4	124.7	11
WILSON	230	WARNERVL	230	#1	1	257	793	Amps	EMERGENCY	903	113.8	990.1	124.8	11
WILSON	230	WARNERVL	230	#1	1	290	793	Amps	EMERGENCY	904	114	991.2	125	11
WILSON	230	WARNERVL	230	#1	1	362	793	Amps	EMERGENCY	896	113	983.3	124	11
LOSBANOS	230	WESTLEY	230	#1	1	292	1700	Amps	EMERGENCY	1548	91.1	1735	102.1	11
WILSON	230	WARNERVL	230	#1	1	53	793	Amps	EMERGENCY	901	113.6	988.6	124.6	11
WILSON	230	WARNERVL	230	#1	1	244	793	Amps	EMERGENCY	901	113.6	987.9	124.6	11
WILSON	230	WARNERVL	230	#1	1	262	793	Amps	EMERGENCY	902	113.7	989.2	124.7	11
WILSON	230	WARNERVL	230	#1	1	289	793	Amps	EMERGENCY	901	113.7	988.6	124.6	11
WILSON	230	WARNERVL	230	#1	1	231	793	Amps	EMERGENCY	895	112.8	982.1	123.8	11
WILSON	230	WARNERVL	230	#1	1	270	793	Amps	EMERGENCY	898	113.2	985	124.2	11
WILSON	230	WARNERVL	230	#1	1	242	793	Amps	EMERGENCY	896	112.9	982.7	123.9	11
WILSON	230	WARNERVL	230	#1	1	263	793	Amps	EMERGENCY	900	113.4	986.9	124.4	11
WILSON	230	WARNERVL	230	#1	1	59	793	Amps	EMERGENCY	899	113.3	985.7	124.3	11
WILSON	230	WARNERVL	230	#1	1	243	793	Amps	EMERGENCY	899	113.3	985.7	124.3	11
WILSON	230	WARNERVL	230	#1	1	245	793	Amps	EMERGENCY	898	113.2	985.3	124.2	11
WILSON	230	WARNERVL	230	#1	1	266	793	Amps	EMERGENCY	897	113.1	984.3	124.1	11
WILSON	230	WARNERVL	230	#1	1	269	793	Amps	EMERGENCY	897	113.1	983.9	124	11
WILSON	230	WARNERVL	230	#1	1	40	793	Amps	EMERGENCY	899	113.3	986.1	124.3	11
WILSON	230	WARNERVL	230	#1	1	226	793	Amps	EMERGENCY	896	113	983.3	124	11
WILSON	230	WARNERVL	230	#1	1	273	793	Amps	EMERGENCY	895	112.8	981.9	123.8	11
WILSON	230	WARNERVL	230	#1	1	295	793	Amps	EMERGENCY	897	113.1	984.1	124.1	11
WILSON	230	WARNERVL	230	#1	1	297	793	Amps	EMERGENCY	895	112.9	982.3	123.8	11
WILSON	230	WARNERVL	230	#1	1	50	793	Amps	EMERGENCY	896	113	983.1	123.9	11
WILSON	230	WARNERVL	230	#1	1	246	793	Amps	EMERGENCY	897	113.1	984.2	124.1	11
WILSON	230	WARNERVL	230	#1	1	261	793	Amps	EMERGENCY	897	113	983.6	124	11
WILSON	230	WARNERVL	230	#1	1	64	793	Amps	EMERGENCY	894	112.8	981.4	123.7	11
WILSON	230	WARNERVL	230	#1	1	73	793	Amps	EMERGENCY	897	113.1	984.2	124.1	11
WILSON	230	WARNERVL	230	#1	1	74	793	Amps	EMERGENCY	897	113.1	984.2	124.1	11
WILSON	230	WARNERVL	230	#1	1	51	793	Amps	EMERGENCY	895	112.8	981.7	123.8	11
WILSON	230	WARNERVL	230	#1	1	65	793	Amps	EMERGENCY	896	112.9	982.9	123.9	11
WILSON	230	WARNERVL	230	#1	1	357	793	Amps	EMERGENCY	894	112.8	981.4	123.7	11

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	256	1700	Amps	EMERGENCY	1542	90.7	1728.5	101.7	11
WILSON	230	WARNERVL	230	#1	1	240	793	Amps	EMERGENCY	896	112.9	982.8	123.9	11
WILSON	230	WARNERVL	230	#1	1	58	793	Amps	EMERGENCY	905	114.1	992.3	125.1	11
WILSON	230	WARNERVL	230	#1	1	275	793	Amps	EMERGENCY	898	113.2	984.8	124.2	11
LOSBANOS	230	WESTLEY	230	#1	1	41	1700	Amps	EMERGENCY	1536	90.3	1722	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	265	1700	Amps	EMERGENCY	1538	90.5	1724.5	101.5	11
WILSON	230	WARNERVL	230	#1	1	274	793	Amps	EMERGENCY	895	112.8	981.7	123.8	11
WILSON	230	WARNERVL	230	#1	1	277	793	Amps	EMERGENCY	895	112.9	982.4	123.9	11
LOSBANOS	230	WESTLEY	230	#1	1	50	1700	Amps	EMERGENCY	1532	90.1	1718.7	101.1	11
LOSBANOS	230	WESTLEY	230	#1	1	107	1700	Amps	EMERGENCY	1523	89.6	1709	100.5	11
WILSON	230	WARNERVL	230	#1	1	237	793	Amps	EMERGENCY	903	113.9	990.1	124.8	11
WILSON	230	WARNERVL	230	#1	1	253	793	Amps	EMERGENCY	895	112.9	982.2	123.8	11
LOSBANOS	230	WESTLEY	230	#1	1	231	1700	Amps	EMERGENCY	1522	89.6	1708.8	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	58	1700	Amps	EMERGENCY	1523	89.6	1709.2	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	212	1700	Amps	EMERGENCY	1526	89.8	1712.3	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	54	1700	Amps	EMERGENCY	1527	89.8	1713	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	361	1700	Amps	EMERGENCY	1531	90.1	1717.2	101	11
WILSON	230	WARNERVL	230	#1	1	360	793	Amps	EMERGENCY	898	113.2	985.1	124.2	11
LOSBANOS	230	WESTLEY	230	#1	1	249	1700	Amps	EMERGENCY	1527	89.8	1713.3	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	290	1700	Amps	EMERGENCY	1530	90	1716.7	101	11
LOSBANOS	230	WESTLEY	230	#1	1	26	1700	Amps	EMERGENCY	1526	89.7	1711.8	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	257	1700	Amps	EMERGENCY	1526	89.8	1712.6	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	214	1700	Amps	EMERGENCY	1523	89.6	1709.1	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	250	1700	Amps	EMERGENCY	1526	89.8	1712	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	24	1700	Amps	EMERGENCY	1525	89.7	1711.3	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	264	1700	Amps	EMERGENCY	1526	89.8	1712.6	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	45	1700	Amps	EMERGENCY	1526	89.8	1712.5	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	69	1700	Amps	EMERGENCY	1521	89.5	1707.2	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	242	1700	Amps	EMERGENCY	1524	89.7	1710.3	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	262	1700	Amps	EMERGENCY	1527	89.8	1713.3	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	289	1700	Amps	EMERGENCY	1526	89.8	1712.6	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	48	1700	Amps	EMERGENCY	1540	90.6	1726	101.5	11
LOSBANOS	230	WESTLEY	230	#1	1	244	1700	Amps	EMERGENCY	1524	89.6	1709.8	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	273	1700	Amps	EMERGENCY	1521	89.5	1707.4	100.4	11
WILSON	230	WARNERVL	230	#1	1	299	793	Amps	EMERGENCY	896	113	983.1	123.9	11
LOSBANOS	230	WESTLEY	230	#1	1	51	1700	Amps	EMERGENCY	1524	89.6	1709.9	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	53	1700	Amps	EMERGENCY	1522	89.6	1708.5	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	215	1700	Amps	EMERGENCY	1520	89.4	1706.2	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	263	1700	Amps	EMERGENCY	1526	89.8	1712	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	270	1700	Amps	EMERGENCY	1528	89.9	1713.9	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	218	1700	Amps	EMERGENCY	1521	89.5	1707.7	100.5	11

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	59	1700	Amps	EMERGENCY	1522	89.6	1708.5	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	213	1700	Amps	EMERGENCY	1521	89.5	1707.2	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	243	1700	Amps	EMERGENCY	1522	89.6	1708.5	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	245	1700	Amps	EMERGENCY	1524	89.7	1710.2	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	266	1700	Amps	EMERGENCY	1523	89.6	1709.2	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	269	1700	Amps	EMERGENCY	1525	89.7	1711.6	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	284	1700	Amps	EMERGENCY	1522	89.5	1707.9	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	362	1700	Amps	EMERGENCY	1523	89.6	1708.8	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	47	1700	Amps	EMERGENCY	1520	89.4	1706.6	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	216	1700	Amps	EMERGENCY	1521	89.5	1707	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	217	1700	Amps	EMERGENCY	1521	89.5	1707	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	226	1700	Amps	EMERGENCY	1522	89.5	1707.8	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	227	1700	Amps	EMERGENCY	1521	89.5	1707.1	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	246	1700	Amps	EMERGENCY	1523	89.6	1709.5	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	254	1700	Amps	EMERGENCY	1520	89.4	1706.4	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	261	1700	Amps	EMERGENCY	1522	89.5	1708.1	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	283	1700	Amps	EMERGENCY	1521	89.5	1707.7	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	295	1700	Amps	EMERGENCY	1523	89.6	1709	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	297	1700	Amps	EMERGENCY	1521	89.5	1707.3	100.4	11
STOREY 2	230	BORDEN	230	#1	1	165	793	Amps	EMERGENCY	1449	182.6	1535.6	193.6	11
LOSBANOS	230	WESTLEY	230	#1	1	219	1700	Amps	EMERGENCY	1520	89.4	1706.5	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	240	1700	Amps	EMERGENCY	1521	89.5	1707.1	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	282	1700	Amps	EMERGENCY	1522	89.5	1708.2	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	73	1700	Amps	EMERGENCY	1521	89.5	1706.7	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	74	1700	Amps	EMERGENCY	1521	89.5	1706.7	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	229	1700	Amps	EMERGENCY	1520	89.4	1706.2	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	275	1700	Amps	EMERGENCY	1526	89.7	1711.7	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	291	1700	Amps	EMERGENCY	1520	89.4	1706.1	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	357	1700	Amps	EMERGENCY	1520	89.4	1706.4	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	40	1700	Amps	EMERGENCY	1530	90	1716.3	101	11
WILSON	230	WARNERVL	230	#1	1	276	793	Amps	EMERGENCY	895	112.8	981.8	123.8	11
LOSBANOS	230	WESTLEY	230	#1	1	43	1700	Amps	EMERGENCY	1521	89.5	1707.4	100.4	11
LOSBANOS	230	WESTLEY	230	#1	1	72	1700	Amps	EMERGENCY	1523	89.6	1709	100.5	10.9
LOSBANOS	230	WESTLEY	230	#1	1	71	1700	Amps	EMERGENCY	1523	89.6	1709.2	100.6	10.9
LOSBANOS	230	WESTLEY	230	#1	1	285	1700	Amps	EMERGENCY	1521	89.5	1707.1	100.4	10.9
LOSBANOS	230	WESTLEY	230	#1	1	277	1700	Amps	EMERGENCY	1523	89.6	1708.5	100.5	10.9
WILSON	230	WARNERVL	230	#1	1	280	793	Amps	EMERGENCY	906	114.2	992.8	125.2	10.9
STOREY 1	230	WILSON	230	#1	1	127	851	Amps	EMERGENCY	1465	172.1	1557.6	183	10.9
STOREY 2	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	1417	178.6	1503.2	189.5	10.9
STOREY 2	230	WILSON	230	#1	1	128	793	Amps	EMERGENCY	1371	172.8	1457.3	183.7	10.9
WILSON	230	WARNERVL	230	#1	1	281	793	Amps	EMERGENCY	906	114.3	993	125.2	10.9

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	276	1700	Amps	EMERGENCY	1522	89.5	1707.2	100.4	10.9
WILSON	230	WARNERVL	230	#1	1	68	793	Amps	EMERGENCY	908	114.5	994.6	125.4	10.9
LOSBANOS	230	WESTLEY	230	#1	1	125	1700	Amps	EMERGENCY	1527	89.9	1713.1	100.8	10.9
LOSBANOS	230	WESTLEY	230	#1	1	44	1700	Amps	EMERGENCY	1528	89.9	1713.4	100.8	10.9
WILSON	230	WARNERVL	230	#1	1	67	793	Amps	EMERGENCY	909	114.5	995.1	125.5	10.9
LOSBANOS	230	WESTLEY	230	#1	1	299	1700	Amps	EMERGENCY	1524	89.6	1709.1	100.5	10.9
WILSON	230	WARNERVL	230	#1	1	285	793	Amps	EMERGENCY	898	113.2	984.5	124.1	10.9
WILSON	230	WARNERVL	230	#1	1	233	793	Amps	EMERGENCY	899	113.3	985.3	124.2	10.9
WILSON	230	WARNERVL	230	#1	1	235	793	Amps	EMERGENCY	901	113.5	987	124.4	10.9
STOREY 1	230	WILSON	230	#1	1	164	851	Amps	EMERGENCY	1453	170.8	1545.8	181.7	10.9
STOREY 2	230	WILSON	230	#1	1	165	793	Amps	EMERGENCY	1360	171.5	1446.7	182.4	10.9
LOSBANOS	230	WESTLEY	230	#1	1	432	1700	Amps	EMERGENCY	1525	89.7	1710.2	100.6	10.9
WILSON	230	WARNERVL	230	#1	1	25	793	Amps	EMERGENCY	909	114.6	995.3	125.5	10.9
WILSON	230	WARNERVL	230	#1	1	208	793	Amps	EMERGENCY	909	114.6	995.3	125.5	10.9
LOSBANOS	230	WESTLEY	230	#1	1	203	1700	Amps	EMERGENCY	1528	89.9	1712.5	100.7	10.9
STOREY 2	230	BORDEN	230	#1	1	286	793	Amps	EMERGENCY	952	120	1038.2	130.9	10.9
STOREY 2	230	BORDEN	230	#1	1	184	793	Amps	EMERGENCY	1380	174	1466.3	184.9	10.9
STOREY 2	230	WILSON	230	#1	1	16	793	Amps	EMERGENCY	1328	167.5	1414.5	178.3	10.9
WILSON	230	WARNERVL	230	#1	1	30	793	Amps	EMERGENCY	902	113.7	987.9	124.5	10.9
STOREY 1	230	WILSON	230	#1	1	15	851	Amps	EMERGENCY	1419	166.7	1511.1	177.6	10.9
STOREY 2	230	BORDEN	230	#1	1	146	793	Amps	EMERGENCY	1163	146.6	1248.4	157.4	10.8
STOREY 2	230	WILSON	230	#1	1	184	793	Amps	EMERGENCY	1292	162.9	1377.9	173.7	10.8
STOREY 1	230	WILSON	230	#1	1	183	851	Amps	EMERGENCY	1380	162.2	1471.9	173	10.8
STOREY 2	230	WILSON	230	#1	1	286	793	Amps	EMERGENCY	865	109	949.9	119.7	10.7
STOREY 2	230	WILSON	230	#1	1	146	793	Amps	EMERGENCY	1076	135.7	1161.3	146.4	10.7
STOREY 1	230	WILSON	230	#1	1	145	851	Amps	EMERGENCY	1148	135	1239.7	145.7	10.7
Q194SWST	230	MIDWAY	230	#1	1	286	976	Amps	EMERGENCY	1626	166.5	1729.9	177.2	10.7
Q166	230	MIDWAY	230	#1	1	286	976	Amps	EMERGENCY	1612	165.1	1716.1	175.7	10.7
WILSON	230	WARNERVL	230	#1	1	203	793	Amps	EMERGENCY	930	117.2	1010.7	127.4	10.2
Q194SWST	230	Q166	230	#1	1	286	976	Amps	EMERGENCY	1155	118.3	1254.8	128.5	10.2
WARNERVL	230	COTTLE B	230	#1	1	2	793	Amps	EMERGENCY	996	125.6	1071.4	135.1	9.5
COTTLE B	230	BELLOTA	230	#1	1	2	793	Amps	EMERGENCY	920	115.9	994.3	125.3	9.4
WARNERVL	230	COTTLE B	230	#1	1	3	793	Amps	EMERGENCY	1001	126.2	1075.5	135.6	9.4
COTTLE B	230	BELLOTA	230	#1	1	3	793	Amps	EMERGENCY	924	116.6	998.4	125.9	9.3
WARNERVL	230	COTTLE B	230	#1	1	416	793	Amps	EMERGENCY	1022	128.9	1094.8	138	9.1
WARNERVL	230	COTTLE B	230	#1	1	428	793	Amps	EMERGENCY	987	124.4	1059.4	133.6	9.1
WARNERVL	230	COTTLE B	230	#1	1	5	793	Amps	EMERGENCY	994	125.4	1066.8	134.5	9.1
WARNERVL	230	COTTLE B	230	#1	1	420	793	Amps	EMERGENCY	999	126	1071.4	135.1	9.1
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	995	125.5	1067.7	134.6	9.1
WARNERVL	230	COTTLE B	230	#1	1	207	793	Amps	EMERGENCY	981	123.7	1053.3	132.8	9.1
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	993	125.2	1065.5	134.3	9.1

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	417	793	Amps	EMERGENCY	994	125.4	1066.6	134.5	9.1
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	990	124.8	1062.1	133.9	9.1
COTTLE B	230	BELLOTA	230	#1	1	416	793	Amps	EMERGENCY	945	119.2	1017.4	128.3	9.1
COTTLE B	230	BELLOTA	230	#1	1	428	793	Amps	EMERGENCY	910	114.7	982.1	123.8	9.1
COTTLE B	230	BELLOTA	230	#1	1	420	793	Amps	EMERGENCY	922	116.2	994.1	125.3	9.1
COTTLE B	230	BELLOTA	230	#1	1	5	793	Amps	EMERGENCY	918	115.7	989.7	124.8	9.1
WARNERVL	230	COTTLE B	230	#1	1	427	793	Amps	EMERGENCY	1046	131.8	1117.8	140.9	9.1
WARNERVL	230	COTTLE B	230	#1	1	196	793	Amps	EMERGENCY	1051	132.6	1123.5	141.6	9.1
WARNERVL	230	COTTLE B	230	#1	1	11	793	Amps	EMERGENCY	1028	129.6	1100.1	138.7	9.1
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	919	115.8	990.7	124.9	9.1
COTTLE B	230	BELLOTA	230	#1	1	207	793	Amps	EMERGENCY	904	114	976.3	123.1	9.1
WARNERVL	230	COTTLE B	230	#1	1	4	793	Amps	EMERGENCY	985	124.2	1056.8	133.2	9.1
WARNERVL	230	COTTLE B	230	#1	1	206	793	Amps	EMERGENCY	983	123.9	1055	133	9.1
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	917	115.6	988.5	124.6	9.1
COTTLE B	230	BELLOTA	230	#1	1	417	793	Amps	EMERGENCY	917	115.7	989.3	124.7	9.1
WARNERVL	230	COTTLE B	230	#1	1	197	793	Amps	EMERGENCY	993	125.2	1064.9	134.2	9.1
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	913	115.1	985.1	124.2	9.1
WARNERVL	230	COTTLE B	230	#1	1	189	793	Amps	EMERGENCY	1003	126.5	1075.1	135.5	9.1
WARNERVL	230	COTTLE B	230	#1	1	389	793	Amps	EMERGENCY	1009	127.2	1080.4	136.2	9.1
WARNERVL	230	COTTLE B	230	#1	1	12	793	Amps	EMERGENCY	998	125.9	1070.3	134.9	9.1
WARNERVL	230	COTTLE B	230	#1	1	179	793	Amps	EMERGENCY	985	124.2	1057	133.3	9.1
WARNERVL	230	COTTLE B	230	#1	1	372	793	Amps	EMERGENCY	1012	127.5	1083.3	136.6	9
COTTLE B	230	BELLOTA	230	#1	1	427	793	Amps	EMERGENCY	969	122.1	1040.3	131.2	9
COTTLE B	230	BELLOTA	230	#1	1	196	793	Amps	EMERGENCY	975	122.9	1046.3	131.9	9
COTTLE B	230	BELLOTA	230	#1	1	11	793	Amps	EMERGENCY	951	119.9	1023	129	9
WARNERVL	230	COTTLE B	230	#1	1	160	793	Amps	EMERGENCY	988	124.6	1059.9	133.6	9
COTTLE B	230	BELLOTA	230	#1	1	4	793	Amps	EMERGENCY	908	114.5	979.7	123.5	9
COTTLE B	230	BELLOTA	230	#1	1	206	793	Amps	EMERGENCY	906	114.3	978	123.3	9
COTTLE B	230	BELLOTA	230	#1	1	197	793	Amps	EMERGENCY	916	115.5	987.8	124.5	9
COTTLE B	230	BELLOTA	230	#1	1	189	793	Amps	EMERGENCY	926	116.8	998	125.8	9
COTTLE B	230	BELLOTA	230	#1	1	389	793	Amps	EMERGENCY	932	117.5	1003.4	126.5	9
COTTLE B	230	BELLOTA	230	#1	1	179	793	Amps	EMERGENCY	909	114.5	980	123.6	9
COTTLE B	230	BELLOTA	230	#1	1	12	793	Amps	EMERGENCY	922	116.2	993.2	125.2	9
COTTLE B	230	BELLOTA	230	#1	1	372	793	Amps	EMERGENCY	935	117.9	1006.3	126.9	9
COTTLE B	230	BELLOTA	230	#1	1	160	793	Amps	EMERGENCY	912	114.9	982.9	123.9	9
WARNERVL	230	COTTLE B	230	#1	1	44	793	Amps	EMERGENCY	986	124.3	1056.4	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	125	793	Amps	EMERGENCY	986	124.3	1056.4	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	292	793	Amps	EMERGENCY	1007	127	1077.6	135.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	256	793	Amps	EMERGENCY	1001	126.2	1071.6	135.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	26	793	Amps	EMERGENCY	997	125.7	1067.3	134.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	24	793	Amps	EMERGENCY	996	125.5	1066.2	134.4	8.9

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	265	793	Amps	EMERGENCY	991	124.9	1061.2	133.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	985	124.1	1055	133	8.9
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	982	123.8	1052.1	132.6	8.9
COTTLE B	230	BELLOTA	230	#1	1	125	793	Amps	EMERGENCY	909	114.6	979.3	123.5	8.9
COTTLE B	230	BELLOTA	230	#1	1	44	793	Amps	EMERGENCY	909	114.6	979.4	123.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	361	793	Amps	EMERGENCY	987	124.4	1057.2	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	45	793	Amps	EMERGENCY	984	124.1	1054.6	133	8.9
WARNERVL	230	COTTLE B	230	#1	1	249	793	Amps	EMERGENCY	987	124.5	1057.7	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	264	793	Amps	EMERGENCY	984	124.1	1054.6	133	8.9
WARNERVL	230	COTTLE B	230	#1	1	250	793	Amps	EMERGENCY	986	124.3	1056.5	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	257	793	Amps	EMERGENCY	987	124.4	1057	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	231	793	Amps	EMERGENCY	981	123.7	1051.6	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	289	793	Amps	EMERGENCY	986	124.3	1056	133.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	290	793	Amps	EMERGENCY	987	124.5	1057.8	133.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	985	124.2	1055.8	133.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	244	793	Amps	EMERGENCY	985	124.2	1055.4	133.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	362	793	Amps	EMERGENCY	982	123.8	1052.4	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	262	793	Amps	EMERGENCY	986	124.3	1056.4	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	263	793	Amps	EMERGENCY	984	124.1	1054.8	133	8.9
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	987	124.4	1057.3	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	245	793	Amps	EMERGENCY	983	124	1053.6	132.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	270	793	Amps	EMERGENCY	983	124	1053.7	132.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	984	124	1053.9	132.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	243	793	Amps	EMERGENCY	984	124	1053.9	132.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	50	793	Amps	EMERGENCY	982	123.8	1052.7	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	242	793	Amps	EMERGENCY	982	123.8	1052	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	266	793	Amps	EMERGENCY	983	123.9	1053	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	65	793	Amps	EMERGENCY	981	123.7	1051.8	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	246	793	Amps	EMERGENCY	983	123.9	1052.9	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	269	793	Amps	EMERGENCY	982	123.9	1052.8	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	273	793	Amps	EMERGENCY	981	123.7	1051.3	132.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	295	793	Amps	EMERGENCY	983	123.9	1052.8	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	297	793	Amps	EMERGENCY	981	123.7	1051.6	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	984	124.1	1054.5	132.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	51	793	Amps	EMERGENCY	981	123.7	1051.4	132.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	226	793	Amps	EMERGENCY	982	123.8	1052.2	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	261	793	Amps	EMERGENCY	982	123.8	1052.5	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	73	793	Amps	EMERGENCY	983	123.9	1053	132.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	983	123.9	1053	132.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	240	793	Amps	EMERGENCY	982	123.7	1051.9	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	275	793	Amps	EMERGENCY	983	123.9	1053.4	132.8	8.9

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	58	793	Amps	EMERGENCY	988	124.6	1058.3	133.4	8.9
COTTLE B	230	BELLOTA	230	#1	1	292	793	Amps	EMERGENCY	930	117.3	1000.5	126.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	237	793	Amps	EMERGENCY	986	124.3	1056.6	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	274	793	Amps	EMERGENCY	981	123.7	1051.1	132.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	253	793	Amps	EMERGENCY	981	123.7	1051.4	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	277	793	Amps	EMERGENCY	981	123.7	1051.7	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	360	793	Amps	EMERGENCY	983	123.9	1053.3	132.8	8.9
STOREY 1	230	BORDEN	230	#1	1	152	793	Amps	EMERGENCY	1105	139.3	1175.4	148.2	8.9
COTTLE B	230	BELLOTA	230	#1	1	256	793	Amps	EMERGENCY	924	116.5	994.6	125.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	299	793	Amps	EMERGENCY	982	123.8	1052.2	132.6	8.9
COTTLE B	230	BELLOTA	230	#1	1	26	793	Amps	EMERGENCY	920	116	990.3	124.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	24	793	Amps	EMERGENCY	919	115.9	989.2	124.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	908	114.5	978	123.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	265	793	Amps	EMERGENCY	914	115.2	984.2	124.1	8.8
WARNERVL	230	COTTLE B	230	#1	1	276	793	Amps	EMERGENCY	981	123.7	1051.3	132.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	905	114.1	975.1	122.9	8.8
WARNERVL	230	COTTLE B	230	#1	1	280	793	Amps	EMERGENCY	988	124.5	1057.7	133.3	8.8
WARNERVL	230	COTTLE B	230	#1	1	281	793	Amps	EMERGENCY	987	124.5	1057.6	133.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	361	793	Amps	EMERGENCY	910	114.7	980.1	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	45	793	Amps	EMERGENCY	908	114.4	977.6	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	249	793	Amps	EMERGENCY	911	114.8	980.7	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	264	793	Amps	EMERGENCY	908	114.4	977.6	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	290	793	Amps	EMERGENCY	911	114.8	980.7	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	909	114.6	978.8	123.4	8.8
COTTLE B	230	BELLOTA	230	#1	1	257	793	Amps	EMERGENCY	910	114.7	980	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	262	793	Amps	EMERGENCY	909	114.6	979.4	123.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	250	793	Amps	EMERGENCY	909	114.7	979.5	123.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	289	793	Amps	EMERGENCY	909	114.6	979	123.4	8.8
COTTLE B	230	BELLOTA	230	#1	1	231	793	Amps	EMERGENCY	904	114	974.5	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	362	793	Amps	EMERGENCY	905	114.1	975.4	123	8.8
WARNERVL	230	COTTLE B	230	#1	1	67	793	Amps	EMERGENCY	990	124.8	1059.7	133.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	910	114.8	980.3	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	242	793	Amps	EMERGENCY	905	114.1	975	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	244	793	Amps	EMERGENCY	908	114.5	978.4	123.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	263	793	Amps	EMERGENCY	908	114.4	977.8	123.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	270	793	Amps	EMERGENCY	907	114.3	976.6	123.1	8.8
WARNERVL	230	COTTLE B	230	#1	1	68	793	Amps	EMERGENCY	989	124.7	1059.3	133.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	269	793	Amps	EMERGENCY	906	114.2	975.8	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	907	114.3	976.8	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	65	793	Amps	EMERGENCY	905	114.1	974.8	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	243	793	Amps	EMERGENCY	907	114.3	976.8	123.2	8.8

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	245	793	Amps	EMERGENCY	907	114.3	976.6	123.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	273	793	Amps	EMERGENCY	904	114	974.3	122.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	297	793	Amps	EMERGENCY	905	114	974.6	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	50	793	Amps	EMERGENCY	906	114.2	975.7	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	226	793	Amps	EMERGENCY	905	114.1	975.2	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	295	793	Amps	EMERGENCY	906	114.2	975.8	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	907	114.4	977.5	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	246	793	Amps	EMERGENCY	906	114.2	975.9	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	261	793	Amps	EMERGENCY	905	114.2	975.5	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	266	793	Amps	EMERGENCY	906	114.2	976	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	51	793	Amps	EMERGENCY	904	114	974.4	122.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	73	793	Amps	EMERGENCY	906	114.2	976	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	906	114.2	976	123	8.8
WARNERVL	230	COTTLE B	230	#1	1	285	793	Amps	EMERGENCY	983	123.9	1052.9	132.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	240	793	Amps	EMERGENCY	905	114.1	974.9	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	275	793	Amps	EMERGENCY	906	114.3	976.4	123.1	8.8
WARNERVL	230	COTTLE B	230	#1	1	233	793	Amps	EMERGENCY	984	124	1053.5	132.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	58	793	Amps	EMERGENCY	911	114.9	981.3	123.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	237	793	Amps	EMERGENCY	910	114.7	979.6	123.5	8.8
WARNERVL	230	COTTLE B	230	#1	1	235	793	Amps	EMERGENCY	985	124.1	1054.5	132.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	253	793	Amps	EMERGENCY	904	114	974.4	122.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	274	793	Amps	EMERGENCY	904	114	974.1	122.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	277	793	Amps	EMERGENCY	905	114.1	974.7	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	360	793	Amps	EMERGENCY	906	114.3	976.3	123.1	8.8
STOREY 1	230	BORDEN	230	#1	1	2	793	Amps	EMERGENCY	1083	136.5	1153	145.4	8.8
COTTLE B	230	BELLOTA	230	#1	1	299	793	Amps	EMERGENCY	905	114.1	975.2	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	276	793	Amps	EMERGENCY	904	114	974.3	122.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	280	793	Amps	EMERGENCY	911	114.8	980.7	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	281	793	Amps	EMERGENCY	911	114.8	980.6	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	67	793	Amps	EMERGENCY	913	115.1	982.6	123.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	68	793	Amps	EMERGENCY	913	115	982.3	123.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	285	793	Amps	EMERGENCY	906	114.2	975.9	123	8.8
WARNERVL	230	COTTLE B	230	#1	1	25	793	Amps	EMERGENCY	992	125	1061.3	133.8	8.8
WARNERVL	230	COTTLE B	230	#1	1	208	793	Amps	EMERGENCY	992	125	1061.3	133.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	235	793	Amps	EMERGENCY	908	114.5	977.5	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	233	793	Amps	EMERGENCY	907	114.3	976.5	123.1	8.8
WARNERVL	230	COTTLE B	230	#1	1	30	793	Amps	EMERGENCY	987	124.4	1056.5	133.2	8.8
BORDEN	230	STOREY 1	230	#1	1	171	793	Amps	EMERGENCY	1056	133.1	1125.5	141.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	25	793	Amps	EMERGENCY	915	115.3	984.2	124.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	208	793	Amps	EMERGENCY	915	115.3	984.2	124.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	30	793	Amps	EMERGENCY	910	114.8	979.5	123.5	8.7

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	203	793	Amps	EMERGENCY	1004	126.5	1070	134.9	8.4
WARNERVL	230	COTTLE B	230	#1	1	432	793	Amps	EMERGENCY	999	126	1065.6	134.3	8.4
COTTLE B	230	BELLOTA	230	#1	1	203	793	Amps	EMERGENCY	927	116.8	992.9	125.2	8.3
COTTLE B	230	BELLOTA	230	#1	1	432	793	Amps	EMERGENCY	922	116.3	988.2	124.6	8.3
STOREY 1	230	WILSON	230	#1	1	152	851	Amps	EMERGENCY	1008	118.5	1079	126.8	8.3
STOREY 1	230	WILSON	230	#1	1	2	851	Amps	EMERGENCY	986	115.9	1056.6	124.2	8.3
STOREY 1	230	WILSON	230	#1	1	171	851	Amps	EMERGENCY	959	112.7	1028.8	120.9	8.2
STOREY 1	230	BORDEN	230	#1	1	420	793	Amps	EMERGENCY	1088	137.2	1152	145.2	8
STOREY 1	230	BORDEN	230	#1	1	428	793	Amps	EMERGENCY	1068	134.6	1131.4	142.6	8
STOREY 1	230	BORDEN	230	#1	1	416	793	Amps	EMERGENCY	1127	142	1190.2	150.1	8
STOREY 1	230	BORDEN	230	#1	1	427	793	Amps	EMERGENCY	1170	147.5	1233.2	155.5	8
BORDEN	230	STOREY 1	230	#1	1	28	793	Amps	EMERGENCY	1065	134.2	1128.4	142.3	8
STOREY 1	230	BORDEN	230	#1	1	372	793	Amps	EMERGENCY	1162	146.5	1225.2	154.5	8
BORDEN	230	STOREY 1	230	#1	1	107	793	Amps	EMERGENCY	1087	137.1	1150.7	145.1	8
BORDEN	230	STOREY 1	230	#1	1	153	793	Amps	EMERGENCY	1056	133.1	1119.2	141.1	8
BORDEN	230	STOREY 1	230	#1	1	365	793	Amps	EMERGENCY	1081	136.2	1143.9	144.2	8
STOREY 1	230	BORDEN	230	#1	1	160	793	Amps	EMERGENCY	1119	141.1	1182.1	149	8
STOREY 1	230	BORDEN	230	#1	1	373	793	Amps	EMERGENCY	1060	133.6	1123.3	141.6	8
STOREY 1	230	BORDEN	230	#1	1	196	793	Amps	EMERGENCY	1143	144.1	1205.8	152	8
BORDEN	230	STOREY 1	230	#1	1	208	793	Amps	EMERGENCY	1057	133.3	1120.3	141.2	8
STOREY 1	230	BORDEN	230	#1	1	25	793	Amps	EMERGENCY	1057	133.3	1120.3	141.2	8
BORDEN	230	STOREY 1	230	#1	1	106	793	Amps	EMERGENCY	1069	134.7	1131.6	142.7	8
STOREY 1	230	BORDEN	230	#1	1	189	793	Amps	EMERGENCY	1059	133.5	1121.7	141.4	8
STOREY 1	230	BORDEN	230	#1	1	3	793	Amps	EMERGENCY	1034	130.3	1096.7	138.3	8
STOREY 1	230	BORDEN	230	#1	1	417	793	Amps	EMERGENCY	1075	135.6	1138.3	143.5	8
STOREY 1	230	BORDEN	230	#1	1	11	793	Amps	EMERGENCY	1100	138.7	1162.9	146.6	7.9
STOREY 1	230	BORDEN	230	#1	1	197	793	Amps	EMERGENCY	1041	131.2	1104.1	139.2	7.9
STOREY 1	230	BORDEN	230	#1	1	436	793	Amps	EMERGENCY	1050	132.4	1112.9	140.3	7.9
BORDEN	230	STOREY 1	230	#1	1	22	793	Amps	EMERGENCY	1038	130.9	1101.2	138.8	7.9
STOREY 1	230	BORDEN	230	#1	1	389	793	Amps	EMERGENCY	1109	139.8	1172	147.8	7.9
BORDEN	230	STOREY 1	230	#1	1	382	793	Amps	EMERGENCY	1029	129.7	1091.8	137.6	7.9
STOREY 1	230	BORDEN	230	#1	1	155	793	Amps	EMERGENCY	1057	133.2	1119.5	141.1	7.9
STOREY 1	230	BORDEN	230	#1	1	161	793	Amps	EMERGENCY	1068	134.6	1130.2	142.5	7.9
STOREY 1	230	BORDEN	230	#1	1	179	793	Amps	EMERGENCY	1066	134.5	1129.1	142.3	7.9
STOREY 1	230	BORDEN	230	#1	1	435	793	Amps	EMERGENCY	1052	132.6	1114.5	140.5	7.9
BORDEN	230	STOREY 1	230	#1	1	169	793	Amps	EMERGENCY	1058	133.4	1120.4	141.3	7.9
STOREY 1	230	BORDEN	230	#1	1	381	793	Amps	EMERGENCY	1042	131.4	1105	139.3	7.9
STOREY 1	230	BORDEN	230	#1	1	156	793	Amps	EMERGENCY	1056	133.1	1118.1	141	7.9
STOREY 1	230	BORDEN	230	#1	1	5	793	Amps	EMERGENCY	1034	130.4	1096.9	138.3	7.9
BORDEN	230	STOREY 1	230	#1	1	157	793	Amps	EMERGENCY	1052	132.6	1114.2	140.5	7.9
STOREY 1	230	BORDEN	230	#1	1	12	793	Amps	EMERGENCY	1045	131.8	1107.8	139.7	7.9

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
BORDEN	230	STOREY 1	230	#1	1	62	793	Amps	EMERGENCY	1035	130.5	1097.8	138.4	7.9
BORDEN	230	STOREY 1	230	#1	1	6	793	Amps	EMERGENCY	1033	130.3	1095.5	138.1	7.9
STOREY 1	230	BORDEN	230	#1	1	207	793	Amps	EMERGENCY	1020	128.6	1082.2	136.4	7.9
STOREY 1	230	BORDEN	230	#1	1	7	793	Amps	EMERGENCY	1029	129.8	1091.6	137.6	7.9
STOREY 1	230	BORDEN	230	#1	1	380	793	Amps	EMERGENCY	1044	131.7	1106.6	139.5	7.8
MELONES	230	COTTLE A	230	#1	1	170	850	Amps	EMERGENCY	828	97.4	894.3	105.2	7.8
STOREY 1	230	BORDEN	230	#1	1	206	793	Amps	EMERGENCY	1022	128.8	1083.8	136.6	7.8
BORDEN	230	STOREY 1	230	#1	1	41	793	Amps	EMERGENCY	1045	131.7	1106.7	139.5	7.8
MELONES	230	COTTLE A	230	#1	1	151	850	Amps	EMERGENCY	828	97.4	894.4	105.2	7.8
BORDEN	230	STOREY 1	230	#1	1	70	793	Amps	EMERGENCY	1034	130.4	1096.1	138.2	7.8
STOREY 1	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	1059	133.5	1120.2	141.2	7.8
BORDEN	230	STOREY 1	230	#1	1	154	793	Amps	EMERGENCY	1045	131.8	1106.7	139.5	7.8
STOREY 1	230	BORDEN	230	#1	1	418	793	Amps	EMERGENCY	1050	132.4	1111.7	140.1	7.8
STOREY 1	230	BORDEN	230	#1	1	419	793	Amps	EMERGENCY	1050	132.4	1111.7	140.1	7.8
BORDEN	230	STOREY 1	230	#1	1	112	793	Amps	EMERGENCY	1044	131.7	1106	139.4	7.8
STOREY 1	230	BORDEN	230	#1	1	434	793	Amps	EMERGENCY	1037	130.8	1098.7	138.5	7.8
STOREY 1	230	BORDEN	230	#1	1	433	793	Amps	EMERGENCY	1039	131	1100.5	138.7	7.8
STOREY 1	230	BORDEN	230	#1	1	111	793	Amps	EMERGENCY	1048	132.1	1109.3	139.8	7.7
STOREY 1	230	BORDEN	230	#1	1	4	793	Amps	EMERGENCY	1023	128.9	1084	136.7	7.7
BORDEN	230	STOREY 1	230	#1	1	75	793	Amps	EMERGENCY	1030	129.8	1091.1	137.6	7.7
STOREY 1	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	1029	129.7	1090.4	137.5	7.7
STOREY 1	230	BORDEN	230	#1	1	115	793	Amps	EMERGENCY	1055	133.1	1116.6	140.8	7.7
BORDEN	230	STOREY 1	230	#1	1	163	793	Amps	EMERGENCY	1043	131.5	1103.8	139.2	7.7
STOREY 1	230	BORDEN	230	#1	1	162	793	Amps	EMERGENCY	1043	131.5	1103.8	139.2	7.7
MELONES	230	COTTLE A	230	#1	1	1	850	Amps	EMERGENCY	868	102.1	933.4	109.8	7.7
STOREY 1	230	BORDEN	230	#1	1	379	793	Amps	EMERGENCY	1030	129.8	1090.8	137.5	7.7
STOREY 1	230	BORDEN	230	#1	1	378	793	Amps	EMERGENCY	1032	130.1	1092.6	137.7	7.7
BORDEN	230	STOREY 1	230	#1	1	13	793	Amps	EMERGENCY	1020	128.6	1080.9	136.3	7.7
BORDEN	230	STOREY 1	230	#1	1	14	793	Amps	EMERGENCY	1020	128.6	1080.9	136.3	7.7
STOREY 1	230	BORDEN	230	#1	1	429	793	Amps	EMERGENCY	1049	132.3	1109.9	139.9	7.7
BORDEN	230	STOREY 1	230	#1	1	38	793	Amps	EMERGENCY	1029	129.7	1089.8	137.4	7.7
STOREY 1	230	BORDEN	230	#1	1	27	793	Amps	EMERGENCY	1047	132	1107.6	139.6	7.7
STOREY 1	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	1067	134.5	1127.4	142.1	7.7
BORDEN	230	STOREY 1	230	#1	1	113	793	Amps	EMERGENCY	1042	131.4	1103.2	139.1	7.7
COTTLE A	230	BELLOTA	230	#1	1	1	850	Amps	EMERGENCY	800	94.1	864.9	101.8	7.7
STOREY 1	230	BORDEN	230	#1	1	431	793	Amps	EMERGENCY	1028	129.6	1088.9	137.3	7.7
BORDEN	230	STOREY 1	230	#1	1	117	793	Amps	EMERGENCY	1044	131.6	1104.7	139.3	7.6
STOREY 1	230	BORDEN	230	#1	1	299	793	Amps	EMERGENCY	1021	128.7	1081.2	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	292	793	Amps	EMERGENCY	1051	132.6	1112	140.2	7.6
STOREY 1	230	BORDEN	230	#1	1	355	793	Amps	EMERGENCY	1043	131.5	1104	139.2	7.6
STOREY 1	230	BORDEN	230	#1	1	158	793	Amps	EMERGENCY	1042	131.4	1102.4	139	7.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	BORDEN	230	#1	1	159	793	Amps	EMERGENCY	1042	131.4	1102.4	139	7.6
STOREY 1	230	BORDEN	230	#1	1	69	793	Amps	EMERGENCY	1024	129.1	1084.3	136.7	7.6
STOREY 1	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	1042	131.4	1102.4	139	7.6
STOREY 1	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	1042	131.3	1102.4	139	7.6
STOREY 1	230	BORDEN	230	#1	1	54	793	Amps	EMERGENCY	1044	131.6	1104.5	139.2	7.6
STOREY 1	230	BORDEN	230	#1	1	256	793	Amps	EMERGENCY	1044	131.7	1104.8	139.3	7.6
BORDEN	230	STOREY 1	230	#1	1	265	793	Amps	EMERGENCY	1031	129.9	1091	137.5	7.6
BORDEN	230	STOREY 1	230	#1	1	374	793	Amps	EMERGENCY	1042	131.3	1102	138.9	7.6
BORDEN	230	STOREY 1	230	#1	1	120	793	Amps	EMERGENCY	1021	128.7	1081.2	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	60	793	Amps	EMERGENCY	1025	129.2	1085.5	136.9	7.6
STOREY 1	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	1022	128.8	1082.2	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	40	793	Amps	EMERGENCY	1021	128.7	1081.1	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	66	793	Amps	EMERGENCY	1033	130.2	1093	137.8	7.6
BORDEN	230	STOREY 1	230	#1	1	119	793	Amps	EMERGENCY	1021	128.7	1080.9	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	45	793	Amps	EMERGENCY	1021	128.7	1081.4	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	361	793	Amps	EMERGENCY	1026	129.4	1086.6	137	7.6
STOREY 1	230	BORDEN	230	#1	1	91	793	Amps	EMERGENCY	1024	129	1083.9	136.7	7.6
STOREY 2	230	BORDEN	230	#1	1	152	793	Amps	EMERGENCY	944	119	1004.1	126.6	7.6
BORDEN	230	STOREY 1	230	#1	1	276	793	Amps	EMERGENCY	1020	128.6	1080.3	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	92	793	Amps	EMERGENCY	1021	128.7	1080.9	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	122	793	Amps	EMERGENCY	1021	128.7	1081.6	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	264	793	Amps	EMERGENCY	1023	129	1083.6	136.6	7.6
STOREY 1	230	BORDEN	230	#1	1	362	793	Amps	EMERGENCY	1021	128.7	1081.1	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	290	793	Amps	EMERGENCY	1026	129.4	1086.6	137	7.6
BORDEN	230	STOREY 1	230	#1	1	249	793	Amps	EMERGENCY	1028	129.5	1087.9	137.1	7.6
BORDEN	230	STOREY 1	230	#1	1	277	793	Amps	EMERGENCY	1020	128.6	1080.6	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	46	793	Amps	EMERGENCY	1023	129	1083.2	136.6	7.6
BORDEN	230	STOREY 1	230	#1	1	250	793	Amps	EMERGENCY	1026	129.4	1086.5	137	7.6
STOREY 1	230	BORDEN	230	#1	1	257	793	Amps	EMERGENCY	1027	129.4	1087	137	7.6
BORDEN	230	STOREY 1	230	#1	1	79	793	Amps	EMERGENCY	1027	129.4	1087.1	137	7.6
STOREY 1	230	BORDEN	230	#1	1	289	793	Amps	EMERGENCY	1024	129.1	1084.7	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	270	793	Amps	EMERGENCY	1021	128.8	1081.7	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	244	793	Amps	EMERGENCY	1025	129.2	1085.3	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	80	793	Amps	EMERGENCY	1021	128.7	1081.4	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	262	793	Amps	EMERGENCY	1025	129.2	1085.3	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	77	793	Amps	EMERGENCY	1022	128.8	1081.9	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	263	793	Amps	EMERGENCY	1023	129	1083.5	136.6	7.6
STOREY 1	230	BORDEN	230	#1	1	231	793	Amps	EMERGENCY	1020	128.6	1080.2	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	118	793	Amps	EMERGENCY	1041	131.2	1101	138.8	7.6
BORDEN	230	STOREY 1	230	#1	1	83	793	Amps	EMERGENCY	1022	128.8	1082.2	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	269	793	Amps	EMERGENCY	1021	128.7	1081	136.3	7.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	BORDEN	230	#1	1	32	793	Amps	EMERGENCY	1020	128.6	1080	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	273	793	Amps	EMERGENCY	1020	128.5	1079.8	136.1	7.6
BORDEN	230	STOREY 1	230	#1	1	297	793	Amps	EMERGENCY	1020	128.6	1080.4	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	1023	129	1083.3	136.6	7.6
STOREY 1	230	BORDEN	230	#1	1	242	793	Amps	EMERGENCY	1020	128.6	1080.5	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	243	793	Amps	EMERGENCY	1023	129	1083.3	136.6	7.6
BORDEN	230	STOREY 1	230	#1	1	295	793	Amps	EMERGENCY	1021	128.8	1081.6	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	245	793	Amps	EMERGENCY	1022	128.9	1082.4	136.5	7.6
BORDEN	230	STOREY 1	230	#1	1	266	793	Amps	EMERGENCY	1021	128.8	1081.7	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	226	793	Amps	EMERGENCY	1021	128.7	1081	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	246	793	Amps	EMERGENCY	1022	128.8	1081.9	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	261	793	Amps	EMERGENCY	1021	128.7	1081.3	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	52	793	Amps	EMERGENCY	1020	128.5	1079.8	136.1	7.6
BORDEN	230	STOREY 1	230	#1	1	376	793	Amps	EMERGENCY	1021	128.7	1081.1	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	84	793	Amps	EMERGENCY	1020	128.6	1080.5	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	74	793	Amps	EMERGENCY	1022	128.9	1082.4	136.5	7.6
STOREY 1	230	BORDEN	230	#1	1	50	793	Amps	EMERGENCY	1020	128.5	1079.9	136.1	7.6
STOREY 1	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	1022	128.9	1082.4	136.5	7.6
STOREY 1	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	1020	128.6	1080.7	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	48	793	Amps	EMERGENCY	1021	128.7	1081.4	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	1021	128.7	1080.7	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	240	793	Amps	EMERGENCY	1020	128.6	1080.4	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	1030	129.8	1089.8	137.4	7.6
STOREY 1	230	BORDEN	230	#1	1	291	793	Amps	EMERGENCY	1021	128.7	1081.3	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	109	793	Amps	EMERGENCY	1031	129.9	1090.8	137.5	7.6
STOREY 1	230	BORDEN	230	#1	1	275	793	Amps	EMERGENCY	1021	128.8	1081.6	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	253	793	Amps	EMERGENCY	1020	128.6	1080.5	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	274	793	Amps	EMERGENCY	1020	128.6	1080	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	1030	129.9	1090.1	137.4	7.6
BORDEN	230	STOREY 1	230	#1	1	124	793	Amps	EMERGENCY	1019	128.4	1078.9	136	7.6
STOREY 2	230	BORDEN	230	#1	1	2	793	Amps	EMERGENCY	925	116.6	985	124.2	7.6
BORDEN	230	STOREY 1	230	#1	1	360	793	Amps	EMERGENCY	1025	129.3	1085.3	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	285	793	Amps	EMERGENCY	1021	128.7	1081.1	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	237	793	Amps	EMERGENCY	1040	131.1	1099.7	138.6	7.6
STOREY 1	230	BORDEN	230	#1	1	280	793	Amps	EMERGENCY	1037	130.7	1096.7	138.3	7.5
BORDEN	230	STOREY 1	230	#1	1	281	793	Amps	EMERGENCY	1037	130.8	1097.1	138.3	7.5
STOREY 2	230	BORDEN	230	#1	1	171	793	Amps	EMERGENCY	902	113.7	961.2	121.2	7.5
STOREY 2	230	WILSON	230	#1	1	152	793	Amps	EMERGENCY	856	107.9	915.9	115.5	7.5
STOREY 1	230	WILSON	230	#1	1	420	851	Amps	EMERGENCY	992	116.5	1055.6	124.1	7.5
STOREY 1	230	WILSON	230	#1	1	416	851	Amps	EMERGENCY	1030	121	1093.8	128.5	7.5
STOREY 1	230	WILSON	230	#1	1	428	851	Amps	EMERGENCY	971	114.1	1034.9	121.6	7.5

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	28	851	Amps	EMERGENCY	967	113.7	1031.4	121.2	7.5
STOREY 1	230	WILSON	230	#1	1	427	851	Amps	EMERGENCY	1073	126.1	1137.1	133.6	7.5
STOREY 1	230	BORDEN	230	#1	1	233	793	Amps	EMERGENCY	1026	129.3	1085	136.8	7.5
BORDEN	230	STOREY 1	230	#1	1	235	793	Amps	EMERGENCY	1028	129.5	1087.1	137	7.5
STOREY 2	230	WILSON	230	#1	1	2	793	Amps	EMERGENCY	837	105.6	896.9	113.1	7.5
STOREY 1	230	WILSON	230	#1	1	372	851	Amps	EMERGENCY	1065	125.2	1128.7	132.6	7.5
STOREY 1	230	WILSON	230	#1	1	107	851	Amps	EMERGENCY	990	116.4	1053.9	123.9	7.5
STOREY 1	230	WILSON	230	#1	1	153	851	Amps	EMERGENCY	959	112.7	1022.5	120.2	7.5
STOREY 1	230	WILSON	230	#1	1	365	851	Amps	EMERGENCY	984	115.6	1047.2	123.1	7.5
STOREY 1	230	WILSON	230	#1	1	160	851	Amps	EMERGENCY	1022	120.1	1085.3	127.5	7.5
STOREY 1	230	WILSON	230	#1	1	373	851	Amps	EMERGENCY	963	113.2	1026.5	120.6	7.5
STOREY 1	230	WILSON	230	#1	1	196	851	Amps	EMERGENCY	1046	122.9	1109.3	130.4	7.5
STOREY 1	230	WILSON	230	#1	1	3	851	Amps	EMERGENCY	937	110.1	999.9	117.5	7.5
STOREY 1	230	WILSON	230	#1	1	25	851	Amps	EMERGENCY	960	112.8	1023.4	120.3	7.5
STOREY 1	230	WILSON	230	#1	1	208	851	Amps	EMERGENCY	960	112.8	1023.4	120.3	7.5
STOREY 1	230	WILSON	230	#1	1	106	851	Amps	EMERGENCY	971	114.1	1034.6	121.6	7.5
STOREY 1	230	WILSON	230	#1	1	189	851	Amps	EMERGENCY	961	113	1024.8	120.4	7.5
STOREY 1	230	WILSON	230	#1	1	197	851	Amps	EMERGENCY	944	110.9	1007.2	118.4	7.5
STOREY 1	230	WILSON	230	#1	1	417	851	Amps	EMERGENCY	979	115	1041.9	122.4	7.5
STOREY 1	230	WILSON	230	#1	1	11	851	Amps	EMERGENCY	1003	117.8	1066	125.3	7.4
STOREY 2	230	WILSON	230	#1	1	171	793	Amps	EMERGENCY	814	102.7	873.4	110.1	7.4
STOREY 1	230	WILSON	230	#1	1	436	851	Amps	EMERGENCY	953	112	1016.5	119.5	7.4
STOREY 1	230	WILSON	230	#1	1	22	851	Amps	EMERGENCY	941	110.6	1004	118	7.4
STOREY 1	230	WILSON	230	#1	1	389	851	Amps	EMERGENCY	1012	118.9	1075.2	126.4	7.4
STOREY 1	230	WILSON	230	#1	1	382	851	Amps	EMERGENCY	932	109.5	994.7	116.9	7.4
STOREY 1	230	WILSON	230	#1	1	155	851	Amps	EMERGENCY	960	112.8	1022.8	120.2	7.4
STOREY 1	230	WILSON	230	#1	1	179	851	Amps	EMERGENCY	969	113.9	1032	121.3	7.4
STOREY 1	230	WILSON	230	#1	1	161	851	Amps	EMERGENCY	970	114	1033.4	121.4	7.4
STOREY 1	230	WILSON	230	#1	1	169	851	Amps	EMERGENCY	961	112.9	1023.8	120.3	7.4
STOREY 1	230	WILSON	230	#1	1	435	851	Amps	EMERGENCY	955	112.3	1018.2	119.7	7.4
STOREY 1	230	WILSON	230	#1	1	381	851	Amps	EMERGENCY	945	111.1	1008.2	118.5	7.4
STOREY 1	230	WILSON	230	#1	1	5	851	Amps	EMERGENCY	937	110.1	1000.1	117.5	7.4
STOREY 1	230	WILSON	230	#1	1	156	851	Amps	EMERGENCY	959	112.6	1021.4	120	7.4
STOREY 1	230	WILSON	230	#1	1	12	851	Amps	EMERGENCY	948	111.4	1011	118.8	7.4
STOREY 1	230	WILSON	230	#1	1	157	851	Amps	EMERGENCY	955	112.2	1017.5	119.6	7.4
STOREY 1	230	WILSON	230	#1	1	62	851	Amps	EMERGENCY	938	110.3	1001.1	117.6	7.4
STOREY 1	230	WILSON	230	#1	1	207	851	Amps	EMERGENCY	923	108.4	985.4	115.8	7.4
STOREY 1	230	WILSON	230	#1	1	6	851	Amps	EMERGENCY	936	110	998.7	117.4	7.4
STOREY 1	230	WILSON	230	#1	1	7	851	Amps	EMERGENCY	932	109.6	994.8	116.9	7.4
STOREY 1	230	WILSON	230	#1	1	380	851	Amps	EMERGENCY	947	111.3	1009.9	118.7	7.3
STOREY 1	230	WILSON	230	#1	1	206	851	Amps	EMERGENCY	925	108.7	987	116	7.3

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	41	851	Amps	EMERGENCY	948	111.4	1010	118.7	7.3
STOREY 1	230	WILSON	230	#1	1	70	851	Amps	EMERGENCY	937	110.2	999.4	117.4	7.3
STOREY 1	230	WILSON	230	#1	1	154	851	Amps	EMERGENCY	948	111.4	1009.9	118.7	7.3
STOREY 1	230	WILSON	230	#1	1	114	851	Amps	EMERGENCY	962	113	1023.6	120.3	7.3
STOREY 1	230	WILSON	230	#1	1	112	851	Amps	EMERGENCY	947	111.3	1009.2	118.6	7.3
STOREY 1	230	WILSON	230	#1	1	418	851	Amps	EMERGENCY	953	112	1015.3	119.3	7.3
STOREY 1	230	WILSON	230	#1	1	419	851	Amps	EMERGENCY	953	112	1015.3	119.3	7.3
STOREY 1	230	WILSON	230	#1	1	434	851	Amps	EMERGENCY	941	110.5	1002.3	117.8	7.3
STOREY 1	230	WILSON	230	#1	1	4	851	Amps	EMERGENCY	925	108.7	987.1	116	7.3
STOREY 1	230	WILSON	230	#1	1	433	851	Amps	EMERGENCY	942	110.7	1004.1	118	7.3
STOREY 1	230	WILSON	230	#1	1	111	851	Amps	EMERGENCY	951	111.7	1012.6	119	7.3
STOREY 1	230	WILSON	230	#1	1	75	851	Amps	EMERGENCY	933	109.6	994.4	116.9	7.2
STOREY 1	230	WILSON	230	#1	1	37	851	Amps	EMERGENCY	932	109.5	993.6	116.8	7.2
STOREY 1	230	WILSON	230	#1	1	115	851	Amps	EMERGENCY	958	112.6	1019.9	119.9	7.2
STOREY 1	230	WILSON	230	#1	1	162	851	Amps	EMERGENCY	946	111.1	1007	118.3	7.2
STOREY 1	230	WILSON	230	#1	1	163	851	Amps	EMERGENCY	946	111.1	1007	118.3	7.2
STOREY 1	230	WILSON	230	#1	1	379	851	Amps	EMERGENCY	933	109.6	994	116.8	7.2
STOREY 1	230	WILSON	230	#1	1	378	851	Amps	EMERGENCY	934	109.8	995.8	117	7.2
STOREY 1	230	WILSON	230	#1	1	13	851	Amps	EMERGENCY	923	108.4	984.1	115.6	7.2
STOREY 1	230	WILSON	230	#1	1	14	851	Amps	EMERGENCY	923	108.4	984.1	115.6	7.2
STOREY 1	230	WILSON	230	#1	1	38	851	Amps	EMERGENCY	932	109.5	993	116.7	7.2
STOREY 1	230	WILSON	230	#1	1	429	851	Amps	EMERGENCY	952	111.9	1013.4	119.1	7.2
STOREY 1	230	WILSON	230	#1	1	27	851	Amps	EMERGENCY	950	111.6	1011	118.8	7.2
STOREY 1	230	WILSON	230	#1	1	116	851	Amps	EMERGENCY	970	114	1031	121.2	7.2
STOREY 1	230	WILSON	230	#1	1	113	851	Amps	EMERGENCY	946	111.1	1006.6	118.3	7.2
STOREY 1	230	WILSON	230	#1	1	299	851	Amps	EMERGENCY	923	108.5	984.4	115.7	7.2
STOREY 1	230	WILSON	230	#1	1	431	851	Amps	EMERGENCY	932	109.5	992.5	116.6	7.2
STOREY 1	230	WILSON	230	#1	1	117	851	Amps	EMERGENCY	947	111.3	1008	118.5	7.2
STOREY 1	230	WILSON	230	#1	1	287	851	Amps	EMERGENCY	922	108.3	982.9	115.5	7.2
STOREY 1	230	WILSON	230	#1	1	292	851	Amps	EMERGENCY	955	112.2	1015.5	119.3	7.2
STOREY 1	230	WILSON	230	#1	1	69	851	Amps	EMERGENCY	927	108.9	987.7	116.1	7.2
STOREY 1	230	WILSON	230	#1	1	158	851	Amps	EMERGENCY	945	111	1005.7	118.2	7.2
STOREY 1	230	WILSON	230	#1	1	159	851	Amps	EMERGENCY	945	111	1005.7	118.2	7.2
STOREY 1	230	WILSON	230	#1	1	355	851	Amps	EMERGENCY	946	111.2	1007.2	118.4	7.2
STOREY 1	230	WILSON	230	#1	1	108	851	Amps	EMERGENCY	945	111	1005.6	118.2	7.2
STOREY 1	230	WILSON	230	#1	1	54	851	Amps	EMERGENCY	947	111.3	1007.9	118.5	7.2
STOREY 1	230	WILSON	230	#1	1	81	851	Amps	EMERGENCY	945	111	1005.6	118.2	7.2
STOREY 1	230	WILSON	230	#1	1	256	851	Amps	EMERGENCY	947	111.3	1008.2	118.5	7.2
STOREY 1	230	WILSON	230	#1	1	265	851	Amps	EMERGENCY	933	109.7	994.3	116.8	7.1
STOREY 1	230	WILSON	230	#1	1	120	851	Amps	EMERGENCY	924	108.6	984.5	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	60	851	Amps	EMERGENCY	928	109.1	988.7	116.2	7.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	374	851	Amps	EMERGENCY	944	111	1005.2	118.1	7.1
STOREY 1	230	WILSON	230	#1	1	47	851	Amps	EMERGENCY	925	108.7	985.4	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	40	851	Amps	EMERGENCY	924	108.5	984.3	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	45	851	Amps	EMERGENCY	924	108.6	984.6	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	66	851	Amps	EMERGENCY	936	109.9	996.2	117.1	7.1
STOREY 1	230	WILSON	230	#1	1	361	851	Amps	EMERGENCY	929	109.2	989.8	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	276	851	Amps	EMERGENCY	923	108.4	983.5	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	119	851	Amps	EMERGENCY	923	108.5	984.2	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	91	851	Amps	EMERGENCY	926	108.9	987.2	116	7.1
STOREY 1	230	WILSON	230	#1	1	264	851	Amps	EMERGENCY	926	108.8	986.8	116	7.1
STOREY 1	230	WILSON	230	#1	1	92	851	Amps	EMERGENCY	923	108.5	984.2	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	249	851	Amps	EMERGENCY	930	109.3	991.1	116.5	7.1
STOREY 1	230	WILSON	230	#1	1	290	851	Amps	EMERGENCY	929	109.2	989.8	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	257	851	Amps	EMERGENCY	930	109.2	990.3	116.4	7.1
STOREY 1	230	WILSON	230	#1	1	362	851	Amps	EMERGENCY	924	108.5	984.3	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	122	851	Amps	EMERGENCY	924	108.6	984.7	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	250	851	Amps	EMERGENCY	929	109.2	989.7	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	270	851	Amps	EMERGENCY	924	108.6	984.8	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	277	851	Amps	EMERGENCY	923	108.5	983.8	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	46	851	Amps	EMERGENCY	926	108.8	986.4	115.9	7.1
STOREY 1	230	WILSON	230	#1	1	262	851	Amps	EMERGENCY	928	109	988.5	116.2	7.1
STOREY 1	230	WILSON	230	#1	1	79	851	Amps	EMERGENCY	930	109.2	990.2	116.4	7.1
STOREY 1	230	WILSON	230	#1	1	77	851	Amps	EMERGENCY	924	108.6	985	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	80	851	Amps	EMERGENCY	924	108.6	984.5	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	231	851	Amps	EMERGENCY	923	108.4	983.3	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	244	851	Amps	EMERGENCY	928	109	988.5	116.2	7.1
STOREY 1	230	WILSON	230	#1	1	263	851	Amps	EMERGENCY	926	108.8	986.7	116	7.1
STOREY 1	230	WILSON	230	#1	1	289	851	Amps	EMERGENCY	927	109	987.9	116.1	7.1
STOREY 1	230	WILSON	230	#1	1	32	851	Amps	EMERGENCY	923	108.4	983.2	115.5	7.1
STOREY 1	230	WILSON	230	#1	1	59	851	Amps	EMERGENCY	926	108.8	986.5	115.9	7.1
STOREY 1	230	WILSON	230	#1	1	83	851	Amps	EMERGENCY	925	108.7	985.4	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	243	851	Amps	EMERGENCY	926	108.8	986.5	115.9	7.1
STOREY 1	230	WILSON	230	#1	1	269	851	Amps	EMERGENCY	924	108.5	984.2	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	273	851	Amps	EMERGENCY	922	108.4	983	115.5	7.1
STOREY 1	230	WILSON	230	#1	1	242	851	Amps	EMERGENCY	923	108.5	983.7	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	245	851	Amps	EMERGENCY	925	108.7	985.6	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	266	851	Amps	EMERGENCY	924	108.6	984.9	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	297	851	Amps	EMERGENCY	923	108.5	983.6	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	226	851	Amps	EMERGENCY	924	108.5	984.1	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	246	851	Amps	EMERGENCY	924	108.6	985	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	295	851	Amps	EMERGENCY	924	108.6	984.8	115.7	7.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	50	851	Amps	EMERGENCY	922	108.4	983	115.5	7.1
STOREY 1	230	WILSON	230	#1	1	52	851	Amps	EMERGENCY	922	108.4	983	115.5	7.1
STOREY 1	230	WILSON	230	#1	1	84	851	Amps	EMERGENCY	923	108.5	983.7	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	118	851	Amps	EMERGENCY	944	110.9	1004.2	118	7.1
STOREY 1	230	WILSON	230	#1	1	261	851	Amps	EMERGENCY	924	108.6	984.5	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	73	851	Amps	EMERGENCY	925	108.7	985.6	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	74	851	Amps	EMERGENCY	925	108.7	985.6	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	72	851	Amps	EMERGENCY	923	108.5	983.9	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	240	851	Amps	EMERGENCY	923	108.5	983.6	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	376	851	Amps	EMERGENCY	924	108.5	984.2	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	48	851	Amps	EMERGENCY	924	108.6	984.6	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	71	851	Amps	EMERGENCY	923	108.5	983.9	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	110	851	Amps	EMERGENCY	932	109.6	993	116.7	7.1
STOREY 1	230	BORDEN	230	#1	1	432	793	Amps	EMERGENCY	1074	135.4	1130.3	142.5	7.1
STOREY 1	230	WILSON	230	#1	1	109	851	Amps	EMERGENCY	933	109.7	993.9	116.8	7.1
STOREY 1	230	WILSON	230	#1	1	275	851	Amps	EMERGENCY	924	108.6	984.7	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	291	851	Amps	EMERGENCY	924	108.6	984.5	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	253	851	Amps	EMERGENCY	923	108.5	983.7	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	274	851	Amps	EMERGENCY	923	108.4	983.2	115.5	7.1
STOREY 1	230	WILSON	230	#1	1	58	851	Amps	EMERGENCY	933	109.6	993.4	116.7	7.1
STOREY 1	230	WILSON	230	#1	1	124	851	Amps	EMERGENCY	922	108.3	982.1	115.4	7.1
STOREY 1	230	WILSON	230	#1	1	360	851	Amps	EMERGENCY	928	109.1	988.6	116.2	7.1
STOREY 1	230	WILSON	230	#1	1	285	851	Amps	EMERGENCY	924	108.6	984.2	115.7	7.1
STOREY 1	230	BORDEN	230	#1	1	377	793	Amps	EMERGENCY	1066	134.4	1122.2	141.5	7.1
STOREY 1	230	WILSON	230	#1	1	237	851	Amps	EMERGENCY	943	110.8	1003.1	117.9	7.1
STOREY 1	230	WILSON	230	#1	1	280	851	Amps	EMERGENCY	940	110.4	999.7	117.5	7.1
STOREY 1	230	BORDEN	230	#1	1	203	793	Amps	EMERGENCY	1044	131.6	1100.2	138.7	7.1
STOREY 1	230	WILSON	230	#1	1	281	851	Amps	EMERGENCY	940	110.5	1000	117.5	7.1
STOREY 1	230	WILSON	230	#1	1	235	851	Amps	EMERGENCY	930	109.3	990.3	116.4	7
STOREY 1	230	WILSON	230	#1	1	233	851	Amps	EMERGENCY	928	109.1	988.2	116.1	7
LE GRAND	115	WILSON A	115	#1	1	128	512	Amps	EMERGENCY	559	109.3	595.4	116.3	7
STOREY 2	230	BORDEN	230	#1	1	28	793	Amps	EMERGENCY	908	114.5	963.2	121.4	6.9
STOREY 2	230	BORDEN	230	#1	1	420	793	Amps	EMERGENCY	930	117.2	984.4	124.1	6.9
STOREY 2	230	BORDEN	230	#1	1	416	793	Amps	EMERGENCY	962	121.3	1016.9	128.2	6.9
STOREY 2	230	BORDEN	230	#1	1	428	793	Amps	EMERGENCY	912	115	966.7	121.9	6.9
STOREY 2	230	BORDEN	230	#1	1	427	793	Amps	EMERGENCY	999	126	1053.7	132.8	6.9
STOREY 2	230	BORDEN	230	#1	1	372	793	Amps	EMERGENCY	992	125	1046.3	131.9	6.9
STOREY 2	230	BORDEN	230	#1	1	107	793	Amps	EMERGENCY	928	117	982.4	123.9	6.9
STOREY 2	230	BORDEN	230	#1	1	153	793	Amps	EMERGENCY	901	113.7	955.9	120.5	6.9
STOREY 2	230	BORDEN	230	#1	1	365	793	Amps	EMERGENCY	923	116.3	976.9	123.2	6.9
STOREY 2	230	BORDEN	230	#1	1	160	793	Amps	EMERGENCY	955	120.4	1009.4	127.3	6.9

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	373	793	Amps	EMERGENCY	905	114.1	959.2	120.9	6.9
STOREY 2	230	BORDEN	230	#1	1	106	793	Amps	EMERGENCY	912	114.9	966	121.8	6.8
STOREY 2	230	BORDEN	230	#1	1	3	793	Amps	EMERGENCY	882	111.2	936.6	118.1	6.8
STOREY 2	230	BORDEN	230	#1	1	25	793	Amps	EMERGENCY	902	113.7	956.4	120.6	6.8
STOREY 2	230	BORDEN	230	#1	1	196	793	Amps	EMERGENCY	975	123	1029.7	129.8	6.8
STOREY 2	230	BORDEN	230	#1	1	208	793	Amps	EMERGENCY	902	113.7	956.4	120.6	6.8
STOREY 2	230	BORDEN	230	#1	1	189	793	Amps	EMERGENCY	904	113.9	957.8	120.8	6.8
LE GRAND	115	WILSON A	115	#1	1	16	512	Amps	EMERGENCY	536	104.6	570.8	111.5	6.8
STOREY 2	230	BORDEN	230	#1	1	197	793	Amps	EMERGENCY	889	112	942.8	118.9	6.8
STOREY 2	230	BORDEN	230	#1	1	11	793	Amps	EMERGENCY	939	118.4	992.9	125.2	6.8
STOREY 2	230	BORDEN	230	#1	1	417	793	Amps	EMERGENCY	919	115.8	972.7	122.6	6.8
STOREY 2	230	WILSON	230	#1	1	416	793	Amps	EMERGENCY	874	110.2	928.4	117	6.8
STOREY 2	230	WILSON	230	#1	1	420	793	Amps	EMERGENCY	842	106.1	896.1	113	6.8
STOREY 2	230	WILSON	230	#1	1	428	793	Amps	EMERGENCY	824	103.9	878.6	110.8	6.8
STOREY 2	230	WILSON	230	#1	1	427	793	Amps	EMERGENCY	911	114.9	965.1	121.7	6.8
STOREY 2	230	WILSON	230	#1	1	28	793	Amps	EMERGENCY	822	103.6	875.8	110.4	6.8
STOREY 2	230	BORDEN	230	#1	1	436	793	Amps	EMERGENCY	897	113.1	951	119.9	6.8
STOREY 2	230	BORDEN	230	#1	1	22	793	Amps	EMERGENCY	886	111.7	939.8	118.5	6.8
STOREY 2	230	BORDEN	230	#1	1	389	793	Amps	EMERGENCY	947	119.3	1000.6	126.1	6.8
STOREY 2	230	BORDEN	230	#1	1	382	793	Amps	EMERGENCY	878	110.7	932.1	117.5	6.8
STOREY 2	230	BORDEN	230	#1	1	155	793	Amps	EMERGENCY	902	113.7	956.1	120.5	6.8
STOREY 2	230	WILSON	230	#1	1	372	793	Amps	EMERGENCY	904	114	958.1	120.8	6.8
STOREY 2	230	BORDEN	230	#1	1	179	793	Amps	EMERGENCY	910	114.7	963.9	121.5	6.8
STOREY 2	230	BORDEN	230	#1	1	161	793	Amps	EMERGENCY	911	114.9	965.2	121.7	6.8
STOREY 2	230	WILSON	230	#1	1	107	793	Amps	EMERGENCY	841	106	894.8	112.8	6.8
STOREY 2	230	WILSON	230	#1	1	153	793	Amps	EMERGENCY	814	102.7	868.2	109.4	6.8
STOREY 2	230	WILSON	230	#1	1	365	793	Amps	EMERGENCY	835	105.3	889.1	112.1	6.8
STOREY 2	230	WILSON	230	#1	1	160	793	Amps	EMERGENCY	868	109.4	921.4	116.2	6.8
STOREY 2	230	BORDEN	230	#1	1	169	793	Amps	EMERGENCY	903	113.9	956.9	120.6	6.8
STOREY 2	230	WILSON	230	#1	1	373	793	Amps	EMERGENCY	818	103.1	871.5	109.9	6.8
STOREY 2	230	BORDEN	230	#1	1	381	793	Amps	EMERGENCY	890	112.2	943.6	119	6.8
STOREY 2	230	BORDEN	230	#1	1	5	793	Amps	EMERGENCY	883	111.3	936.7	118.1	6.8
STOREY 2	230	BORDEN	230	#1	1	435	793	Amps	EMERGENCY	899	113.3	952.4	120.1	6.8
STOREY 2	230	BORDEN	230	#1	1	156	793	Amps	EMERGENCY	901	113.6	954.9	120.4	6.8
STOREY 2	230	BORDEN	230	#1	1	12	793	Amps	EMERGENCY	892	112.5	946	119.3	6.8
STOREY 2	230	BORDEN	230	#1	1	157	793	Amps	EMERGENCY	898	113.2	951.5	120	6.8
STOREY 2	230	WILSON	230	#1	1	196	793	Amps	EMERGENCY	888	112	941.7	118.7	6.8
STOREY 2	230	WILSON	230	#1	1	25	793	Amps	EMERGENCY	815	102.8	869	109.6	6.8
STOREY 2	230	WILSON	230	#1	1	208	793	Amps	EMERGENCY	815	102.8	869	109.6	6.8
STOREY 2	230	WILSON	230	#1	1	3	793	Amps	EMERGENCY	795	100.3	849	107	6.8
STOREY 2	230	WILSON	230	#1	1	106	793	Amps	EMERGENCY	825	104	878.5	110.8	6.8

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	62	793	Amps	EMERGENCY	884	111.4	937.6	118.2	6.8
STOREY 2	230	WILSON	230	#1	1	189	793	Amps	EMERGENCY	817	102.9	870.2	109.7	6.8
STOREY 2	230	WILSON	230	#1	1	417	793	Amps	EMERGENCY	831	104.7	884.5	111.5	6.8
STOREY 2	230	BORDEN	230	#1	1	207	793	Amps	EMERGENCY	871	109.7	924.1	116.5	6.8
STOREY 2	230	WILSON	230	#1	1	197	793	Amps	EMERGENCY	802	101.1	855.2	107.8	6.8
STOREY 2	230	BORDEN	230	#1	1	6	793	Amps	EMERGENCY	882	111.2	935.5	117.9	6.8
STOREY 2	230	WILSON	230	#1	1	11	793	Amps	EMERGENCY	851	107.3	905	114.1	6.8
STOREY 2	230	BORDEN	230	#1	1	7	793	Amps	EMERGENCY	879	110.8	932.2	117.5	6.8
STOREY 2	230	WILSON	230	#1	1	436	793	Amps	EMERGENCY	809	102	863	108.8	6.7
STOREY 2	230	BORDEN	230	#1	1	380	793	Amps	EMERGENCY	892	112.4	945	119.1	6.7
STOREY 2	230	WILSON	230	#1	1	22	793	Amps	EMERGENCY	799	100.8	852.6	107.5	6.7
STOREY 2	230	WILSON	230	#1	1	389	793	Amps	EMERGENCY	859	108.4	912.8	115.1	6.7
STOREY 2	230	WILSON	230	#1	1	382	793	Amps	EMERGENCY	791	99.8	844.7	106.5	6.7
STOREY 2	230	WILSON	230	#1	1	155	793	Amps	EMERGENCY	815	102.8	868.4	109.5	6.7
STOREY 2	230	BORDEN	230	#1	1	206	793	Amps	EMERGENCY	872	110	925.5	116.7	6.7
STOREY 2	230	WILSON	230	#1	1	179	793	Amps	EMERGENCY	823	103.8	876.3	110.5	6.7
STOREY 2	230	BORDEN	230	#1	1	41	793	Amps	EMERGENCY	892	112.4	945.2	119.2	6.7
STOREY 2	230	WILSON	230	#1	1	161	793	Amps	EMERGENCY	824	103.9	877.4	110.6	6.7
STOREY 2	230	WILSON	230	#1	1	169	793	Amps	EMERGENCY	816	102.9	869.2	109.6	6.7
STOREY 2	230	WILSON	230	#1	1	435	793	Amps	EMERGENCY	811	102.3	864.3	109	6.7
STOREY 2	230	WILSON	230	#1	1	381	793	Amps	EMERGENCY	803	101.2	856.1	107.9	6.7
STOREY 2	230	WILSON	230	#1	1	156	793	Amps	EMERGENCY	814	102.6	867.2	109.3	6.7
STOREY 2	230	WILSON	230	#1	1	5	793	Amps	EMERGENCY	796	100.4	849.2	107.1	6.7
STOREY 2	230	WILSON	230	#1	1	12	793	Amps	EMERGENCY	805	101.5	858.4	108.2	6.7
STOREY 2	230	WILSON	230	#1	1	157	793	Amps	EMERGENCY	811	102.2	863.9	108.9	6.7
STOREY 2	230	BORDEN	230	#1	1	70	793	Amps	EMERGENCY	883	111.3	936.1	118	6.7
STOREY 2	230	WILSON	230	#1	1	62	793	Amps	EMERGENCY	797	100.5	850	107.2	6.7
STOREY 2	230	WILSON	230	#1	1	207	793	Amps	EMERGENCY	784	98.8	836.7	105.5	6.7
STOREY 2	230	WILSON	230	#1	1	6	793	Amps	EMERGENCY	795	100.2	848	106.9	6.7
STOREY 2	230	BORDEN	230	#1	1	154	793	Amps	EMERGENCY	892	112.5	945.1	119.2	6.7
STOREY 2	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	904	113.9	956.8	120.6	6.7
STOREY 2	230	BORDEN	230	#1	1	112	793	Amps	EMERGENCY	891	112.4	944.4	119.1	6.7
STOREY 2	230	WILSON	230	#1	1	7	793	Amps	EMERGENCY	792	99.8	844.7	106.5	6.7
STOREY 1	230	WILSON	230	#1	1	432	851	Amps	EMERGENCY	977	114.8	1033.9	121.5	6.7
STOREY 2	230	BORDEN	230	#1	1	418	793	Amps	EMERGENCY	897	113.1	949.9	119.8	6.7
STOREY 2	230	BORDEN	230	#1	1	419	793	Amps	EMERGENCY	897	113.1	949.9	119.8	6.7
STOREY 2	230	WILSON	230	#1	1	380	793	Amps	EMERGENCY	805	101.4	857.4	108.1	6.7
STOREY 2	230	BORDEN	230	#1	1	4	793	Amps	EMERGENCY	873	110	925.7	116.7	6.7
STOREY 2	230	BORDEN	230	#1	1	111	793	Amps	EMERGENCY	895	112.8	947.4	119.4	6.7
STOREY 2	230	BORDEN	230	#1	1	434	793	Amps	EMERGENCY	886	111.7	938.9	118.4	6.7
STOREY 2	230	BORDEN	230	#1	1	433	793	Amps	EMERGENCY	888	111.9	940.4	118.6	6.7

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	377	851	Amps	EMERGENCY	969	113.9	1025.5	120.5	6.7
STOREY 2	230	WILSON	230	#1	1	206	793	Amps	EMERGENCY	785	99	838.1	105.7	6.6
STOREY 2	230	BORDEN	230	#1	1	75	793	Amps	EMERGENCY	879	110.8	931.8	117.5	6.6
STOREY 2	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	879	110.8	931.2	117.4	6.6
STOREY 2	230	WILSON	230	#1	1	41	793	Amps	EMERGENCY	805	101.5	857.6	108.1	6.6
STOREY 2	230	BORDEN	230	#1	1	115	793	Amps	EMERGENCY	901	113.6	953.7	120.2	6.6
STOREY 1	230	WILSON	230	#1	1	203	851	Amps	EMERGENCY	947	111.3	1003.4	117.9	6.6
STOREY 2	230	BORDEN	230	#1	1	162	793	Amps	EMERGENCY	890	112.2	942.6	118.8	6.6
STOREY 2	230	BORDEN	230	#1	1	163	793	Amps	EMERGENCY	890	112.2	942.6	118.8	6.6
STOREY 2	230	BORDEN	230	#1	1	379	793	Amps	EMERGENCY	879	110.8	931.5	117.4	6.6
STOREY 2	230	BORDEN	230	#1	1	378	793	Amps	EMERGENCY	881	111	933.1	117.6	6.6
STOREY 2	230	WILSON	230	#1	1	70	793	Amps	EMERGENCY	796	100.4	848.6	107	6.6
STOREY 2	230	BORDEN	230	#1	1	13	793	Amps	EMERGENCY	871	109.8	923	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	14	793	Amps	EMERGENCY	871	109.8	923	116.4	6.6
STOREY 2	230	WILSON	230	#1	1	154	793	Amps	EMERGENCY	805	101.5	857.5	108.1	6.6
STOREY 2	230	WILSON	230	#1	1	114	793	Amps	EMERGENCY	817	103	869	109.6	6.6
STOREY 2	230	WILSON	230	#1	1	112	793	Amps	EMERGENCY	805	101.4	856.9	108	6.6
STOREY 2	230	WILSON	230	#1	1	418	793	Amps	EMERGENCY	810	102.1	861.9	108.7	6.6
STOREY 2	230	WILSON	230	#1	1	419	793	Amps	EMERGENCY	810	102.1	861.9	108.7	6.6
STOREY 2	230	BORDEN	230	#1	1	38	793	Amps	EMERGENCY	878	110.7	930.6	117.3	6.6
STOREY 2	230	BORDEN	230	#1	1	429	793	Amps	EMERGENCY	896	113	948.4	119.6	6.6
STOREY 2	230	BORDEN	230	#1	1	27	793	Amps	EMERGENCY	894	112.7	946.1	119.3	6.6
STOREY 2	230	WILSON	230	#1	1	434	793	Amps	EMERGENCY	799	100.7	850.9	107.3	6.6
STOREY 2	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	911	114.8	962.9	121.4	6.6
STOREY 2	230	WILSON	230	#1	1	433	793	Amps	EMERGENCY	800	100.9	852.4	107.5	6.6
STOREY 2	230	WILSON	230	#1	1	4	793	Amps	EMERGENCY	786	99.1	838.2	105.7	6.6
STOREY 2	230	WILSON	230	#1	1	111	793	Amps	EMERGENCY	808	101.8	859.7	108.4	6.6
STOREY 2	230	BORDEN	230	#1	1	113	793	Amps	EMERGENCY	890	112.2	942.4	118.8	6.6
STOREY 2	230	BORDEN	230	#1	1	299	793	Amps	EMERGENCY	871	109.8	923.3	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	117	793	Amps	EMERGENCY	891	112.4	943.4	118.9	6.6
STOREY 2	230	BORDEN	230	#1	1	431	793	Amps	EMERGENCY	878	110.7	930.4	117.3	6.6
STOREY 2	230	WILSON	230	#1	1	75	793	Amps	EMERGENCY	792	99.9	844.3	106.4	6.6
STOREY 2	230	BORDEN	230	#1	1	292	793	Amps	EMERGENCY	898	113.2	949.7	119.7	6.6
STOREY 2	230	WILSON	230	#1	1	37	793	Amps	EMERGENCY	792	99.8	843.7	106.4	6.6
STOREY 2	230	BORDEN	230	#1	1	158	793	Amps	EMERGENCY	889	112.1	941.4	118.7	6.6
STOREY 2	230	BORDEN	230	#1	1	159	793	Amps	EMERGENCY	889	112.1	941.4	118.7	6.6
STOREY 2	230	BORDEN	230	#1	1	69	793	Amps	EMERGENCY	874	110.2	926.2	116.8	6.6
STOREY 2	230	BORDEN	230	#1	1	355	793	Amps	EMERGENCY	891	112.3	942.8	118.9	6.6
STOREY 2	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	889	112.1	941.4	118.7	6.6
STOREY 2	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	889	112.1	941.4	118.7	6.6
STOREY 2	230	BORDEN	230	#1	1	54	793	Amps	EMERGENCY	891	112.4	943.3	118.9	6.6

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	256	793	Amps	EMERGENCY	892	112.4	943.5	119	6.6
STOREY 2	230	BORDEN	230	#1	1	265	793	Amps	EMERGENCY	880	110.9	931.7	117.5	6.6
STOREY 2	230	WILSON	230	#1	1	115	793	Amps	EMERGENCY	814	102.6	866	109.2	6.6
STOREY 2	230	BORDEN	230	#1	1	60	793	Amps	EMERGENCY	875	110.3	927	116.9	6.6
STOREY 2	230	BORDEN	230	#1	1	374	793	Amps	EMERGENCY	889	112.1	941.1	118.6	6.6
STOREY 2	230	BORDEN	230	#1	1	120	793	Amps	EMERGENCY	872	109.9	923.5	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	872	110	924.2	116.5	6.6
STOREY 2	230	BORDEN	230	#1	1	40	793	Amps	EMERGENCY	871	109.8	923.2	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	66	793	Amps	EMERGENCY	881	111.1	933.4	117.7	6.6
STOREY 2	230	BORDEN	230	#1	1	45	793	Amps	EMERGENCY	872	109.9	923.4	116.4	6.6
STOREY 2	230	WILSON	230	#1	1	162	793	Amps	EMERGENCY	803	101.2	855	107.8	6.6
STOREY 2	230	WILSON	230	#1	1	163	793	Amps	EMERGENCY	803	101.2	855	107.8	6.6
STOREY 2	230	BORDEN	230	#1	1	361	793	Amps	EMERGENCY	876	110.4	927.9	117	6.6
STOREY 2	230	WILSON	230	#1	1	379	793	Amps	EMERGENCY	792	99.9	844	106.4	6.6
STOREY 2	230	BORDEN	230	#1	1	276	793	Amps	EMERGENCY	871	109.8	922.5	116.3	6.6
STOREY 2	230	BORDEN	230	#1	1	91	793	Amps	EMERGENCY	874	110.2	925.7	116.7	6.5
STOREY 2	230	BORDEN	230	#1	1	119	793	Amps	EMERGENCY	871	109.8	923.2	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	264	793	Amps	EMERGENCY	873	110.1	925.4	116.7	6.5
STOREY 2	230	BORDEN	230	#1	1	46	793	Amps	EMERGENCY	873	110.1	925	116.6	6.5
STOREY 2	230	BORDEN	230	#1	1	92	793	Amps	EMERGENCY	871	109.8	923.1	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	249	793	Amps	EMERGENCY	877	110.6	929	117.1	6.5
STOREY 2	230	BORDEN	230	#1	1	290	793	Amps	EMERGENCY	876	110.4	927.9	117	6.5
STOREY 2	230	BORDEN	230	#1	1	362	793	Amps	EMERGENCY	871	109.8	923.2	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	257	793	Amps	EMERGENCY	876	110.5	928.3	117	6.5
STOREY 2	230	BORDEN	230	#1	1	262	793	Amps	EMERGENCY	875	110.3	926.8	116.8	6.5
STOREY 2	230	BORDEN	230	#1	1	270	793	Amps	EMERGENCY	872	109.9	923.7	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	77	793	Amps	EMERGENCY	872	109.9	923.9	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	79	793	Amps	EMERGENCY	876	110.5	928.2	117	6.5
STOREY 2	230	BORDEN	230	#1	1	231	793	Amps	EMERGENCY	871	109.7	922.4	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	250	793	Amps	EMERGENCY	876	110.4	927.8	117	6.5
STOREY 2	230	BORDEN	230	#1	1	277	793	Amps	EMERGENCY	871	109.8	922.8	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	289	793	Amps	EMERGENCY	874	110.2	926.3	116.8	6.5
STOREY 2	230	BORDEN	230	#1	1	80	793	Amps	EMERGENCY	872	109.9	923.4	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	122	793	Amps	EMERGENCY	872	109.9	923.7	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	244	793	Amps	EMERGENCY	875	110.3	926.8	116.8	6.5
STOREY 2	230	BORDEN	230	#1	1	263	793	Amps	EMERGENCY	873	110.1	925.3	116.7	6.5
STOREY 2	230	BORDEN	230	#1	1	269	793	Amps	EMERGENCY	871	109.8	923.1	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	873	110.1	925.1	116.6	6.5
STOREY 2	230	BORDEN	230	#1	1	242	793	Amps	EMERGENCY	871	109.8	922.7	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	243	793	Amps	EMERGENCY	873	110.1	925.1	116.6	6.5
STOREY 2	230	BORDEN	230	#1	1	245	793	Amps	EMERGENCY	872	110	924.3	116.5	6.5

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	266	793	Amps	EMERGENCY	872	109.9	923.7	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	32	793	Amps	EMERGENCY	870	109.7	922.3	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	83	793	Amps	EMERGENCY	872	110	924.1	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	273	793	Amps	EMERGENCY	870	109.7	922.1	116.3	6.5
STOREY 2	230	WILSON	230	#1	1	378	793	Amps	EMERGENCY	794	100.1	845.6	106.6	6.5
STOREY 2	230	BORDEN	230	#1	1	226	793	Amps	EMERGENCY	871	109.8	923.1	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	246	793	Amps	EMERGENCY	872	109.9	923.9	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	295	793	Amps	EMERGENCY	872	109.9	923.6	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	297	793	Amps	EMERGENCY	871	109.8	922.6	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	50	793	Amps	EMERGENCY	870	109.7	922.1	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	871	109.8	922.7	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	261	793	Amps	EMERGENCY	871	109.9	923.3	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	872	110	924.3	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	74	793	Amps	EMERGENCY	872	110	924.3	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	871	109.8	922.9	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	118	793	Amps	EMERGENCY	888	112	940.2	118.5	6.5
LE GRAND	115	WILSON A	115	#1	1	146	512	Amps	EMERGENCY	532	103.9	565.3	110.4	6.5
STOREY 2	230	BORDEN	230	#1	1	240	793	Amps	EMERGENCY	871	109.8	922.6	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	376	793	Amps	EMERGENCY	871	109.8	923.1	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	871	109.8	922.9	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	48	793	Amps	EMERGENCY	872	109.9	923.5	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	879	110.8	930.5	117.3	6.5
LE GRAND	115	WILSON A	115	#1	1	127	512	Amps	EMERGENCY	524	102.2	557	108.8	6.5
STOREY 2	230	WILSON	230	#1	1	13	793	Amps	EMERGENCY	784	98.8	835.6	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	14	793	Amps	EMERGENCY	784	98.8	835.6	105.3	6.5
STOREY 2	230	BORDEN	230	#1	1	109	793	Amps	EMERGENCY	879	110.9	931.3	117.4	6.5
STOREY 2	230	BORDEN	230	#1	1	275	793	Amps	EMERGENCY	872	109.9	923.6	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	291	793	Amps	EMERGENCY	872	109.9	923.3	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	253	793	Amps	EMERGENCY	871	109.8	922.7	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	274	793	Amps	EMERGENCY	870	109.7	922.3	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	879	110.8	930.9	117.4	6.5
STOREY 2	230	BORDEN	230	#1	1	124	793	Amps	EMERGENCY	869	109.6	921.2	116.1	6.5
STOREY 2	230	WILSON	230	#1	1	429	793	Amps	EMERGENCY	809	101.9	860.3	108.5	6.5
STOREY 2	230	WILSON	230	#1	1	38	793	Amps	EMERGENCY	791	99.8	843.2	106.3	6.5
STOREY 2	230	BORDEN	230	#1	1	360	793	Amps	EMERGENCY	875	110.3	926.8	116.8	6.5
STOREY 2	230	WILSON	230	#1	1	27	793	Amps	EMERGENCY	807	101.7	858.3	108.2	6.5
STOREY 2	230	WILSON	230	#1	1	116	793	Amps	EMERGENCY	824	103.8	875.3	110.3	6.5
STOREY 2	230	BORDEN	230	#1	1	285	793	Amps	EMERGENCY	872	109.9	923.2	116.4	6.5
STOREY 2	230	WILSON	230	#1	1	113	793	Amps	EMERGENCY	803	101.2	854.6	107.7	6.5
STOREY 2	230	WILSON	230	#1	1	299	793	Amps	EMERGENCY	784	98.9	835.9	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	431	793	Amps	EMERGENCY	791	99.7	842.6	106.2	6.5

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	117	793	Amps	EMERGENCY	804	101.4	855.8	107.9	6.5
STOREY 2	230	BORDEN	230	#1	1	237	793	Amps	EMERGENCY	888	111.9	939.1	118.4	6.5
STOREY 2	230	WILSON	230	#1	1	292	793	Amps	EMERGENCY	811	102.2	862.2	108.7	6.5
STOREY 2	230	WILSON	230	#1	1	355	793	Amps	EMERGENCY	804	101.3	855.2	107.8	6.5
STOREY 2	230	BORDEN	230	#1	1	280	793	Amps	EMERGENCY	885	111.6	936.4	118.1	6.5
STOREY 2	230	WILSON	230	#1	1	69	793	Amps	EMERGENCY	787	99.2	838.6	105.7	6.5
STOREY 2	230	WILSON	230	#1	1	158	793	Amps	EMERGENCY	802	101.2	853.9	107.7	6.5
STOREY 2	230	WILSON	230	#1	1	159	793	Amps	EMERGENCY	802	101.2	853.9	107.7	6.5
STOREY 2	230	WILSON	230	#1	1	81	793	Amps	EMERGENCY	802	101.2	853.9	107.6	6.5
STOREY 2	230	WILSON	230	#1	1	108	793	Amps	EMERGENCY	802	101.2	853.9	107.6	6.5
STOREY 2	230	WILSON	230	#1	1	256	793	Amps	EMERGENCY	805	101.4	856	107.9	6.5
STOREY 2	230	WILSON	230	#1	1	54	793	Amps	EMERGENCY	804	101.4	855.8	107.9	6.5
STOREY 2	230	WILSON	230	#1	1	265	793	Amps	EMERGENCY	793	100	844.2	106.4	6.5
STOREY 2	230	BORDEN	230	#1	1	281	793	Amps	EMERGENCY	885	111.6	936.7	118.1	6.5
STOREY 2	230	WILSON	230	#1	1	120	793	Amps	EMERGENCY	785	98.9	836	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	374	793	Amps	EMERGENCY	802	101.1	853.5	107.6	6.5
STOREY 2	230	WILSON	230	#1	1	60	793	Amps	EMERGENCY	788	99.4	839.5	105.8	6.5
STOREY 2	230	WILSON	230	#1	1	47	793	Amps	EMERGENCY	785	99	836.8	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	45	793	Amps	EMERGENCY	785	98.9	836	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	40	793	Amps	EMERGENCY	784	98.9	835.8	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	66	793	Amps	EMERGENCY	795	100.2	845.9	106.6	6.5
STOREY 2	230	WILSON	230	#1	1	361	793	Amps	EMERGENCY	789	99.5	840.4	106	6.5
STOREY 2	230	WILSON	230	#1	1	119	793	Amps	EMERGENCY	784	98.9	835.7	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	276	793	Amps	EMERGENCY	784	98.8	835.1	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	91	793	Amps	EMERGENCY	787	99.2	838.2	105.7	6.5
STOREY 2	230	WILSON	230	#1	1	264	793	Amps	EMERGENCY	787	99.2	838	105.6	6.5
STOREY 2	230	WILSON	230	#1	1	92	793	Amps	EMERGENCY	784	98.9	835.7	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	249	793	Amps	EMERGENCY	790	99.6	841.6	106.1	6.5
STOREY 2	230	WILSON	230	#1	1	362	793	Amps	EMERGENCY	785	98.9	835.8	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	257	793	Amps	EMERGENCY	790	99.5	840.9	106	6.5
STOREY 2	230	WILSON	230	#1	1	290	793	Amps	EMERGENCY	789	99.5	840.4	106	6.5
STOREY 2	230	WILSON	230	#1	1	122	793	Amps	EMERGENCY	785	98.9	836.2	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	79	793	Amps	EMERGENCY	790	99.5	840.8	106	6.5
STOREY 2	230	WILSON	230	#1	1	250	793	Amps	EMERGENCY	789	99.5	840.4	105.9	6.5
STOREY 2	230	WILSON	230	#1	1	277	793	Amps	EMERGENCY	784	98.8	835.4	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	46	793	Amps	EMERGENCY	786	99.1	837.6	105.6	6.5
STOREY 2	230	WILSON	230	#1	1	262	793	Amps	EMERGENCY	788	99.4	839.4	105.8	6.5
STOREY 2	230	WILSON	230	#1	1	270	793	Amps	EMERGENCY	785	99	836.3	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	77	793	Amps	EMERGENCY	785	99	836.4	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	289	793	Amps	EMERGENCY	788	99.3	838.9	105.8	6.5
STOREY 2	230	WILSON	230	#1	1	80	793	Amps	EMERGENCY	785	98.9	836	105.4	6.5

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	231	793	Amps	EMERGENCY	784	98.8	835	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	244	793	Amps	EMERGENCY	788	99.4	839.4	105.8	6.5
STOREY 2	230	WILSON	230	#1	1	59	793	Amps	EMERGENCY	786	99.1	837.7	105.6	6.5
STOREY 2	230	WILSON	230	#1	1	243	793	Amps	EMERGENCY	786	99.1	837.7	105.6	6.5
STOREY 2	230	WILSON	230	#1	1	32	793	Amps	EMERGENCY	784	98.8	834.9	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	263	793	Amps	EMERGENCY	787	99.2	837.9	105.6	6.5
STOREY 2	230	WILSON	230	#1	1	83	793	Amps	EMERGENCY	785	99	836.7	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	269	793	Amps	EMERGENCY	784	98.9	835.7	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	245	793	Amps	EMERGENCY	786	99	836.9	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	295	793	Amps	EMERGENCY	785	99	836.2	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	273	793	Amps	EMERGENCY	783	98.8	834.7	105.2	6.5
STOREY 2	230	WILSON	230	#1	1	297	793	Amps	EMERGENCY	784	98.8	835.2	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	242	793	Amps	EMERGENCY	784	98.8	835.3	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	266	793	Amps	EMERGENCY	785	99	836.3	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	50	793	Amps	EMERGENCY	783	98.8	834.7	105.2	6.5
STOREY 2	230	WILSON	230	#1	1	226	793	Amps	EMERGENCY	784	98.9	835.7	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	246	793	Amps	EMERGENCY	785	99	836.4	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	261	793	Amps	EMERGENCY	785	98.9	835.9	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	376	793	Amps	EMERGENCY	785	98.9	835.8	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	73	793	Amps	EMERGENCY	786	99.1	836.9	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	74	793	Amps	EMERGENCY	786	99.1	836.9	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	84	793	Amps	EMERGENCY	784	98.8	835.3	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	118	793	Amps	EMERGENCY	801	101	852.7	107.5	6.5
STOREY 2	230	WILSON	230	#1	1	240	793	Amps	EMERGENCY	784	98.8	835.2	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	72	793	Amps	EMERGENCY	784	98.9	835.4	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	48	793	Amps	EMERGENCY	785	98.9	836	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	71	793	Amps	EMERGENCY	784	98.9	835.5	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	110	793	Amps	EMERGENCY	792	99.8	843.2	106.3	6.5
STOREY 2	230	WILSON	230	#1	1	109	793	Amps	EMERGENCY	793	99.9	844	106.4	6.5
STOREY 2	230	WILSON	230	#1	1	291	793	Amps	EMERGENCY	785	98.9	836	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	275	793	Amps	EMERGENCY	785	99	836.2	105.4	6.5
STOREY 2	230	BORDEN	230	#1	1	235	793	Amps	EMERGENCY	877	110.6	928.3	117	6.5
STOREY 2	230	BORDEN	230	#1	1	233	793	Amps	EMERGENCY	875	110.4	926.5	116.8	6.5
STOREY 2	230	WILSON	230	#1	1	274	793	Amps	EMERGENCY	784	98.8	834.9	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	253	793	Amps	EMERGENCY	784	98.9	835.3	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	124	793	Amps	EMERGENCY	783	98.7	834	105.1	6.5
STOREY 2	230	WILSON	230	#1	1	58	793	Amps	EMERGENCY	792	99.9	843.5	106.3	6.5
STOREY 2	230	WILSON	230	#1	1	360	793	Amps	EMERGENCY	788	99.4	839.4	105.8	6.4
STOREY 2	230	WILSON	230	#1	1	285	793	Amps	EMERGENCY	785	98.9	835.7	105.4	6.4
STOREY 2	230	WILSON	230	#1	1	237	793	Amps	EMERGENCY	801	101	851.7	107.4	6.4
STOREY 2	230	WILSON	230	#1	1	280	793	Amps	EMERGENCY	798	100.6	848.9	107	6.4

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	281	793	Amps	EMERGENCY	798	100.7	849.2	107.1	6.4
STOREY 2	230	WILSON	230	#1	1	235	793	Amps	EMERGENCY	790	99.6	840.9	106	6.4
STOREY 2	230	WILSON	230	#1	1	233	793	Amps	EMERGENCY	789	99.4	839.1	105.8	6.4
LE GRAND	115	WILSON A	115	#1	1	15	512	Amps	EMERGENCY	501	97.9	533.7	104.2	6.4
CERTAN T	115	LE GRAND	115	#1	1	165	397	Amps	EMERGENCY	431	108.7	455.4	114.8	6.1
CERTAN T	115	LE GRAND	115	#1	1	128	397	Amps	EMERGENCY	388	97.8	412.3	104	6.1
STOREY 2	230	BORDEN	230	#1	1	432	793	Amps	EMERGENCY	917	115.7	965.9	121.8	6.1
STOREY 2	230	BORDEN	230	#1	1	377	793	Amps	EMERGENCY	910	114.7	958.4	120.8	6.1
STOREY 2	230	BORDEN	230	#1	1	203	793	Amps	EMERGENCY	891	112.4	939.5	118.4	6.1
STOREY 2	230	WILSON	230	#1	1	432	793	Amps	EMERGENCY	830	104.6	877.7	110.7	6.1
LE GRAND	115	WILSON A	115	#1	1	145	512	Amps	EMERGENCY	504	98.4	535.1	104.5	6.1
CERTAN T	115	LE GRAND	115	#1	1	16	397	Amps	EMERGENCY	380	95.9	404.2	101.9	6
STOREY 2	230	WILSON	230	#1	1	377	793	Amps	EMERGENCY	823	103.7	870.7	109.8	6
STOREY 2	230	WILSON	230	#1	1	203	793	Amps	EMERGENCY	804	101.4	852	107.4	6
ORO LOMA	70	DOS PALS	70	#1	1	286	282	Amps	EMERGENCY	273	96.9	290	102.8	5.9
CERTAN T	115	LE GRAND	115	#1	1	164	397	Amps	EMERGENCY	409	103.2	432	108.9	5.8
CERTAN T	115	LE GRAND	115	#1	1	365	397	Amps	EMERGENCY	395	99.6	416.9	105.1	5.5
ORO LOMA	70	DOS PALS	70	#1	1	44	282	Amps	EMERGENCY	352	124.7	365.5	129.6	4.9
ORO LOMA	70	DOS PALS	70	#1	1	125	282	Amps	EMERGENCY	352	124.8	365.8	129.7	4.9
ORO LOMA	70	DOS PALS	70	#1	1	118	282	Amps	EMERGENCY	339	120.2	352.7	125	4.8
Q194SWST	230	MIDWAY	230	#1	1	207	976	Amps	EMERGENCY	1490	152.6	1535.6	157.3	4.7
Q166	230	MIDWAY	230	#1	1	207	976	Amps	EMERGENCY	1476	151.2	1522.1	155.9	4.7
Q194SWST	230	MIDWAY	230	#1	1	206	976	Amps	EMERGENCY	1495	153.1	1540.3	157.7	4.6
Q166	230	MIDWAY	230	#1	1	206	976	Amps	EMERGENCY	1482	151.8	1526.7	156.4	4.6
Q194SWST	230	MIDWAY	230	#1	1	380	976	Amps	EMERGENCY	1492	152.8	1537.3	157.4	4.6
Q194SWST	230	MIDWAY	230	#1	1	435	976	Amps	EMERGENCY	1494	153	1538.5	157.6	4.6
Q166	230	MIDWAY	230	#1	1	380	976	Amps	EMERGENCY	1479	151.5	1523.8	156.1	4.6
Q166	230	MIDWAY	230	#1	1	435	976	Amps	EMERGENCY	1480	151.6	1525	156.2	4.6
Q194SWST	230	MIDWAY	230	#1	1	397	976	Amps	EMERGENCY	1489	152.5	1533.7	157.1	4.6
Q166	230	MIDWAY	230	#1	1	397	976	Amps	EMERGENCY	1475	151.1	1520.1	155.7	4.6
Q194SWST	230	Q166	230	#1	1	207	976	Amps	EMERGENCY	1023	104.8	1067.1	109.3	4.5
Q194SWST	230	Q166	230	#1	1	206	976	Amps	EMERGENCY	1028	105.3	1071.5	109.7	4.4
Q194SWST	230	Q166	230	#1	1	435	976	Amps	EMERGENCY	1027	105.1	1069.8	109.6	4.4
Q194SWST	230	Q166	230	#1	1	380	976	Amps	EMERGENCY	1026	105	1068.7	109.4	4.4
Q194SWST	230	Q166	230	#1	1	397	976	Amps	EMERGENCY	1022	104.7	1065.3	109.1	4.4
Q194SWST	230	MIDWAY	230	#1	1	13	976	Amps	EMERGENCY	1492	152.8	1534.9	157.2	4.4
Q194SWST	230	MIDWAY	230	#1	1	14	976	Amps	EMERGENCY	1492	152.8	1534.9	157.2	4.4
Q194SWST	230	MIDWAY	230	#1	1	162	976	Amps	EMERGENCY	1490	152.5	1532.4	156.9	4.4
Q194SWST	230	MIDWAY	230	#1	1	163	976	Amps	EMERGENCY	1490	152.5	1532.4	156.9	4.4
Q166	230	MIDWAY	230	#1	1	13	976	Amps	EMERGENCY	1479	151.4	1521.4	155.8	4.4
Q166	230	MIDWAY	230	#1	1	14	976	Amps	EMERGENCY	1479	151.4	1521.4	155.8	4.4

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q194SWST	230	MIDWAY	230	#1	1	418	976	Amps	EMERGENCY	1491	152.7	1533.4	157	4.4
Q194SWST	230	MIDWAY	230	#1	1	419	976	Amps	EMERGENCY	1491	152.7	1533.4	157	4.4
Q166	230	MIDWAY	230	#1	1	162	976	Amps	EMERGENCY	1476	151.2	1518.8	155.5	4.4
Q166	230	MIDWAY	230	#1	1	163	976	Amps	EMERGENCY	1476	151.2	1518.8	155.5	4.4
Q166	230	MIDWAY	230	#1	1	418	976	Amps	EMERGENCY	1477	151.3	1519.9	155.7	4.4
Q166	230	MIDWAY	230	#1	1	419	976	Amps	EMERGENCY	1477	151.3	1519.9	155.7	4.4
Q194SWST	230	MIDWAY	230	#1	1	151	976	Amps	EMERGENCY	1499	153.5	1540.4	157.8	4.3
Q166	230	MIDWAY	230	#1	1	151	976	Amps	EMERGENCY	1485	152.1	1526.8	156.4	4.3
Q194SWST	230	MIDWAY	230	#1	1	170	976	Amps	EMERGENCY	1495	153.1	1536.9	157.4	4.3
Q166	230	MIDWAY	230	#1	1	170	976	Amps	EMERGENCY	1482	151.7	1523.4	156	4.3
Q194SWST	230	MIDWAY	230	#1	1	3	976	Amps	EMERGENCY	1495	153.1	1536.2	157.3	4.3
Q166	230	MIDWAY	230	#1	1	3	976	Amps	EMERGENCY	1481	151.7	1522.7	155.9	4.3
Q194SWST	230	MIDWAY	230	#1	1	153	976	Amps	EMERGENCY	1492	152.8	1533.3	157	4.3
Q166	230	MIDWAY	230	#1	1	153	976	Amps	EMERGENCY	1478	151.4	1519.8	155.6	4.2
Q194SWST	230	MIDWAY	230	#1	1	172	976	Amps	EMERGENCY	1488	152.4	1529.8	156.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	2	976	Amps	EMERGENCY	1498	153.4	1539.1	157.6	4.2
Q166	230	MIDWAY	230	#1	1	172	976	Amps	EMERGENCY	1475	151	1516.3	155.3	4.2
Q166	230	MIDWAY	230	#1	1	2	976	Amps	EMERGENCY	1484	152	1525.5	156.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	5	976	Amps	EMERGENCY	1494	153.1	1535.8	157.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	152	976	Amps	EMERGENCY	1495	153.1	1536.2	157.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	62	976	Amps	EMERGENCY	1495	153.1	1536.2	157.3	4.2
Q166	230	MIDWAY	230	#1	1	5	976	Amps	EMERGENCY	1481	151.7	1522.3	155.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	155	976	Amps	EMERGENCY	1492	152.8	1532.9	157	4.2
Q194SWST	230	MIDWAY	230	#1	1	6	976	Amps	EMERGENCY	1494	153	1535.2	157.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	171	976	Amps	EMERGENCY	1491	152.7	1532.6	157	4.2
Q166	230	MIDWAY	230	#1	1	152	976	Amps	EMERGENCY	1481	151.7	1522.6	155.9	4.2
Q166	230	MIDWAY	230	#1	1	62	976	Amps	EMERGENCY	1481	151.7	1522.7	155.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	169	976	Amps	EMERGENCY	1492	152.8	1533.4	157	4.2
Q194SWST	230	MIDWAY	230	#1	1	7	976	Amps	EMERGENCY	1492	152.8	1533.5	157.1	4.2
Q194SWST	230	Q166	230	#1	1	13	976	Amps	EMERGENCY	1025	105	1066.3	109.2	4.2
Q194SWST	230	Q166	230	#1	1	14	976	Amps	EMERGENCY	1025	105	1066.3	109.2	4.2
Q166	230	MIDWAY	230	#1	1	155	976	Amps	EMERGENCY	1478	151.4	1519.4	155.6	4.2
Q194SWST	230	MIDWAY	230	#1	1	156	976	Amps	EMERGENCY	1491	152.7	1532.4	156.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	174	976	Amps	EMERGENCY	1488	152.4	1529.5	156.6	4.2
Q194SWST	230	Q166	230	#1	1	162	976	Amps	EMERGENCY	1023	104.7	1063.9	109	4.2
Q194SWST	230	Q166	230	#1	1	163	976	Amps	EMERGENCY	1023	104.7	1063.9	109	4.2
Q166	230	MIDWAY	230	#1	1	6	976	Amps	EMERGENCY	1481	151.6	1521.7	155.8	4.2
Q166	230	MIDWAY	230	#1	1	171	976	Amps	EMERGENCY	1478	151.4	1519.1	155.6	4.2
Q166	230	MIDWAY	230	#1	1	7	976	Amps	EMERGENCY	1479	151.5	1520	155.7	4.2
Q194SWST	230	Q166	230	#1	1	418	976	Amps	EMERGENCY	1024	104.8	1064.8	109	4.2
Q194SWST	230	Q166	230	#1	1	419	976	Amps	EMERGENCY	1024	104.8	1064.8	109	4.2

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Appendix C--Steady State Power Flow Results
Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	169	976	Amps	EMERGENCY	1479	151.4	1519.9	155.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	157	976	Amps	EMERGENCY	1490	152.5	1530.7	156.8	4.2
Q166	230	MIDWAY	230	#1	1	174	976	Amps	EMERGENCY	1475	151	1515.9	155.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	188	976	Amps	EMERGENCY	1489	152.5	1529.9	156.7	4.2
Q166	230	MIDWAY	230	#1	1	156	976	Amps	EMERGENCY	1478	151.3	1518.9	155.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	126	976	Amps	EMERGENCY	1500	153.6	1541.3	157.8	4.2
Q166	230	MIDWAY	230	#1	1	157	976	Amps	EMERGENCY	1476	151.2	1517.2	155.4	4.2
Q166	230	MIDWAY	230	#1	1	188	976	Amps	EMERGENCY	1475	151.1	1516.4	155.3	4.2
Q166	230	MIDWAY	230	#1	1	126	976	Amps	EMERGENCY	1487	152.3	1527.7	156.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	16	976	Amps	EMERGENCY	1497	153.4	1538.4	157.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	165	976	Amps	EMERGENCY	1495	153.1	1535.9	157.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	128	976	Amps	EMERGENCY	1496	153.2	1537.1	157.4	4.2
Q194SWST	230	MIDWAY	230	#1	1	4	976	Amps	EMERGENCY	1490	152.5	1530.4	156.7	4.2
Q166	230	MIDWAY	230	#1	1	16	976	Amps	EMERGENCY	1484	152	1524.8	156.2	4.2
Q166	230	MIDWAY	230	#1	1	165	976	Amps	EMERGENCY	1482	151.7	1522.4	155.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	1	976	Amps	EMERGENCY	1502	153.8	1543	158	4.2
Q166	230	MIDWAY	230	#1	1	128	976	Amps	EMERGENCY	1483	151.9	1523.5	156	4.2
Q194SWST	230	MIDWAY	230	#1	1	184	976	Amps	EMERGENCY	1491	152.7	1532	156.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	15	976	Amps	EMERGENCY	1495	153.1	1536.1	157.3	4.2
Q166	230	MIDWAY	230	#1	1	4	976	Amps	EMERGENCY	1476	151.2	1516.9	155.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	12	976	Amps	EMERGENCY	1493	152.9	1534	157.1	4.2
Q166	230	MIDWAY	230	#1	1	1	976	Amps	EMERGENCY	1489	152.5	1529.4	156.6	4.2
Q194SWST	230	MIDWAY	230	#1	1	131	976	Amps	EMERGENCY	1491	152.7	1532.2	156.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	166	976	Amps	EMERGENCY	1489	152.5	1529.8	156.7	4.2
Q166	230	MIDWAY	230	#1	1	15	976	Amps	EMERGENCY	1482	151.8	1522.6	155.9	4.2
Q166	230	MIDWAY	230	#1	1	184	976	Amps	EMERGENCY	1478	151.3	1518.5	155.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	161	976	Amps	EMERGENCY	1490	152.6	1531.2	156.8	4.2
Q194SWST	230	MIDWAY	230	#1	1	164	976	Amps	EMERGENCY	1493	152.9	1533.6	157.1	4.2
Q194SWST	230	MIDWAY	230	#1	1	127	976	Amps	EMERGENCY	1494	153	1534.7	157.2	4.2
Q166	230	MIDWAY	230	#1	1	12	976	Amps	EMERGENCY	1480	151.5	1520.5	155.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	417	976	Amps	EMERGENCY	1492	152.8	1532.3	156.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	299	976	Amps	EMERGENCY	1489	152.5	1529.7	156.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	189	976	Amps	EMERGENCY	1493	152.9	1534.1	157.1	4.2
Q166	230	MIDWAY	230	#1	1	131	976	Amps	EMERGENCY	1478	151.4	1518.7	155.5	4.2
Q166	230	MIDWAY	230	#1	1	166	976	Amps	EMERGENCY	1476	151.1	1516.2	155.3	4.2
Q166	230	MIDWAY	230	#1	1	161	976	Amps	EMERGENCY	1477	151.3	1517.6	155.4	4.2
Q166	230	MIDWAY	230	#1	1	127	976	Amps	EMERGENCY	1481	151.6	1521.2	155.8	4.2
Q166	230	MIDWAY	230	#1	1	164	976	Amps	EMERGENCY	1479	151.5	1520	155.7	4.2
Q166	230	MIDWAY	230	#1	1	417	976	Amps	EMERGENCY	1478	151.4	1518.8	155.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	365	976	Amps	EMERGENCY	1491	152.7	1531.3	156.8	4.2
Q194SWST	230	MIDWAY	230	#1	1	183	976	Amps	EMERGENCY	1489	152.5	1529.9	156.7	4.2

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	299	976	Amps	EMERGENCY	1476	151.1	1516.2	155.3	4.2
Q166	230	MIDWAY	230	#1	1	189	976	Amps	EMERGENCY	1480	151.6	1520.6	155.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	420	976	Amps	EMERGENCY	1492	152.8	1532.4	156.9	4.2
Q166	230	MIDWAY	230	#1	1	365	976	Amps	EMERGENCY	1477	151.3	1517.8	155.4	4.2
Q194SWST	230	MIDWAY	230	#1	1	277	976	Amps	EMERGENCY	1490	152.5	1530.1	156.7	4.2
Q166	230	MIDWAY	230	#1	1	183	976	Amps	EMERGENCY	1476	151.1	1516.3	155.3	4.2
Q166	230	MIDWAY	230	#1	1	420	976	Amps	EMERGENCY	1478	151.4	1518.9	155.6	4.2
Q194SWST	230	MIDWAY	230	#1	1	276	976	Amps	EMERGENCY	1489	152.4	1529.1	156.6	4.2
Q166	230	MIDWAY	230	#1	1	277	976	Amps	EMERGENCY	1476	151.2	1516.6	155.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	265	976	Amps	EMERGENCY	1491	152.7	1532	156.9	4.2
Q166	230	MIDWAY	230	#1	1	276	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	25	976	Amps	EMERGENCY	1492	152.8	1532	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	208	976	Amps	EMERGENCY	1492	152.8	1532	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	41	976	Amps	EMERGENCY	1490	152.6	1530.3	156.7	4.1
Q166	230	MIDWAY	230	#1	1	265	976	Amps	EMERGENCY	1478	151.4	1518.5	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	11	976	Amps	EMERGENCY	1490	152.6	1530.8	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	28	976	Amps	EMERGENCY	1489	152.5	1529.3	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	40	976	Amps	EMERGENCY	1489	152.5	1529.4	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	292	976	Amps	EMERGENCY	1491	152.7	1531.9	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	107	976	Amps	EMERGENCY	1489	152.5	1529.6	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	361	976	Amps	EMERGENCY	1490	152.6	1530.6	156.8	4.1
Q166	230	MIDWAY	230	#1	1	25	976	Amps	EMERGENCY	1478	151.4	1518.5	155.5	4.1
Q166	230	MIDWAY	230	#1	1	208	976	Amps	EMERGENCY	1478	151.4	1518.5	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	196	976	Amps	EMERGENCY	1491	152.7	1531.5	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	70	976	Amps	EMERGENCY	1489	152.5	1529.6	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	256	976	Amps	EMERGENCY	1491	152.7	1531.1	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	264	976	Amps	EMERGENCY	1489	152.5	1529.5	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	362	976	Amps	EMERGENCY	1488	152.4	1528.6	156.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	44	976	Amps	EMERGENCY	1489	152.4	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	125	976	Amps	EMERGENCY	1489	152.4	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	270	976	Amps	EMERGENCY	1490	152.6	1530.1	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	197	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	212	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q166	230	MIDWAY	230	#1	1	11	976	Amps	EMERGENCY	1477	151.3	1517.3	155.4	4.1
Q194SWST	230	MIDWAY	230	#1	1	269	976	Amps	EMERGENCY	1489	152.5	1529.6	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	290	976	Amps	EMERGENCY	1490	152.6	1530	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	416	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q166	230	MIDWAY	230	#1	1	28	976	Amps	EMERGENCY	1475	151.1	1515.8	155.2	4.1
Q166	230	MIDWAY	230	#1	1	40	976	Amps	EMERGENCY	1475	151.1	1515.8	155.2	4.1
Q166	230	MIDWAY	230	#1	1	41	976	Amps	EMERGENCY	1476	151.2	1516.8	155.3	4.1
Q166	230	MIDWAY	230	#1	1	107	976	Amps	EMERGENCY	1476	151.1	1516.1	155.3	4.1

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q194SWST	230	MIDWAY	230	#1	1	45	976	Amps	EMERGENCY	1489	152.5	1529.3	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	75	976	Amps	EMERGENCY	1489	152.5	1529.3	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	427	976	Amps	EMERGENCY	1489	152.5	1529.9	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	54	976	Amps	EMERGENCY	1489	152.5	1529.4	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	30	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q166	230	MIDWAY	230	#1	1	70	976	Amps	EMERGENCY	1476	151.1	1516	155.3	4.1
Q166	230	MIDWAY	230	#1	1	292	976	Amps	EMERGENCY	1478	151.4	1518.4	155.5	4.1
Q166	230	MIDWAY	230	#1	1	196	976	Amps	EMERGENCY	1478	151.3	1518	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	26	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q166	230	MIDWAY	230	#1	1	361	976	Amps	EMERGENCY	1477	151.2	1517.1	155.4	4.1
Q194SWST	230	MIDWAY	230	#1	1	244	976	Amps	EMERGENCY	1489	152.4	1528.9	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	245	976	Amps	EMERGENCY	1489	152.5	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	249	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	257	976	Amps	EMERGENCY	1489	152.5	1529.1	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	262	976	Amps	EMERGENCY	1489	152.5	1529.4	156.6	4.1
Q166	230	MIDWAY	230	#1	1	256	976	Amps	EMERGENCY	1477	151.3	1517.6	155.4	4.1
Q166	230	MIDWAY	230	#1	1	264	976	Amps	EMERGENCY	1476	151.1	1516	155.3	4.1
Q194SWST	230	MIDWAY	230	#1	1	24	976	Amps	EMERGENCY	1489	152.5	1529.1	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	43	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	58	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	214	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	263	976	Amps	EMERGENCY	1489	152.5	1529.2	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	289	976	Amps	EMERGENCY	1489	152.5	1529.3	156.6	4.1
Q166	230	MIDWAY	230	#1	1	125	976	Amps	EMERGENCY	1475	151.1	1515.4	155.2	4.1
Q194SWST	230	MIDWAY	230	#1	1	261	976	Amps	EMERGENCY	1488	152.4	1528.6	156.5	4.1
Q166	230	MIDWAY	230	#1	1	362	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q194SWST	230	MIDWAY	230	#1	1	218	976	Amps	EMERGENCY	1488	152.4	1528.6	156.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	246	976	Amps	EMERGENCY	1489	152.5	1529.1	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	250	976	Amps	EMERGENCY	1489	152.5	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	266	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q166	230	MIDWAY	230	#1	1	197	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	270	976	Amps	EMERGENCY	1476	151.2	1516.6	155.3	4.1
Q194SWST	230	MIDWAY	230	#1	1	295	976	Amps	EMERGENCY	1488	152.4	1528.8	156.6	4.1
Q166	230	MIDWAY	230	#1	1	44	976	Amps	EMERGENCY	1475	151.1	1515.4	155.2	4.1
Q194SWST	230	MIDWAY	230	#1	1	53	976	Amps	EMERGENCY	1488	152.4	1528.6	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	59	976	Amps	EMERGENCY	1488	152.4	1528.7	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	243	976	Amps	EMERGENCY	1488	152.4	1528.7	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	226	976	Amps	EMERGENCY	1488	152.4	1528.6	156.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	282	976	Amps	EMERGENCY	1488	152.4	1528.7	156.6	4.1
Q166	230	MIDWAY	230	#1	1	75	976	Amps	EMERGENCY	1475	151.1	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	269	976	Amps	EMERGENCY	1476	151.1	1516.1	155.3	4.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	45	976	Amps	EMERGENCY	1475	151.1	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	212	976	Amps	EMERGENCY	1475	151.1	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	290	976	Amps	EMERGENCY	1476	151.2	1516.5	155.3	4.1
Q166	230	MIDWAY	230	#1	1	427	976	Amps	EMERGENCY	1476	151.2	1516.3	155.3	4.1
Q166	230	MIDWAY	230	#1	1	54	976	Amps	EMERGENCY	1476	151.1	1515.9	155.2	4.1
Q166	230	MIDWAY	230	#1	1	249	976	Amps	EMERGENCY	1475	151.1	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	416	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	262	976	Amps	EMERGENCY	1476	151.1	1515.9	155.2	4.1
Q166	230	MIDWAY	230	#1	1	58	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	214	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	257	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	289	976	Amps	EMERGENCY	1475	151.1	1515.8	155.2	4.1
Q166	230	MIDWAY	230	#1	1	30	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	24	976	Amps	EMERGENCY	1475	151.1	1515.5	155.2	4.1
Q166	230	MIDWAY	230	#1	1	26	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	43	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	250	976	Amps	EMERGENCY	1475	151.1	1515.5	155.2	4.1
Q166	230	MIDWAY	230	#1	1	263	976	Amps	EMERGENCY	1475	151.1	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	218	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q166	230	MIDWAY	230	#1	1	244	976	Amps	EMERGENCY	1475	151.1	1515.4	155.2	4.1
Q166	230	MIDWAY	230	#1	1	53	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q166	230	MIDWAY	230	#1	1	59	976	Amps	EMERGENCY	1475	151	1515.2	155.2	4.1
Q166	230	MIDWAY	230	#1	1	226	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q166	230	MIDWAY	230	#1	1	243	976	Amps	EMERGENCY	1475	151	1515.2	155.2	4.1
Q166	230	MIDWAY	230	#1	1	245	976	Amps	EMERGENCY	1475	151.1	1515.4	155.2	4.1
Q166	230	MIDWAY	230	#1	1	246	976	Amps	EMERGENCY	1475	151.1	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	266	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	295	976	Amps	EMERGENCY	1475	151.1	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	261	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q194SWST	230	MIDWAY	230	#1	1	279	976	Amps	EMERGENCY	1493	152.9	1533	157	4.1
Q194SWST	230	MIDWAY	230	#1	1	273	976	Amps	EMERGENCY	1488	152.4	1528.7	156.6	4.1
Q166	230	MIDWAY	230	#1	1	282	976	Amps	EMERGENCY	1475	151	1515.2	155.2	4.1
Q166	230	MIDWAY	230	#1	1	279	976	Amps	EMERGENCY	1479	151.5	1519.5	155.6	4.1
Q166	230	MIDWAY	230	#1	1	273	976	Amps	EMERGENCY	1475	151.1	1515.2	155.2	4.1
Q194SWST	230	Q166	230	#1	1	151	976	Amps	EMERGENCY	1031	105.6	1071.3	109.7	4.1
Q194SWST	230	Q166	230	#1	1	170	976	Amps	EMERGENCY	1028	105.3	1068.1	109.4	4.1
Q194SWST	230	Q166	230	#1	1	3	976	Amps	EMERGENCY	1028	105.2	1067.5	109.3	4.1
Q194SWST	230	Q166	230	#1	1	153	976	Amps	EMERGENCY	1025	105	1064.7	109	4.1
Q194SWST	230	Q166	230	#1	1	172	976	Amps	EMERGENCY	1022	104.6	1061.4	108.7	4.1
Q194SWST	230	Q166	230	#1	1	2	976	Amps	EMERGENCY	1030	105.5	1070	109.6	4.1
Q194SWST	230	Q166	230	#1	1	5	976	Amps	EMERGENCY	1027	105.2	1067.1	109.3	4.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q194SWST	230	Q166	230	#1	1	155	976	Amps	EMERGENCY	1025	105	1064.5	109	4.1
Q194SWST	230	Q166	230	#1	1	62	976	Amps	EMERGENCY	1028	105.3	1067.6	109.3	4.1
Q194SWST	230	Q166	230	#1	1	152	976	Amps	EMERGENCY	1028	105.2	1067.2	109.3	4.1
Q194SWST	230	Q166	230	#1	1	169	976	Amps	EMERGENCY	1025	105	1064.9	109.1	4.1
Q194SWST	230	Q166	230	#1	1	174	976	Amps	EMERGENCY	1022	104.6	1061.2	108.7	4.1
Q194SWST	230	Q166	230	#1	1	6	976	Amps	EMERGENCY	1027	105.2	1066.6	109.2	4.1
Q194SWST	230	Q166	230	#1	1	126	976	Amps	EMERGENCY	1033	105.8	1072.3	109.8	4.1
Q194SWST	230	Q166	230	#1	1	171	976	Amps	EMERGENCY	1024	104.9	1064	109	4.1
Q194SWST	230	Q166	230	#1	1	7	976	Amps	EMERGENCY	1025	105	1065	109.1	4.1
Q194SWST	230	Q166	230	#1	1	156	976	Amps	EMERGENCY	1024	104.9	1063.9	109	4.1
Q194SWST	230	Q166	230	#1	1	157	976	Amps	EMERGENCY	1023	104.7	1062.4	108.8	4.1
Q194SWST	230	Q166	230	#1	1	188	976	Amps	EMERGENCY	1022	104.7	1061.6	108.7	4.1
Q194SWST	230	Q166	230	#1	1	1	976	Amps	EMERGENCY	1035	106	1073.9	110	4
Q194SWST	230	Q166	230	#1	1	4	976	Amps	EMERGENCY	1023	104.7	1062	108.8	4
Q194SWST	230	Q166	230	#1	1	16	976	Amps	EMERGENCY	1030	105.5	1069.4	109.5	4
Q194SWST	230	Q166	230	#1	1	128	976	Amps	EMERGENCY	1029	105.4	1068.2	109.4	4
Q194SWST	230	Q166	230	#1	1	165	976	Amps	EMERGENCY	1028	105.3	1067.1	109.3	4
Q194SWST	230	Q166	230	#1	1	184	976	Amps	EMERGENCY	1024	104.9	1063.5	108.9	4
Q194SWST	230	Q166	230	#1	1	12	976	Amps	EMERGENCY	1026	105.1	1065.4	109.1	4
Q194SWST	230	Q166	230	#1	1	15	976	Amps	EMERGENCY	1028	105.3	1067.3	109.3	4
Q194SWST	230	Q166	230	#1	1	161	976	Amps	EMERGENCY	1024	104.8	1062.7	108.8	4
Q194SWST	230	Q166	230	#1	1	166	976	Amps	EMERGENCY	1022	104.7	1061.4	108.7	4
Q194SWST	230	Q166	230	#1	1	131	976	Amps	EMERGENCY	1024	104.9	1063.6	108.9	4
Q194SWST	230	Q166	230	#1	1	299	976	Amps	EMERGENCY	1022	104.7	1061.4	108.7	4
Q194SWST	230	Q166	230	#1	1	417	976	Amps	EMERGENCY	1025	104.9	1063.8	108.9	4
Q194SWST	230	Q166	230	#1	1	164	976	Amps	EMERGENCY	1026	105.1	1064.9	109.1	4
Q194SWST	230	Q166	230	#1	1	127	976	Amps	EMERGENCY	1027	105.2	1066	109.2	4
Q194SWST	230	Q166	230	#1	1	189	976	Amps	EMERGENCY	1026	105.1	1065.4	109.1	4
Q194SWST	230	Q166	230	#1	1	365	976	Amps	EMERGENCY	1024	104.8	1062.8	108.8	4
Q194SWST	230	Q166	230	#1	1	183	976	Amps	EMERGENCY	1022	104.7	1061.5	108.7	4
Q194SWST	230	Q166	230	#1	1	420	976	Amps	EMERGENCY	1025	105	1063.9	109	4
Q194SWST	230	Q166	230	#1	1	277	976	Amps	EMERGENCY	1023	104.7	1061.8	108.7	4
Q194SWST	230	Q166	230	#1	1	276	976	Amps	EMERGENCY	1022	104.6	1060.8	108.6	4
ORO LOMA	70	DOS PALS	70	#1	1	170	282	Amps	EMERGENCY	274	97.2	285.5	101.2	4
ORO LOMA	70	DOS PALS	70	#1	1	151	282	Amps	EMERGENCY	273	96.8	284.2	100.8	4
Q194SWST	230	Q166	230	#1	1	25	976	Amps	EMERGENCY	1025	104.9	1063.5	108.9	4
Q194SWST	230	Q166	230	#1	1	208	976	Amps	EMERGENCY	1025	104.9	1063.5	108.9	4
Q194SWST	230	Q166	230	#1	1	265	976	Amps	EMERGENCY	1025	104.9	1063.5	108.9	4
Q194SWST	230	Q166	230	#1	1	40	976	Amps	EMERGENCY	1022	104.7	1061	108.7	4
Q194SWST	230	Q166	230	#1	1	107	976	Amps	EMERGENCY	1022	104.7	1061.2	108.7	4
Q194SWST	230	Q166	230	#1	1	11	976	Amps	EMERGENCY	1024	104.8	1062.4	108.8	4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q194SWST	230	Q166	230	#1	1	28	976	Amps	EMERGENCY	1022	104.7	1061	108.7	4
Q194SWST	230	Q166	230	#1	1	41	976	Amps	EMERGENCY	1023	104.8	1061.9	108.8	4
Q194SWST	230	Q166	230	#1	1	196	976	Amps	EMERGENCY	1024	104.9	1063	108.9	4
Q194SWST	230	Q166	230	#1	1	197	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	361	976	Amps	EMERGENCY	1023	104.8	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	44	976	Amps	EMERGENCY	1022	104.6	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	70	976	Amps	EMERGENCY	1022	104.7	1061.2	108.7	4
Q194SWST	230	Q166	230	#1	1	362	976	Amps	EMERGENCY	1021	104.6	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	427	976	Amps	EMERGENCY	1023	104.7	1061.4	108.7	4
Q194SWST	230	Q166	230	#1	1	125	976	Amps	EMERGENCY	1022	104.6	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	256	976	Amps	EMERGENCY	1024	104.8	1062.6	108.8	4
Q194SWST	230	Q166	230	#1	1	264	976	Amps	EMERGENCY	1022	104.7	1061.2	108.7	4
Q194SWST	230	Q166	230	#1	1	270	976	Amps	EMERGENCY	1023	104.8	1061.8	108.7	4
Q194SWST	230	Q166	230	#1	1	292	976	Amps	EMERGENCY	1025	104.9	1063.4	108.9	4
Q194SWST	230	Q166	230	#1	1	212	976	Amps	EMERGENCY	1022	104.7	1060.9	108.7	4
Q194SWST	230	Q166	230	#1	1	269	976	Amps	EMERGENCY	1022	104.7	1061.3	108.7	4
Q194SWST	230	Q166	230	#1	1	290	976	Amps	EMERGENCY	1023	104.7	1061.6	108.7	4
Q194SWST	230	Q166	230	#1	1	45	976	Amps	EMERGENCY	1022	104.7	1060.9	108.7	4
Q194SWST	230	Q166	230	#1	1	75	976	Amps	EMERGENCY	1022	104.7	1060.9	108.7	4
Q194SWST	230	Q166	230	#1	1	289	976	Amps	EMERGENCY	1022	104.7	1060.9	108.7	4
Q194SWST	230	Q166	230	#1	1	54	976	Amps	EMERGENCY	1022	104.7	1061.1	108.7	4
Q194SWST	230	Q166	230	#1	1	214	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	249	976	Amps	EMERGENCY	1022	104.7	1060.9	108.6	4
Q194SWST	230	Q166	230	#1	1	416	976	Amps	EMERGENCY	1022	104.7	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	43	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	58	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	218	976	Amps	EMERGENCY	1021	104.6	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	250	976	Amps	EMERGENCY	1022	104.7	1060.7	108.6	4
Q194SWST	230	Q166	230	#1	1	257	976	Amps	EMERGENCY	1022	104.7	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	263	976	Amps	EMERGENCY	1022	104.7	1060.9	108.6	4
Q194SWST	230	Q166	230	#1	1	26	976	Amps	EMERGENCY	1022	104.7	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	24	976	Amps	EMERGENCY	1022	104.7	1060.7	108.6	4
Q194SWST	230	Q166	230	#1	1	30	976	Amps	EMERGENCY	1022	104.7	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	59	976	Amps	EMERGENCY	1022	104.6	1060.4	108.6	4
Q194SWST	230	Q166	230	#1	1	226	976	Amps	EMERGENCY	1021	104.6	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	243	976	Amps	EMERGENCY	1022	104.6	1060.4	108.6	4
Q194SWST	230	Q166	230	#1	1	244	976	Amps	EMERGENCY	1022	104.6	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	245	976	Amps	EMERGENCY	1022	104.7	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	246	976	Amps	EMERGENCY	1022	104.7	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	262	976	Amps	EMERGENCY	1022	104.7	1061	108.7	4
Q194SWST	230	Q166	230	#1	1	266	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4

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Category B outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
Q194SWST	230	Q166	230	#1	1	295	976	Amps	EMERGENCY	1022	104.6	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	53	976	Amps	EMERGENCY	1022	104.6	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	261	976	Amps	EMERGENCY	1022	104.6	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	282	976	Amps	EMERGENCY	1022	104.6	1060.4	108.6	4
Q194SWST	230	Q166	230	#1	1	279	976	Amps	EMERGENCY	1026	105.1	1064.5	109	4
Q194SWST	230	Q166	230	#1	1	273	976	Amps	EMERGENCY	1022	104.6	1060.4	108.6	4
TOMATAK	70	MENDOTA	70	#1	1	70	396	Amps	EMERGENCY	404	102	418	105.6	3.6
ORO LOMA	70	DOS PALS	70	#1	1	1	282	Amps	EMERGENCY	282	100	291.4	103.3	3.3
ORO LOMA	70	DOS PALS	70	#1	1	126	282	Amps	EMERGENCY	278	98.5	286.9	101.7	3.3
Q194SWST	230	MIDWAY	230	#1	1	205	976	Amps	EMERGENCY	1748	179.1	1777.5	182	3
Q166	230	MIDWAY	230	#1	1	205	976	Amps	EMERGENCY	1735	177.7	1763.6	180.6	3
Q194SWST	230	MIDWAY	230	#1	1	434	976	Amps	EMERGENCY	1747	178.9	1776.2	181.9	3
Q194SWST	230	MIDWAY	230	#1	1	204	976	Amps	EMERGENCY	1709	175	1737.5	177.9	3
Q194SWST	230	MIDWAY	230	#1	1	379	976	Amps	EMERGENCY	1746	178.9	1775.3	181.8	3
Q166	230	MIDWAY	230	#1	1	434	976	Amps	EMERGENCY	1734	177.5	1762.4	180.5	3
Q194SWST	230	MIDWAY	230	#1	1	378	976	Amps	EMERGENCY	1707	174.8	1735.4	177.7	3
Q166	230	MIDWAY	230	#1	1	204	976	Amps	EMERGENCY	1695	173.6	1723.8	176.5	3
Q166	230	MIDWAY	230	#1	1	379	976	Amps	EMERGENCY	1733	177.4	1761.5	180.4	3
Q194SWST	230	MIDWAY	230	#1	1	433	976	Amps	EMERGENCY	1708	174.9	1736.3	177.8	3
Q194SWST	230	MIDWAY	230	#1	1	395	976	Amps	EMERGENCY	1704	174.5	1732.9	177.5	3
Q166	230	MIDWAY	230	#1	1	378	976	Amps	EMERGENCY	1693	173.4	1721.7	176.3	3
Q166	230	MIDWAY	230	#1	1	433	976	Amps	EMERGENCY	1694	173.5	1722.6	176.4	2.9
Q194SWST	230	MIDWAY	230	#1	1	396	976	Amps	EMERGENCY	1744	178.6	1772.7	181.5	2.9
Q166	230	MIDWAY	230	#1	1	395	976	Amps	EMERGENCY	1690	173.1	1719.1	176.1	2.9
Q166	230	MIDWAY	230	#1	1	396	976	Amps	EMERGENCY	1730	177.2	1758.9	180.1	2.9
Q194SWST	230	MIDWAY	230	#1	1	412	976	Amps	EMERGENCY	1695	173.6	1723.8	176.5	2.9
Q166	230	MIDWAY	230	#1	1	412	976	Amps	EMERGENCY	1682	172.2	1710.1	175.1	2.9
Q194SWST	230	MIDWAY	230	#1	1	413	976	Amps	EMERGENCY	1735	177.7	1763.5	180.6	2.9
Q166	230	MIDWAY	230	#1	1	413	976	Amps	EMERGENCY	1722	176.3	1749.7	179.2	2.9
Q194SWST	230	Q166	230	#1	1	204	976	Amps	EMERGENCY	1236	126.6	1263.5	129.4	2.8
Q166	230	Q194SWST	230	#1	1	205	976	Amps	EMERGENCY	1275	130.5	1302.1	133.3	2.8
Q194SWST	230	Q166	230	#1	1	395	976	Amps	EMERGENCY	1232	126.2	1259.2	129	2.8
Q194SWST	230	Q166	230	#1	1	378	976	Amps	EMERGENCY	1234	126.4	1261.5	129.2	2.8
Q194SWST	230	Q166	230	#1	1	433	976	Amps	EMERGENCY	1235	126.5	1262.3	129.3	2.8
Q166	230	Q194SWST	230	#1	1	434	976	Amps	EMERGENCY	1274	130.4	1300.9	133.2	2.8
Q166	230	Q194SWST	230	#1	1	379	976	Amps	EMERGENCY	1273	130.3	1300.1	133.1	2.8
Q166	230	Q194SWST	230	#1	1	396	976	Amps	EMERGENCY	1270	130.1	1297.7	132.9	2.8
Q194SWST	230	Q166	230	#1	1	412	976	Amps	EMERGENCY	1224	125.3	1250.9	128.1	2.8
Q166	230	Q194SWST	230	#1	1	413	976	Amps	EMERGENCY	1262	129.3	1289.3	132	2.8
ORO LOMA	70	DOS PALS	70	#1	1	71	282	Amps	EMERGENCY	279	99	286.5	101.6	2.6
ORO LOMA	70	DOS PALS	70	#1	1	72	282	Amps	EMERGENCY	281	99.5	288	102.1	2.6

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PST_PCT (%)	DELTA_PCT (%)
PSE-BEAR	9.11	BEAR MTN	115	#1	0	286	48	MVA	EMERGENCY	48	100.7	49.5	103.2	2.5
EXCHEQUR	70	MCSWAINJ	70	#1	1	27	280	Amps	EMERGENCY	308	109.9	313	111.6	1.8
DOS PALS	70	ORO LOMA	70	#1	1	48	282	Amps	EMERGENCY	321	113.8	326	115.6	1.7
EXCHEQUR	70	MCSWAINJ	70	#1	1	122	280	Amps	EMERGENCY	306	109	310.2	110.6	1.6
PSE-BEAR	9.11	BEAR MTN	115	#1	0	2	48	MVA	EMERGENCY	48	99.7	48.3	100.7	1
PSE-BEAR	9.11	BEAR MTN	115	#1	0	151	48	MVA	EMERGENCY	48	99.6	48.3	100.6	1
PSE-BEAR	9.11	BEAR MTN	115	#1	0	152	48	MVA	EMERGENCY	48	99.6	48.3	100.6	1
TEMPLETN	230	GATES	230	#1	1	205	975	Amps	EMERGENCY	1186	121.7	1130.1	115.9	-5.8
TEMPLETN	230	GATES	230	#1	1	379	975	Amps	EMERGENCY	1189	122	1133.1	116.2	-5.8
TEMPLETN	230	GATES	230	#1	1	434	975	Amps	EMERGENCY	1188	121.9	1132.1	116.1	-5.8
TEMPLETN	230	GATES	230	#1	1	396	975	Amps	EMERGENCY	1193	122.4	1137.1	116.6	-5.8
TEMPLETN	230	GATES	230	#1	1	413	975	Amps	EMERGENCY	1207	123.8	1150.8	118	-5.8
MORROBAY	230	GATES	230	#1	1	412	975	Amps	EMERGENCY	1263	129.6	1206.5	123.8	-5.8
MORROBAY	230	GATES	230	#1	1	433	975	Amps	EMERGENCY	1244	127.6	1187.6	121.8	-5.8
MORROBAY	230	GATES	230	#1	1	204	975	Amps	EMERGENCY	1242	127.4	1185.5	121.6	-5.8
MORROBAY	230	GATES	230	#1	1	378	975	Amps	EMERGENCY	1246	127.8	1188.6	121.9	-5.8
MORROBAY	230	GATES	230	#1	1	395	975	Amps	EMERGENCY	1250	128.2	1192.6	122.3	-5.8

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
PANOCHE	230	LOSBANOS	230	#2	1	18	850	Amps	EMERGENCY	852	100	979.5	115.3	15
WILSON	230	WARNERVL	230	#1	1	17	793	Amps	EMERGENCY	1026	129	1136.3	143.3	13.8
PANOCHE	230	LOSBANOS	230	#1	1	7	975	Amps	EMERGENCY	978	100	1111.3	114	13.7
PANOCHE	230	LOSBANOS	230	#1	1	6	975	Amps	EMERGENCY	897	92	1030.2	105.7	13.7
DS AMIGO	230	LOSBANOS	230	#1	1	19	850	Amps	EMERGENCY	760	89	872.7	102.7	13.3
PANOCHE	230	DS AMIGO	230	#1	1	19	850	Amps	EMERGENCY	977	115	1089.5	128.2	13.2
LOSBANOS	230	WESTLEY	230	#1	1	12	1700	Amps	EMERGENCY	1655	97	1873.1	110.2	12.8
LOSBANOS	230	WESTLEY	230	#1	1	10	1700	Amps	EMERGENCY	1724	101	1941.5	114.2	12.8
WILSON	230	WARNERVL	230	#1	1	19	793	Amps	EMERGENCY	1022	129	1121.3	141.4	12.5
LE GRAND	115	WILSON A	115	#1	1	13	512	Amps	EMERGENCY	1013	198	1076.5	210.2	12.5
WILSON	230	WARNERVL	230	#1	1	18	793	Amps	EMERGENCY	954	120	1051.8	132.6	12.3
WILSON	230	WARNERVL	230	#1	1	7	793	Amps	EMERGENCY	968	122	1065.3	134.3	12.2
WILSON	230	WARNERVL	230	#1	1	6	793	Amps	EMERGENCY	953	120	1050	132.4	12.2
LOSBANOS	230	WESTLEY	230	#1	1	13	1700	Amps	EMERGENCY	1798	106	2004.5	117.9	12.2
WILSON	230	WARNERVL	230	#1	1	20	793	Amps	EMERGENCY	903	114	998.1	125.8	12
LOSBANOS	230	WESTLEY	230	#1	1	15	1700	Amps	EMERGENCY	1615	95	1818.3	107	12

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
LE GRAND	115	WILSON A	115	#1	1	14	512	Amps	EMERGENCY	584	114	645	126	12
WILSON	230	WARNERVL	230	#1	1	58	793	Amps	EMERGENCY	1044	132	1138.8	143.6	11.9
OAKH_JCT	115	SHARON T	115	#1	1	13	397	Amps	EMERGENCY	596	150	643.4	162.2	11.9
WILSON	230	WARNERVL	230	#1	1	16	793	Amps	EMERGENCY	1029	130	1123.2	141.6	11.8
WILSON	230	WARNERVL	230	#1	1	57	793	Amps	EMERGENCY	1029	130	1123.2	141.6	11.8
CERTANJ1	115	CHWCHLLA	115	#1	1	13	397	Amps	EMERGENCY	571	144	617.5	155.7	11.8
WILSON	230	WARNERVL	230	#1	1	15	793	Amps	EMERGENCY	933	118	1026.1	129.4	11.8
SHARON T	115	CERTANJ1	115	#1	1	13	397	Amps	EMERGENCY	572	144	618.6	156	11.8
WILSON	230	WARNERVL	230	#1	1	71	793	Amps	EMERGENCY	1022	129	1112.2	140.2	11.3
WILSON	230	WARNERVL	230	#1	1	77	793	Amps	EMERGENCY	934	118	1023.5	129	11.3
WILSON	230	WARNERVL	230	#1	1	63	793	Amps	EMERGENCY	1010	127	1099.5	138.6	11.3
WILSON	230	WARNERVL	230	#1	1	62	793	Amps	EMERGENCY	914	115	1004	126.6	11.3
WILSON	230	WARNERVL	230	#1	1	72	793	Amps	EMERGENCY	933	118	1022.1	128.9	11.3
WILSON	230	WARNERVL	230	#1	1	32	793	Amps	EMERGENCY	917	116	1005.5	126.8	11.2
WILSON	230	WARNERVL	230	#1	1	27	793	Amps	EMERGENCY	953	120	1041.4	131.3	11.1
WILSON	230	WARNERVL	230	#1	1	47	793	Amps	EMERGENCY	992	125	1080.1	136.2	11.1
WILSON	230	WARNERVL	230	#1	1	22	793	Amps	EMERGENCY	940	119	1027.8	129.6	11.1
WILSON	230	WARNERVL	230	#1	1	76	793	Amps	EMERGENCY	998	126	1086	136.9	11.1
LOSBANOS	230	WESTLEY	230	#1	1	25	1700	Amps	EMERGENCY	1535	90	1723.1	101.4	11.1
WILSON	230	WARNERVL	230	#1	1	105	793	Amps	EMERGENCY	958	121	1045.6	131.8	11.1
WILSON	230	WARNERVL	230	#1	1	28	793	Amps	EMERGENCY	934	118	1021.8	128.8	11.1
WILSON	230	WARNERVL	230	#1	1	54	793	Amps	EMERGENCY	948	120	1036.1	130.6	11
LOSBANOS	230	WESTLEY	230	#1	1	24	1700	Amps	EMERGENCY	1529	90	1716.9	101	11
LOSBANOS	230	WESTLEY	230	#1	1	91	1700	Amps	EMERGENCY	1553	91	1741.1	102.4	11
WARNERVL	230	COTTLE B	230	#1	1	11	793	Amps	EMERGENCY	991	125	1078.8	136	11
WILSON	230	WARNERVL	230	#1	1	118	793	Amps	EMERGENCY	932	118	1019.9	128.6	11
WILSON	230	WARNERVL	230	#1	1	41	793	Amps	EMERGENCY	952	120	1039.2	131	11
WILSON	230	WARNERVL	230	#1	1	104	793	Amps	EMERGENCY	956	121	1043.8	131.6	11
WILSON	230	WARNERVL	230	#1	1	34	793	Amps	EMERGENCY	906	114	993.8	125.3	11
LOSBANOS	230	WESTLEY	230	#1	1	76	1700	Amps	EMERGENCY	1578	93	1765.1	103.8	11
WILSON	230	WARNERVL	230	#1	1	103	793	Amps	EMERGENCY	928	117	1015.8	128.1	11
LOSBANOS	230	WESTLEY	230	#1	1	47	1700	Amps	EMERGENCY	1581	93	1768.2	104	11
WILSON	230	WARNERVL	230	#1	1	90	793	Amps	EMERGENCY	931	117	1018	128.3	11
LOSBANOS	230	WESTLEY	230	#1	1	48	1700	Amps	EMERGENCY	1567	92	1754	103.2	11
WILSON	230	WARNERVL	230	#1	1	97	793	Amps	EMERGENCY	922	116	1009.4	127.3	11
WILSON	230	WARNERVL	230	#1	1	53	793	Amps	EMERGENCY	919	116	1006.5	126.9	11
WILSON	230	WARNERVL	230	#1	1	98	793	Amps	EMERGENCY	919	116	1006.5	126.9	11
LOSBANOS	230	WESTLEY	230	#1	1	3	1700	Amps	EMERGENCY	1533	90	1720.2	101.2	11
WILSON	230	WARNERVL	230	#1	1	74	793	Amps	EMERGENCY	933	118	1020.1	128.6	11
WILSON	230	WARNERVL	230	#1	1	127	793	Amps	EMERGENCY	895	113	982.7	123.9	11
LOSBANOS	230	WESTLEY	230	#1	1	85	1700	Amps	EMERGENCY	1528	90	1715.3	100.9	11

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	75	793	Amps	EMERGENCY	921	116	1008.5	127.1	11
WILSON	230	WARNERVL	230	#1	1	125	793	Amps	EMERGENCY	907	114	994.4	125.4	11
WILSON	230	WARNERVL	230	#1	1	36	793	Amps	EMERGENCY	898	113	985.4	124.2	11
WILSON	230	WARNERVL	230	#1	1	88	793	Amps	EMERGENCY	914	115	1001.6	126.3	11
LOSBANOS	230	WESTLEY	230	#1	1	104	1700	Amps	EMERGENCY	1563	92	1749.7	102.9	11
COTTLE B	230	BELLOTA	230	#1	1	11	793	Amps	EMERGENCY	914	115	1001.8	126.3	11
WILSON	230	WARNERVL	230	#1	1	89	793	Amps	EMERGENCY	914	115	1001.4	126.3	11
LOSBANOS	230	WESTLEY	230	#1	1	105	1700	Amps	EMERGENCY	1559	92	1746.4	102.7	11
WILSON	230	WARNERVL	230	#1	1	40	793	Amps	EMERGENCY	917	116	1004.1	126.6	11
LOSBANOS	230	WESTLEY	230	#1	1	99	1700	Amps	EMERGENCY	1554	91	1741.2	102.4	11
LOSBANOS	230	WESTLEY	230	#1	1	54	1700	Amps	EMERGENCY	1577	93	1764.2	103.8	11
LOSBANOS	230	WESTLEY	230	#1	1	29	1700	Amps	EMERGENCY	1532	90	1719.3	101.1	11
LOSBANOS	230	WESTLEY	230	#1	1	44	1700	Amps	EMERGENCY	1549	91	1735.9	102.1	11
WILSON	230	WARNERVL	230	#1	1	49	793	Amps	EMERGENCY	908	114	995.2	125.5	11
WILSON	230	WARNERVL	230	#1	1	108	793	Amps	EMERGENCY	908	114	995.2	125.5	11
LOSBANOS	230	WESTLEY	230	#1	1	41	1700	Amps	EMERGENCY	1542	91	1728.4	101.7	11
LOSBANOS	230	WESTLEY	230	#1	1	100	1700	Amps	EMERGENCY	1547	91	1733.9	102	11
LOSBANOS	230	WESTLEY	230	#1	1	46	1700	Amps	EMERGENCY	1524	90	1710.5	100.6	11
WILSON	230	WARNERVL	230	#1	1	114	793	Amps	EMERGENCY	904	114	991.1	125	11
WILSON	230	WARNERVL	230	#1	1	119	793	Amps	EMERGENCY	901	114	988.3	124.6	11
WILSON	230	WARNERVL	230	#1	1	123	793	Amps	EMERGENCY	905	114	991.7	125	11
WILSON	230	WARNERVL	230	#1	1	124	793	Amps	EMERGENCY	903	114	990.1	124.8	11
WILSON	230	WARNERVL	230	#1	1	135	793	Amps	EMERGENCY	904	114	991.2	125	11
WILSON	230	WARNERVL	230	#1	1	38	793	Amps	EMERGENCY	902	114	989.2	124.7	11
LOSBANOS	230	WESTLEY	230	#1	1	74	1700	Amps	EMERGENCY	1541	91	1727.9	101.7	11
LOSBANOS	230	WESTLEY	230	#1	1	118	1700	Amps	EMERGENCY	1548	91	1735	102.1	11
WILSON	230	WARNERVL	230	#1	1	39	793	Amps	EMERGENCY	899	113	986	124.3	11
LOSBANOS	230	WESTLEY	230	#1	1	34	1700	Amps	EMERGENCY	1561	92	1747.5	102.8	11
WILSON	230	WARNERVL	230	#1	1	109	793	Amps	EMERGENCY	896	113	982.7	123.9	11
WILSON	230	WARNERVL	230	#1	1	134	793	Amps	EMERGENCY	897	113	984.4	124.1	11
WILSON	230	WARNERVL	230	#1	1	107	793	Amps	EMERGENCY	904	114	991.4	125	11
WILSON	230	WARNERVL	230	#1	1	112	793	Amps	EMERGENCY	897	113	983.8	124	11
WILSON	230	WARNERVL	230	#1	1	126	793	Amps	EMERGENCY	897	113	984.3	124.1	11
WILSON	230	WARNERVL	230	#1	1	132	793	Amps	EMERGENCY	897	113	984	124.1	11
LOSBANOS	230	WESTLEY	230	#1	1	90	1700	Amps	EMERGENCY	1550	91	1737	102.2	11
WILSON	230	WARNERVL	230	#1	1	95	793	Amps	EMERGENCY	906	114	993.1	125.2	11
WILSON	230	WARNERVL	230	#1	1	122	793	Amps	EMERGENCY	913	115	1000	126.1	11
LOSBANOS	230	WESTLEY	230	#1	1	103	1700	Amps	EMERGENCY	1541	91	1727.7	101.6	11
LOSBANOS	230	WESTLEY	230	#1	1	53	1700	Amps	EMERGENCY	1546	91	1732.9	101.9	11
LOSBANOS	230	WESTLEY	230	#1	1	98	1700	Amps	EMERGENCY	1546	91	1732.9	101.9	11
WILSON	230	WARNERVL	230	#1	1	128	793	Amps	EMERGENCY	895	113	982.4	123.8	11

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
LOSBANOS	230	WESTLEY	230	#1	1	97	1700	Amps	EMERGENCY	1549	91	1735.9	102.1	11
LOSBANOS	230	WESTLEY	230	#1	1	21	1700	Amps	EMERGENCY	1528	90	1714.3	100.9	11
LOSBANOS	230	WESTLEY	230	#1	1	122	1700	Amps	EMERGENCY	1542	91	1728.8	101.7	11
LOSBANOS	230	WESTLEY	230	#1	1	27	1700	Amps	EMERGENCY	1535	90	1722	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	28	1700	Amps	EMERGENCY	1532	90	1718.9	101.1	11
LOSBANOS	230	WESTLEY	230	#1	1	75	1700	Amps	EMERGENCY	1535	90	1721.2	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	22	1700	Amps	EMERGENCY	1532	90	1718.3	101.1	11
LOSBANOS	230	WESTLEY	230	#1	1	40	1700	Amps	EMERGENCY	1531	90	1717.3	101	11
LOSBANOS	230	WESTLEY	230	#1	1	88	1700	Amps	EMERGENCY	1536	90	1722.6	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	125	1700	Amps	EMERGENCY	1536	90	1722.4	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	89	1700	Amps	EMERGENCY	1536	90	1722.4	101.3	11
LOSBANOS	230	WESTLEY	230	#1	1	127	1700	Amps	EMERGENCY	1522	90	1708.5	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	95	1700	Amps	EMERGENCY	1538	90	1723.9	101.4	11
WILSON	230	WARNERVL	230	#1	1	113	793	Amps	EMERGENCY	901	114	987.7	124.5	11
LOSBANOS	230	WESTLEY	230	#1	1	49	1700	Amps	EMERGENCY	1535	90	1721	101.2	11
LOSBANOS	230	WESTLEY	230	#1	1	108	1700	Amps	EMERGENCY	1535	90	1721	101.2	11
WILSON	230	WARNERVL	230	#1	1	116	793	Amps	EMERGENCY	895	113	982.3	123.8	11
LOSBANOS	230	WESTLEY	230	#1	1	113	1700	Amps	EMERGENCY	1523	90	1709.3	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	114	1700	Amps	EMERGENCY	1527	90	1713.3	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	119	1700	Amps	EMERGENCY	1533	90	1718.9	101.1	11
LOSBANOS	230	WESTLEY	230	#1	1	135	1700	Amps	EMERGENCY	1530	90	1716.7	101	11
LOSBANOS	230	WESTLEY	230	#1	1	124	1700	Amps	EMERGENCY	1526	90	1712.6	100.7	11
WILSON	230	WARNERVL	230	#1	1	117	793	Amps	EMERGENCY	897	113	984.3	124.1	11
LOSBANOS	230	WESTLEY	230	#1	1	107	1700	Amps	EMERGENCY	1530	90	1716.5	101	11
LOSBANOS	230	WESTLEY	230	#1	1	123	1700	Amps	EMERGENCY	1529	90	1715.6	100.9	11
LOSBANOS	230	WESTLEY	230	#1	1	117	1700	Amps	EMERGENCY	1523	90	1709.5	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	109	1700	Amps	EMERGENCY	1524	90	1710.3	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	37	1700	Amps	EMERGENCY	1522	90	1708	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	38	1700	Amps	EMERGENCY	1524	90	1709.8	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	132	1700	Amps	EMERGENCY	1525	90	1711.4	100.7	11
LOSBANOS	230	WESTLEY	230	#1	1	134	1700	Amps	EMERGENCY	1527	90	1712.8	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	52	1700	Amps	EMERGENCY	1523	90	1709.2	100.6	11
LOSBANOS	230	WESTLEY	230	#1	1	39	1700	Amps	EMERGENCY	1522	90	1708.2	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	94	1700	Amps	EMERGENCY	1526	90	1712.7	100.8	11
LOSBANOS	230	WESTLEY	230	#1	1	112	1700	Amps	EMERGENCY	1523	90	1709.1	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	126	1700	Amps	EMERGENCY	1523	90	1709.2	100.5	11
LOSBANOS	230	WESTLEY	230	#1	1	128	1700	Amps	EMERGENCY	1522	90	1708.3	100.5	11
WILSON	230	WARNERVL	230	#1	1	43	793	Amps	EMERGENCY	898	113	984.4	124.1	11
WILSON	230	WARNERVL	230	#1	1	99	793	Amps	EMERGENCY	938	118	1024.9	129.2	11
WILSON	230	WARNERVL	230	#1	1	130	793	Amps	EMERGENCY	896	113	982.9	123.9	11
LOSBANOS	230	WESTLEY	230	#1	1	36	1700	Amps	EMERGENCY	1521	90	1707.5	100.5	11

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
WILSON	230	WARNERVL	230	#1	1	100	793	Amps	EMERGENCY	932	118	1019.1	128.5	11
LOSBANOS	230	WESTLEY	230	#1	1	81	1700	Amps	EMERGENCY	1524	90	1709.8	100.6	10.9
LOSBANOS	230	WESTLEY	230	#1	1	110	1700	Amps	EMERGENCY	1521	89	1707.1	100.4	10.9
WILSON	230	WARNERVL	230	#1	1	93	793	Amps	EMERGENCY	896	113	982.9	123.9	10.9
WILSON	230	WARNERVL	230	#1	1	81	793	Amps	EMERGENCY	899	113	986	124.3	10.9
WILSON	230	WARNERVL	230	#1	1	129	793	Amps	EMERGENCY	897	113	983.5	124	10.9
LOSBANOS	230	WESTLEY	230	#1	1	43	1700	Amps	EMERGENCY	1527	90	1712.6	100.7	10.9
LOSBANOS	230	WESTLEY	230	#1	1	130	1700	Amps	EMERGENCY	1524	90	1709.6	100.6	10.9
WILSON	230	WARNERVL	230	#1	1	73	793	Amps	EMERGENCY	907	114	993.3	125.2	10.9
WILSON	230	WARNERVL	230	#1	1	110	793	Amps	EMERGENCY	898	113	984.5	124.1	10.9
WILSON	230	WARNERVL	230	#1	1	131	793	Amps	EMERGENCY	896	113	982.3	123.8	10.9
LOSBANOS	230	WESTLEY	230	#1	1	93	1700	Amps	EMERGENCY	1525	90	1710.5	100.6	10.9
LOSBANOS	230	WESTLEY	230	#1	1	129	1700	Amps	EMERGENCY	1526	90	1711.5	100.7	10.9
LOSBANOS	230	WESTLEY	230	#1	1	131	1700	Amps	EMERGENCY	1522	90	1707	100.4	10.9
WILSON	230	WARNERVL	230	#1	1	101	793	Amps	EMERGENCY	908	114	994.2	125.3	10.9
WILSON	230	WARNERVL	230	#1	1	29	793	Amps	EMERGENCY	900	114	986.5	124.4	10.9
WILSON	230	WARNERVL	230	#1	1	102	793	Amps	EMERGENCY	913	115	999.1	126	10.9
WILSON	230	WARNERVL	230	#1	1	21	793	Amps	EMERGENCY	902	114	987.8	124.5	10.9
WILSON	230	WARNERVL	230	#1	1	3	793	Amps	EMERGENCY	902	114	987.8	124.5	10.9
WILSON	230	WARNERVL	230	#1	1	48	793	Amps	EMERGENCY	946	119	1032.1	130.1	10.8
WILSON	230	WARNERVL	230	#1	1	26	793	Amps	EMERGENCY	906	114	991.3	125	10.8
WILSON	230	WARNERVL	230	#1	1	45	793	Amps	EMERGENCY	914	115	998.8	125.9	10.7
WILSON	230	WARNERVL	230	#1	1	46	793	Amps	EMERGENCY	897	113	982.3	123.8	10.7
WILSON	230	WARNERVL	230	#1	1	85	793	Amps	EMERGENCY	930	117	1013.8	127.8	10.6
CERTAN T	115	LE GRAND	115	#1	1	13	397	Amps	EMERGENCY	675	170	716.3	180.6	10.4
WILSON	230	WARNERVL	230	#1	1	59	793	Amps	EMERGENCY	1030	130	1111.4	140.1	10.3
CERTAN T	115	LE GRAND	115	#1	1	14	397	Amps	EMERGENCY	370	93	410.3	103.5	10.2
WARNERVL	230	COTTLE B	230	#1	1	17	793	Amps	EMERGENCY	995	125	1072.1	135.2	9.7
WARNERVL	230	COTTLE B	230	#1	1	19	793	Amps	EMERGENCY	1052	133	1128.3	142.3	9.7
COTTLE B	230	BELLOTA	230	#1	1	17	793	Amps	EMERGENCY	918	116	994.9	125.4	9.7
COTTLE B	230	BELLOTA	230	#1	1	19	793	Amps	EMERGENCY	975	123	1051.1	132.5	9.6
WARNERVL	230	COTTLE B	230	#1	1	18	793	Amps	EMERGENCY	1010	127	1085.9	136.9	9.6
WARNERVL	230	COTTLE B	230	#1	1	15	793	Amps	EMERGENCY	1009	127	1085.1	136.8	9.6
WARNERVL	230	COTTLE B	230	#1	1	7	793	Amps	EMERGENCY	1018	128	1093.4	137.8	9.5
COTTLE B	230	BELLOTA	230	#1	1	18	793	Amps	EMERGENCY	933	118	1008.9	127.2	9.5
COTTLE B	230	BELLOTA	230	#1	1	15	793	Amps	EMERGENCY	933	118	1008	127.1	9.5
WARNERVL	230	COTTLE B	230	#1	1	6	793	Amps	EMERGENCY	1010	127	1085.8	136.9	9.5
COTTLE B	230	BELLOTA	230	#1	1	7	793	Amps	EMERGENCY	941	119	1016.3	128.1	9.5
COTTLE B	230	BELLOTA	230	#1	1	6	793	Amps	EMERGENCY	934	118	1008.7	127.2	9.5
WARNERVL	230	COTTLE B	230	#1	1	58	793	Amps	EMERGENCY	1071	135	1145.9	144.5	9.4
WARNERVL	230	COTTLE B	230	#1	1	16	793	Amps	EMERGENCY	1062	134	1136.7	143.3	9.4

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	57	793	Amps	EMERGENCY	1062	134	1136.7	143.3	9.4
COTTLE B	230	BELLOTA	230	#1	1	58	793	Amps	EMERGENCY	994	125	1068.7	134.7	9.4
COTTLE B	230	BELLOTA	230	#1	1	16	793	Amps	EMERGENCY	985	124	1059.5	133.6	9.4
COTTLE B	230	BELLOTA	230	#1	1	57	793	Amps	EMERGENCY	985	124	1059.5	133.6	9.4
STOREY 1	230	BORDEN	230	#1	1	17	793	Amps	EMERGENCY	1086	137	1158.8	146.1	9.1
WARNERVL	230	COTTLE B	230	#1	1	71	793	Amps	EMERGENCY	1062	134	1133.9	143	9.1
WARNERVL	230	COTTLE B	230	#1	1	63	793	Amps	EMERGENCY	1051	133	1123.1	141.6	9.1
WARNERVL	230	COTTLE B	230	#1	1	77	793	Amps	EMERGENCY	1003	126	1075.3	135.6	9.1
COTTLE B	230	BELLOTA	230	#1	1	71	793	Amps	EMERGENCY	985	124	1056.7	133.2	9.1
WARNERVL	230	COTTLE B	230	#1	1	62	793	Amps	EMERGENCY	993	125	1064.4	134.2	9.1
COTTLE B	230	BELLOTA	230	#1	1	63	793	Amps	EMERGENCY	974	123	1045.9	131.9	9
COTTLE B	230	BELLOTA	230	#1	1	77	793	Amps	EMERGENCY	927	117	998.3	125.9	9
WARNERVL	230	COTTLE B	230	#1	1	72	793	Amps	EMERGENCY	1004	127	1075.6	135.6	9
COTTLE B	230	BELLOTA	230	#1	1	62	793	Amps	EMERGENCY	916	115	987.4	124.5	9
COTTLE B	230	BELLOTA	230	#1	1	72	793	Amps	EMERGENCY	927	117	998.5	125.9	9
WARNERVL	230	COTTLE B	230	#1	1	32	793	Amps	EMERGENCY	995	125	1066.4	134.4	9
WARNERVL	230	COTTLE B	230	#1	1	47	793	Amps	EMERGENCY	1047	132	1118.2	141	8.9
WARNERVL	230	COTTLE B	230	#1	1	76	793	Amps	EMERGENCY	1050	132	1120.6	141.3	8.9
COTTLE B	230	BELLOTA	230	#1	1	32	793	Amps	EMERGENCY	919	116	989.4	124.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	27	793	Amps	EMERGENCY	1025	129	1095.4	138.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	105	793	Amps	EMERGENCY	1024	129	1094.7	138	8.9
WARNERVL	230	COTTLE B	230	#1	1	22	793	Amps	EMERGENCY	1015	128	1085.4	136.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	54	793	Amps	EMERGENCY	1018	128	1088.8	137.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	28	793	Amps	EMERGENCY	1009	127	1079.4	136.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	118	793	Amps	EMERGENCY	1007	127	1077.6	135.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	104	793	Amps	EMERGENCY	1023	129	1093.8	137.9	8.9
COTTLE B	230	BELLOTA	230	#1	1	47	793	Amps	EMERGENCY	970	122	1040.9	131.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	34	793	Amps	EMERGENCY	991	125	1061.5	133.8	8.9
WARNERVL	230	COTTLE B	230	#1	1	103	793	Amps	EMERGENCY	1004	127	1074.6	135.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	90	793	Amps	EMERGENCY	1006	127	1076.2	135.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	41	793	Amps	EMERGENCY	1020	129	1090.6	137.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	74	793	Amps	EMERGENCY	1006	127	1076.5	135.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	97	793	Amps	EMERGENCY	1000	126	1070.4	134.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	53	793	Amps	EMERGENCY	998	126	1068.3	134.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	98	793	Amps	EMERGENCY	998	126	1068.3	134.7	8.9
COTTLE B	230	BELLOTA	230	#1	1	76	793	Amps	EMERGENCY	973	123	1043.3	131.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	75	793	Amps	EMERGENCY	999	126	1069.2	134.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	27	793	Amps	EMERGENCY	948	119	1018.3	128.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	127	793	Amps	EMERGENCY	982	124	1052.2	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	40	793	Amps	EMERGENCY	996	126	1066.2	134.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	125	793	Amps	EMERGENCY	990	125	1060.1	133.6	8.9

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	88	793	Amps	EMERGENCY	994	125	1064.9	134.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	36	793	Amps	EMERGENCY	983	124	1053.8	132.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	89	793	Amps	EMERGENCY	994	125	1064.8	134.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	49	793	Amps	EMERGENCY	990	125	1060.6	133.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	108	793	Amps	EMERGENCY	990	125	1060.6	133.7	8.9
COTTLE B	230	BELLOTA	230	#1	1	105	793	Amps	EMERGENCY	947	119	1017.6	128.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	114	793	Amps	EMERGENCY	987	124	1057.7	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	119	793	Amps	EMERGENCY	986	124	1056	133.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	123	793	Amps	EMERGENCY	988	125	1058	133.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	124	793	Amps	EMERGENCY	987	124	1057	133.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	38	793	Amps	EMERGENCY	986	124	1056.3	133.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	135	793	Amps	EMERGENCY	987	124	1057.8	133.4	8.9
WARNERVL	230	COTTLE B	230	#1	1	39	793	Amps	EMERGENCY	984	124	1054.1	132.9	8.9
WARNERVL	230	COTTLE B	230	#1	1	95	793	Amps	EMERGENCY	989	125	1059.2	133.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	122	793	Amps	EMERGENCY	994	125	1064	134.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	132	793	Amps	EMERGENCY	983	124	1052.9	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	134	793	Amps	EMERGENCY	983	124	1053.2	132.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	22	793	Amps	EMERGENCY	938	118	1008.3	127.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	107	793	Amps	EMERGENCY	987	124	1057.8	133.4	8.9
COTTLE B	230	BELLOTA	230	#1	1	54	793	Amps	EMERGENCY	941	119	1011.6	127.5	8.9
WARNERVL	230	COTTLE B	230	#1	1	109	793	Amps	EMERGENCY	982	124	1052	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	112	793	Amps	EMERGENCY	982	124	1052.6	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	126	793	Amps	EMERGENCY	983	124	1053	132.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	128	793	Amps	EMERGENCY	981	124	1051.7	132.6	8.9
COTTLE B	230	BELLOTA	230	#1	1	28	793	Amps	EMERGENCY	932	118	1002.3	126.4	8.9
COTTLE B	230	BELLOTA	230	#1	1	118	793	Amps	EMERGENCY	930	117	1000.5	126.1	8.9
WARNERVL	230	COTTLE B	230	#1	1	113	793	Amps	EMERGENCY	985	124	1055.2	133	8.9
COTTLE B	230	BELLOTA	230	#1	1	34	793	Amps	EMERGENCY	914	115	984.5	124.1	8.9
COTTLE B	230	BELLOTA	230	#1	1	103	793	Amps	EMERGENCY	927	117	997.5	125.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	104	793	Amps	EMERGENCY	946	119	1016.6	128.2	8.9
WARNERVL	230	COTTLE B	230	#1	1	116	793	Amps	EMERGENCY	981	124	1051.5	132.6	8.9
WARNERVL	230	COTTLE B	230	#1	1	117	793	Amps	EMERGENCY	983	124	1053	132.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	41	793	Amps	EMERGENCY	943	119	1013.5	127.8	8.9
COTTLE B	230	BELLOTA	230	#1	1	74	793	Amps	EMERGENCY	929	117	999.4	126	8.9
COTTLE B	230	BELLOTA	230	#1	1	90	793	Amps	EMERGENCY	929	117	999.1	126	8.9
COTTLE B	230	BELLOTA	230	#1	1	53	793	Amps	EMERGENCY	921	116	991.3	125	8.9
COTTLE B	230	BELLOTA	230	#1	1	97	793	Amps	EMERGENCY	923	116	993.3	125.2	8.9
COTTLE B	230	BELLOTA	230	#1	1	98	793	Amps	EMERGENCY	921	116	991.3	125	8.9
WARNERVL	230	COTTLE B	230	#1	1	99	793	Amps	EMERGENCY	1011	127	1080.8	136.3	8.9
WARNERVL	230	COTTLE B	230	#1	1	100	793	Amps	EMERGENCY	1007	127	1076.7	135.7	8.9
WARNERVL	230	COTTLE B	230	#1	1	43	793	Amps	EMERGENCY	983	124	1053.2	132.8	8.8

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
WARNERVL	230	COTTLE B	230	#1	1	130	793	Amps	EMERGENCY	982	124	1052.1	132.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	75	793	Amps	EMERGENCY	922	116	992.2	125.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	36	793	Amps	EMERGENCY	907	114	976.8	123.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	88	793	Amps	EMERGENCY	918	116	987.8	124.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	125	793	Amps	EMERGENCY	913	115	983	123.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	127	793	Amps	EMERGENCY	905	114	975.2	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	40	793	Amps	EMERGENCY	919	116	989.2	124.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	89	793	Amps	EMERGENCY	918	116	987.7	124.5	8.8
LE GRNDJ	115	WILSON B	115	#1	1	13	398	Amps	EMERGENCY	389	98	424	106.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	49	793	Amps	EMERGENCY	913	115	983.5	124	8.8
COTTLE B	230	BELLOTA	230	#1	1	108	793	Amps	EMERGENCY	913	115	983.5	124	8.8
WARNERVL	230	COTTLE B	230	#1	1	81	793	Amps	EMERGENCY	984	124	1054.3	132.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	119	793	Amps	EMERGENCY	909	115	978.9	123.4	8.8
WARNERVL	230	COTTLE B	230	#1	1	73	793	Amps	EMERGENCY	988	124	1057.6	133.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	38	793	Amps	EMERGENCY	909	115	979.3	123.5	8.8
COTTLE B	230	BELLOTA	230	#1	1	114	793	Amps	EMERGENCY	911	115	980.7	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	135	793	Amps	EMERGENCY	911	115	980.7	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	123	793	Amps	EMERGENCY	911	115	981	123.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	124	793	Amps	EMERGENCY	910	115	980	123.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	39	793	Amps	EMERGENCY	907	114	977.1	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	109	793	Amps	EMERGENCY	905	114	975	122.9	8.8
WARNERVL	230	COTTLE B	230	#1	1	93	793	Amps	EMERGENCY	982	124	1052.2	132.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	107	793	Amps	EMERGENCY	911	115	980.8	123.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	126	793	Amps	EMERGENCY	906	114	976	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	134	793	Amps	EMERGENCY	906	114	976.2	123.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	95	793	Amps	EMERGENCY	912	115	982.1	123.8	8.8
COTTLE B	230	BELLOTA	230	#1	1	132	793	Amps	EMERGENCY	906	114	975.9	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	112	793	Amps	EMERGENCY	906	114	975.6	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	122	793	Amps	EMERGENCY	917	116	986.9	124.4	8.8
COTTLE B	230	BELLOTA	230	#1	1	128	793	Amps	EMERGENCY	905	114	974.7	122.9	8.8
WARNERVL	230	COTTLE B	230	#1	1	129	793	Amps	EMERGENCY	982	124	1052.5	132.7	8.8
WARNERVL	230	COTTLE B	230	#1	1	110	793	Amps	EMERGENCY	983	124	1052.9	132.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	113	793	Amps	EMERGENCY	908	115	978.1	123.3	8.8
COTTLE B	230	BELLOTA	230	#1	1	117	793	Amps	EMERGENCY	906	114	976	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	116	793	Amps	EMERGENCY	905	114	974.5	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	99	793	Amps	EMERGENCY	934	118	1003.7	126.5	8.8
WARNERVL	230	COTTLE B	230	#1	1	131	793	Amps	EMERGENCY	982	124	1051.5	132.6	8.8
COTTLE B	230	BELLOTA	230	#1	1	43	793	Amps	EMERGENCY	906	114	976.1	123.1	8.8
COTTLE B	230	BELLOTA	230	#1	1	100	793	Amps	EMERGENCY	930	117	999.6	126	8.8
COTTLE B	230	BELLOTA	230	#1	1	130	793	Amps	EMERGENCY	905	114	975.1	122.9	8.8
STOREY 1	230	BORDEN	230	#1	1	19	793	Amps	EMERGENCY	1115	141	1184.5	149.3	8.8

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
COTTLE B	230	BELLOTA	230	#1	1	81	793	Amps	EMERGENCY	907	114	977.2	123.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	73	793	Amps	EMERGENCY	911	115	980.6	123.6	8.8
WARNERVL	230	COTTLE B	230	#1	1	101	793	Amps	EMERGENCY	988	125	1058.2	133.4	8.8
WARNERVL	230	COTTLE B	230	#1	1	102	793	Amps	EMERGENCY	992	125	1062	133.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	93	793	Amps	EMERGENCY	905	114	975.2	122.9	8.8
COTTLE B	230	BELLOTA	230	#1	1	129	793	Amps	EMERGENCY	906	114	975.5	123	8.8
COTTLE B	230	BELLOTA	230	#1	1	110	793	Amps	EMERGENCY	906	114	975.9	123	8.8
WARNERVL	230	COTTLE B	230	#1	1	29	793	Amps	EMERGENCY	985	124	1054.6	133	8.8
WARNERVL	230	COTTLE B	230	#1	1	21	793	Amps	EMERGENCY	987	124	1056.4	133.2	8.8
WARNERVL	230	COTTLE B	230	#1	1	48	793	Amps	EMERGENCY	1016	128	1085.5	136.9	8.8
WILSON	230	WARNERVL	230	#1	1	84	793	Amps	EMERGENCY	959	121	1028.9	129.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	131	793	Amps	EMERGENCY	905	114	974.5	122.9	8.8
WARNERVL	230	COTTLE B	230	#1	1	3	793	Amps	EMERGENCY	987	124	1056.4	133.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	102	793	Amps	EMERGENCY	916	115	985	124.2	8.8
COTTLE B	230	BELLOTA	230	#1	1	101	793	Amps	EMERGENCY	912	115	981.2	123.7	8.8
COTTLE B	230	BELLOTA	230	#1	1	29	793	Amps	EMERGENCY	908	115	977.6	123.2	8.7
COTTLE B	230	BELLOTA	230	#1	1	21	793	Amps	EMERGENCY	910	115	979.3	123.5	8.7
WARNERVL	230	COTTLE B	230	#1	1	26	793	Amps	EMERGENCY	986	124	1055.7	133.1	8.7
COTTLE B	230	BELLOTA	230	#1	1	48	793	Amps	EMERGENCY	939	118	1008.4	127.1	8.7
CERTAN T	115	CHWCHLLA	115	#1	1	13	512	Amps	EMERGENCY	486	95	530.9	103.7	8.7
COTTLE B	230	BELLOTA	230	#1	1	3	793	Amps	EMERGENCY	910	115	979.4	123.5	8.7
WARNERVL	230	COTTLE B	230	#1	1	45	793	Amps	EMERGENCY	993	125	1062.1	133.9	8.7
WARNERVL	230	COTTLE B	230	#1	1	46	793	Amps	EMERGENCY	983	124	1051.7	132.6	8.7
COTTLE B	230	BELLOTA	230	#1	1	26	793	Amps	EMERGENCY	910	115	978.6	123.4	8.7
COTTLE B	230	BELLOTA	230	#1	1	45	793	Amps	EMERGENCY	916	116	985.1	124.2	8.7
COTTLE B	230	BELLOTA	230	#1	1	46	793	Amps	EMERGENCY	906	114	974.7	122.9	8.7
WARNERVL	230	COTTLE B	230	#1	1	85	793	Amps	EMERGENCY	1004	127	1072.1	135.2	8.6
STOREY 1	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	1175	148	1243	156.7	8.6
COTTLE B	230	BELLOTA	230	#1	1	85	793	Amps	EMERGENCY	927	117	995.1	125.4	8.6
STOREY 1	230	WILSON	230	#1	1	17	851	Amps	EMERGENCY	990	116	1062.3	124.8	8.5
STOREY 1	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	1153	145	1220.2	153.8	8.5
STOREY 1	230	BORDEN	230	#1	1	57	793	Amps	EMERGENCY	1153	145	1220.2	153.8	8.5
WARNERVL	230	COTTLE B	230	#1	1	59	793	Amps	EMERGENCY	1063	134	1130.1	142.5	8.4
STOREY 1	230	BORDEN	230	#1	1	20	793	Amps	EMERGENCY	1029	130	1096	138.2	8.4
COTTLE B	230	BELLOTA	230	#1	1	59	793	Amps	EMERGENCY	986	124	1052.9	132.7	8.4
BORDEN	230	STOREY 1	230	#1	1	18	793	Amps	EMERGENCY	1054	133	1120.4	141.2	8.3
BORDEN	230	STOREY 1	230	#1	1	7	793	Amps	EMERGENCY	1060	134	1125.6	141.9	8.3
BORDEN	230	STOREY 1	230	#1	1	6	793	Amps	EMERGENCY	1052	133	1117.1	140.8	8.3
STOREY 1	230	WILSON	230	#1	1	19	851	Amps	EMERGENCY	1018	120	1087.7	127.8	8.2
STOREY 1	230	BORDEN	230	#1	1	25	793	Amps	EMERGENCY	1041	131	1106.2	139.5	8.2
BORDEN	230	STOREY 1	230	#1	1	24	793	Amps	EMERGENCY	1056	133	1120.9	141.3	8.2

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	58	851	Amps	EMERGENCY	1078	127	1146.1	134.7	8.1
STOREY 1	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	1148	145	1210.9	152.7	8
STOREY 1	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	1040	131	1102.8	139	8
STOREY 1	230	BORDEN	230	#1	1	63	793	Amps	EMERGENCY	1143	144	1205.8	152	8
BORDEN	230	STOREY 1	230	#1	1	87	793	Amps	EMERGENCY	1039	131	1102.4	139	7.9
BORDEN	230	STOREY 1	230	#1	1	77	793	Amps	EMERGENCY	1059	133	1121.6	141.4	7.9
BORDEN	230	STOREY 1	230	#1	1	62	793	Amps	EMERGENCY	1041	131	1104	139.2	7.9
STOREY 1	230	WILSON	230	#1	1	16	851	Amps	EMERGENCY	1056	124	1123.4	132	7.9
STOREY 1	230	WILSON	230	#1	1	57	851	Amps	EMERGENCY	1056	124	1123.4	132	7.9
BORDEN	230	STOREY 1	230	#1	1	21	793	Amps	EMERGENCY	1029	130	1091.3	137.6	7.9
STOREY 1	230	BORDEN	230	#1	1	48	793	Amps	EMERGENCY	1027	129	1089.6	137.4	7.9
BORDEN	230	STOREY 1	230	#1	1	70	793	Amps	EMERGENCY	1029	130	1092	137.7	7.9
STOREY 1	230	WILSON	230	#1	1	20	851	Amps	EMERGENCY	932	110	999	117.4	7.9
STOREY 1	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	1066	134	1128.6	142.3	7.9
STOREY 2	230	BORDEN	230	#1	1	17	793	Amps	EMERGENCY	928	117	989.9	124.8	7.8
BORDEN	230	STOREY 1	230	#1	1	5	793	Amps	EMERGENCY	1021	129	1083.3	136.6	7.8
BORDEN	230	STOREY 1	230	#1	1	30	793	Amps	EMERGENCY	1045	132	1106.8	139.5	7.8
STOREY 1	230	WILSON	230	#1	1	18	851	Amps	EMERGENCY	957	113	1023.7	120.3	7.8
STOREY 1	230	WILSON	230	#1	1	7	851	Amps	EMERGENCY	963	113	1028.9	120.9	7.8
STOREY 1	230	WILSON	230	#1	1	6	851	Amps	EMERGENCY	954	112	1020.4	119.9	7.8
STOREY 2	230	WILSON	230	#1	1	17	793	Amps	EMERGENCY	840	106	901.8	113.7	7.8
WARNERVL	230	WRNRVLLE	115	#2	0	9	75	MVA	EMERGENCY	99	132	104.7	139.6	7.7
WARNERVL	230	WRNRVLLE	115	#3	0	9	75	MVA	EMERGENCY	99	132	104.7	139.6	7.7
WRNRVLLE	115	WARNERVL	230	#1	0	9	150	MVA	EMERGENCY	198	132	209.3	139.5	7.7
BORDEN	230	STOREY 1	230	#1	1	29	793	Amps	EMERGENCY	1021	129	1081.8	136.4	7.7
STOREY 1	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	1101	139	1161.8	146.5	7.7
STOREY 1	230	BORDEN	230	#1	1	76	793	Amps	EMERGENCY	1111	140	1171.9	147.7	7.7
STOREY 1	230	BORDEN	230	#1	1	23	793	Amps	EMERGENCY	1047	132	1107.5	139.6	7.7
STOREY 1	230	BORDEN	230	#1	1	31	793	Amps	EMERGENCY	1024	129	1084.5	136.7	7.7
STOREY 1	230	BORDEN	230	#1	1	105	793	Amps	EMERGENCY	1072	135	1133	142.8	7.7
BORDEN	230	STOREY 1	230	#1	1	54	793	Amps	EMERGENCY	1057	133	1117.7	140.9	7.7
STOREY 1	230	WILSON	230	#1	1	25	851	Amps	EMERGENCY	945	111	1010.5	118.7	7.7
STOREY 1	230	WILSON	230	#1	1	24	851	Amps	EMERGENCY	959	113	1024	120.3	7.7
BORDEN	230	STOREY 1	230	#1	1	129	793	Amps	EMERGENCY	1021	129	1081.2	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	93	793	Amps	EMERGENCY	1021	129	1081.4	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	118	793	Amps	EMERGENCY	1051	133	1112	140.2	7.6
STOREY 1	230	BORDEN	230	#1	1	103	793	Amps	EMERGENCY	1048	132	1108.2	139.7	7.6
BORDEN	230	STOREY 1	230	#1	1	42	793	Amps	EMERGENCY	1024	129	1084.9	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	90	793	Amps	EMERGENCY	1042	131	1102.1	138.9	7.6
BORDEN	230	STOREY 1	230	#1	1	131	793	Amps	EMERGENCY	1021	129	1081.5	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	97	793	Amps	EMERGENCY	1039	131	1099.2	138.6	7.6

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
BORDEN	230	STOREY 1	230	#1	1	41	793	Amps	EMERGENCY	1073	135	1133.5	142.9	7.6
STOREY 1	230	BORDEN	230	#1	1	53	793	Amps	EMERGENCY	1037	131	1097.1	138.3	7.6
STOREY 1	230	BORDEN	230	#1	1	98	793	Amps	EMERGENCY	1037	131	1097.1	138.3	7.6
STOREY 1	230	BORDEN	230	#1	1	33	793	Amps	EMERGENCY	1026	129	1086.6	137	7.6
BORDEN	230	STOREY 1	230	#1	1	74	793	Amps	EMERGENCY	1053	133	1113.9	140.4	7.6
BORDEN	230	STOREY 1	230	#1	1	127	793	Amps	EMERGENCY	1020	129	1080.4	136.2	7.6
STOREY 1	230	BORDEN	230	#1	1	125	793	Amps	EMERGENCY	1029	130	1089.8	137.4	7.6
BORDEN	230	STOREY 1	230	#1	1	75	793	Amps	EMERGENCY	1043	131	1103.5	139.1	7.6
STOREY 1	230	BORDEN	230	#1	1	88	793	Amps	EMERGENCY	1034	130	1094.6	138	7.6
BORDEN	230	STOREY 1	230	#1	1	89	793	Amps	EMERGENCY	1033	130	1092.9	137.8	7.6
STOREY 1	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	1021	129	1081	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	43	793	Amps	EMERGENCY	1021	129	1081.8	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	40	793	Amps	EMERGENCY	1040	131	1100	138.7	7.6
BORDEN	230	STOREY 1	230	#1	1	130	793	Amps	EMERGENCY	1021	129	1081.3	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	49	793	Amps	EMERGENCY	1029	130	1089.4	137.3	7.6
STOREY 1	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	1029	130	1089.4	137.3	7.6
BORDEN	230	STOREY 1	230	#1	1	119	793	Amps	EMERGENCY	1022	129	1082.7	136.5	7.6
STOREY 1	230	BORDEN	230	#1	1	123	793	Amps	EMERGENCY	1027	129	1087.1	137	7.6
BORDEN	230	STOREY 1	230	#1	1	135	793	Amps	EMERGENCY	1026	129	1086.6	137	7.6
STOREY 1	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	1028	130	1087.9	137.1	7.6
STOREY 1	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	1020	129	1080.3	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	38	793	Amps	EMERGENCY	1026	129	1086.7	137	7.6
BORDEN	230	STOREY 1	230	#1	1	107	793	Amps	EMERGENCY	1026	129	1086.6	137	7.6
BORDEN	230	STOREY 1	230	#1	1	124	793	Amps	EMERGENCY	1027	129	1087	137	7.6
STOREY 1	230	BORDEN	230	#1	1	134	793	Amps	EMERGENCY	1021	129	1081.3	136.3	7.6
BORDEN	230	STOREY 1	230	#1	1	39	793	Amps	EMERGENCY	1023	129	1083.7	136.6	7.6
BORDEN	230	STOREY 1	230	#1	1	133	793	Amps	EMERGENCY	1020	129	1080.2	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	109	793	Amps	EMERGENCY	1020	129	1080.5	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	132	793	Amps	EMERGENCY	1021	129	1080.8	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	95	793	Amps	EMERGENCY	1027	129	1087	137	7.6
BORDEN	230	STOREY 1	230	#1	1	112	793	Amps	EMERGENCY	1021	129	1081.6	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	126	793	Amps	EMERGENCY	1021	129	1081.7	136.4	7.6
STOREY 1	230	BORDEN	230	#1	1	128	793	Amps	EMERGENCY	1020	129	1080.2	136.2	7.6
BORDEN	230	STOREY 1	230	#1	1	104	793	Amps	EMERGENCY	1064	134	1124.4	141.7	7.6
BORDEN	230	STOREY 1	230	#1	1	122	793	Amps	EMERGENCY	1031	130	1091	137.5	7.6
STOREY 1	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	1022	129	1082	136.4	7.6
BORDEN	230	STOREY 1	230	#1	1	113	793	Amps	EMERGENCY	1025	129	1085.2	136.8	7.6
BORDEN	230	STOREY 1	230	#1	1	117	793	Amps	EMERGENCY	1021	129	1081.5	136.3	7.6
STOREY 1	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	1021	129	1081.1	136.3	7.6
STOREY 2	230	BORDEN	230	#1	1	19	793	Amps	EMERGENCY	952	120	1011.6	127.5	7.6
STOREY 1	230	BORDEN	230	#1	1	99	793	Amps	EMERGENCY	1052	133	1112.3	140.2	7.5

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
BORDEN	230	STOREY 1	230	#1	1	100	793	Amps	EMERGENCY	1049	132	1109.2	139.8	7.5
STOREY 1	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	1038	131	1097.7	138.4	7.5
STOREY 1	230	WILSON	230	#1	1	71	851	Amps	EMERGENCY	1051	123	1114.3	131	7.5
STOREY 2	230	WILSON	230	#1	1	19	793	Amps	EMERGENCY	864	109	923.4	116.4	7.5
STOREY 1	230	WILSON	230	#1	1	15	851	Amps	EMERGENCY	943	111	1006.1	118.2	7.5
WARNERVL	230	COTTLE B	230	#1	1	84	793	Amps	EMERGENCY	1022	129	1081.5	136.3	7.5
STOREY 1	230	WILSON	230	#1	1	63	851	Amps	EMERGENCY	1046	123	1109.1	130.3	7.5
STOREY 1	230	BORDEN	230	#1	1	101	793	Amps	EMERGENCY	1040	131	1099.6	138.6	7.5
STOREY 1	230	WILSON	230	#1	1	87	851	Amps	EMERGENCY	942	111	1005.5	118.2	7.4
STOREY 1	230	WILSON	230	#1	1	77	851	Amps	EMERGENCY	961	113	1024.7	120.4	7.4
STOREY 1	230	WILSON	230	#1	1	62	851	Amps	EMERGENCY	944	111	1007	118.3	7.4
COTTLE B	230	BELLOTA	230	#1	1	84	793	Amps	EMERGENCY	946	119	1004.4	126.6	7.4
STOREY 1	230	WILSON	230	#1	1	21	851	Amps	EMERGENCY	931	109	994.3	116.9	7.4
STOREY 1	230	WILSON	230	#1	1	48	851	Amps	EMERGENCY	930	109	992.8	116.7	7.4
BORDEN	230	STOREY 1	230	#1	1	102	793	Amps	EMERGENCY	1055	133	1114.2	140.5	7.4
STOREY 1	230	WILSON	230	#1	1	70	851	Amps	EMERGENCY	932	110	995	116.9	7.4
STOREY 1	230	WILSON	230	#1	1	72	851	Amps	EMERGENCY	969	114	1031.5	121.2	7.4
STOREY 2	230	BORDEN	230	#1	1	58	793	Amps	EMERGENCY	1003	126	1061.4	133.8	7.4
STOREY 1	230	WILSON	230	#1	1	5	851	Amps	EMERGENCY	924	109	986.4	115.9	7.3
STOREY 1	230	WILSON	230	#1	1	30	851	Amps	EMERGENCY	948	111	1010.1	118.7	7.3
BORDEN	230	STOREY 1	230	#1	1	85	793	Amps	EMERGENCY	1044	132	1102.4	139	7.3
STOREY 2	230	WILSON	230	#1	1	58	793	Amps	EMERGENCY	915	115	972.9	122.7	7.3
STOREY 2	230	BORDEN	230	#1	1	16	793	Amps	EMERGENCY	984	124	1041.9	131.4	7.3
STOREY 2	230	BORDEN	230	#1	1	57	793	Amps	EMERGENCY	984	124	1041.9	131.4	7.3
BORDEN	230	STOREY 1	230	#1	1	45	793	Amps	EMERGENCY	1045	132	1102.3	139	7.3
STOREY 2	230	BORDEN	230	#1	1	20	793	Amps	EMERGENCY	878	111	935.9	118	7.2
ORO LOMA	115	EL NIDO	115	#1	1	13	512	Amps	EMERGENCY	512	100	549.4	107.3	7.2
STOREY 1	230	WILSON	230	#1	1	29	851	Amps	EMERGENCY	924	109	985	115.8	7.2
HAMMONDS	115	PANOCHEJ	115	#1	1	13	607	Amps	EMERGENCY	733	121	776.9	127.9	7.2
STOREY 1	230	WILSON	230	#1	1	47	851	Amps	EMERGENCY	1004	118	1065.5	125.2	7.2
STOREY 1	230	WILSON	230	#1	1	1	851	Amps	EMERGENCY	926	109	987.3	116	7.2
STOREY 2	230	WILSON	230	#1	1	16	793	Amps	EMERGENCY	897	113	953.6	120.2	7.2
STOREY 2	230	WILSON	230	#1	1	57	793	Amps	EMERGENCY	897	113	953.6	120.2	7.2
STOREY 1	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	1135	143	1191.8	150.3	7.2
STOREY 1	230	WILSON	230	#1	1	76	851	Amps	EMERGENCY	1014	119	1075.2	126.4	7.2
STOREY 1	230	WILSON	230	#1	1	31	851	Amps	EMERGENCY	927	109	987.6	116.1	7.2
WRNRVLLE	115	STANDFRD	115	#1	1	9	939	Amps	EMERGENCY	994	106	1061.6	113.1	7.2
WRNRVLLE	115	STANDFRD	115	#2	1	9	939	Amps	EMERGENCY	994	106	1061.6	113.1	7.2
STOREY 1	230	WILSON	230	#1	1	23	851	Amps	EMERGENCY	950	112	1010.9	118.8	7.2
STOREY 1	230	WILSON	230	#1	1	105	851	Amps	EMERGENCY	976	115	1036.6	121.8	7.2
STOREY 1	230	WILSON	230	#1	1	54	851	Amps	EMERGENCY	960	113	1021	120	7.2

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	129	851	Amps	EMERGENCY	923	109	984.4	115.7	7.2
STOREY 1	230	WILSON	230	#1	1	93	851	Amps	EMERGENCY	924	109	984.6	115.7	7.2
STOREY 2	230	WILSON	230	#1	1	20	793	Amps	EMERGENCY	792	100	848.3	106.9	7.2
STOREY 1	230	WILSON	230	#1	1	118	851	Amps	EMERGENCY	955	112	1015.5	119.3	7.2
STOREY 1	230	WILSON	230	#1	1	42	851	Amps	EMERGENCY	927	109	988.1	116.1	7.2
STOREY 1	230	WILSON	230	#1	1	90	851	Amps	EMERGENCY	945	111	1005.4	118.2	7.2
STOREY 1	230	WILSON	230	#1	1	131	851	Amps	EMERGENCY	924	109	984.7	115.7	7.2
STOREY 1	230	WILSON	230	#1	1	103	851	Amps	EMERGENCY	951	112	1011.6	118.9	7.2
HAMMONDS	115	DFSTP	115	#1	1	13	607	Amps	EMERGENCY	684	113	727.1	119.7	7.2
STOREY 2	230	BORDEN	230	#1	1	18	793	Amps	EMERGENCY	900	113	956.9	120.6	7.2
STOREY 1	230	WILSON	230	#1	1	97	851	Amps	EMERGENCY	942	111	1002.4	117.8	7.2
STOREY 1	230	WILSON	230	#1	1	53	851	Amps	EMERGENCY	940	110	1000.4	117.6	7.2
STOREY 1	230	WILSON	230	#1	1	98	851	Amps	EMERGENCY	940	110	1000.4	117.6	7.2
STOREY 1	230	WILSON	230	#1	1	33	851	Amps	EMERGENCY	929	109	989.9	116.3	7.2
DFSTP	115	ORO LOMA	115	#1	1	13	607	Amps	EMERGENCY	677	111	720.5	118.6	7.2
STOREY 1	230	WILSON	230	#1	1	41	851	Amps	EMERGENCY	977	115	1037.4	121.9	7.2
STOREY 1	230	WILSON	230	#1	1	127	851	Amps	EMERGENCY	923	108	983.7	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	74	851	Amps	EMERGENCY	956	112	1017	119.5	7.1
STOREY 2	230	BORDEN	230	#1	1	7	793	Amps	EMERGENCY	905	114	961.4	121.2	7.1
STOREY 1	230	WILSON	230	#1	1	125	851	Amps	EMERGENCY	932	110	993	116.7	7.1
STOREY 1	230	WILSON	230	#1	1	37	851	Amps	EMERGENCY	923	109	984.2	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	75	851	Amps	EMERGENCY	946	111	1006.7	118.3	7.1
STOREY 1	230	WILSON	230	#1	1	88	851	Amps	EMERGENCY	937	110	997.9	117.3	7.1
STOREY 1	230	WILSON	230	#1	1	89	851	Amps	EMERGENCY	935	110	996.2	117.1	7.1
STOREY 1	230	WILSON	230	#1	1	40	851	Amps	EMERGENCY	943	111	1003.3	117.9	7.1
STOREY 1	230	WILSON	230	#1	1	43	851	Amps	EMERGENCY	924	109	985	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	130	851	Amps	EMERGENCY	924	109	984.4	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	49	851	Amps	EMERGENCY	932	110	992.6	116.7	7.1
STOREY 1	230	WILSON	230	#1	1	108	851	Amps	EMERGENCY	932	110	992.6	116.7	7.1
STOREY 1	230	WILSON	230	#1	1	114	851	Amps	EMERGENCY	930	109	991.1	116.5	7.1
STOREY 1	230	WILSON	230	#1	1	119	851	Amps	EMERGENCY	925	109	985.9	115.9	7.1
STOREY 1	230	WILSON	230	#1	1	135	851	Amps	EMERGENCY	929	109	989.8	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	116	851	Amps	EMERGENCY	923	108	983.5	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	123	851	Amps	EMERGENCY	930	109	990.3	116.4	7.1
STOREY 1	230	WILSON	230	#1	1	124	851	Amps	EMERGENCY	930	109	990.3	116.4	7.1
STOREY 1	230	WILSON	230	#1	1	107	851	Amps	EMERGENCY	929	109	989.7	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	134	851	Amps	EMERGENCY	924	109	984.4	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	38	851	Amps	EMERGENCY	929	109	989.9	116.3	7.1
STOREY 1	230	WILSON	230	#1	1	133	851	Amps	EMERGENCY	923	108	983.3	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	39	851	Amps	EMERGENCY	926	109	987	116	7.1
STOREY 1	230	WILSON	230	#1	1	95	851	Amps	EMERGENCY	930	109	990.2	116.4	7.1

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FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 1	230	WILSON	230	#1	1	109	851	Amps	EMERGENCY	923	108	983.7	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	112	851	Amps	EMERGENCY	924	109	984.7	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	126	851	Amps	EMERGENCY	924	109	984.9	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	132	851	Amps	EMERGENCY	923	109	984	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	128	851	Amps	EMERGENCY	923	108	983.3	115.6	7.1
STOREY 1	230	WILSON	230	#1	1	104	851	Amps	EMERGENCY	967	114	1027.9	120.8	7.1
STOREY 1	230	WILSON	230	#1	1	122	851	Amps	EMERGENCY	934	110	994.2	116.8	7.1
STOREY 2	230	BORDEN	230	#1	1	6	793	Amps	EMERGENCY	898	113	954.1	120.3	7.1
STOREY 1	230	WILSON	230	#1	1	81	851	Amps	EMERGENCY	925	109	985.3	115.8	7.1
STOREY 1	230	WILSON	230	#1	1	113	851	Amps	EMERGENCY	928	109	988.4	116.2	7.1
STOREY 1	230	WILSON	230	#1	1	117	851	Amps	EMERGENCY	924	109	984.6	115.7	7.1
STOREY 1	230	WILSON	230	#1	1	110	851	Amps	EMERGENCY	924	109	984.2	115.7	7.1
STOREY 2	230	WILSON	230	#1	1	18	793	Amps	EMERGENCY	813	103	869.1	109.6	7.1
STOREY 1	230	WILSON	230	#1	1	99	851	Amps	EMERGENCY	956	112	1015.7	119.4	7.1
STOREY 1	230	WILSON	230	#1	1	100	851	Amps	EMERGENCY	952	112	1012.5	119	7.1
STOREY 2	230	WILSON	230	#1	1	7	793	Amps	EMERGENCY	818	103	873.6	110.1	7.1
STOREY 1	230	WILSON	230	#1	1	73	851	Amps	EMERGENCY	940	111	1000.5	117.6	7.1
STOREY 2	230	WILSON	230	#1	1	6	793	Amps	EMERGENCY	811	102	866.4	109.2	7
STOREY 2	230	BORDEN	230	#1	1	24	793	Amps	EMERGENCY	901	114	957	120.7	7
STOREY 2	230	BORDEN	230	#1	1	25	793	Amps	EMERGENCY	891	112	946.2	119.3	7
STOREY 1	230	WILSON	230	#1	1	101	851	Amps	EMERGENCY	943	111	1002.5	117.8	7
WILSON	230	STOREY 2	230	#1	1	25	793	Amps	EMERGENCY	802	101	857.7	108.1	7
STOREY 1	230	WILSON	230	#1	1	102	851	Amps	EMERGENCY	958	113	1017.5	119.6	6.9
STOREY 2	230	WILSON	230	#1	1	24	793	Amps	EMERGENCY	814	103	869.5	109.6	6.9
STOREY 2	230	BORDEN	230	#1	1	71	793	Amps	EMERGENCY	980	124	1034	130.4	6.9
STOREY 1	230	WILSON	230	#1	1	85	851	Amps	EMERGENCY	947	111	1005.6	118.2	6.9
STOREY 2	230	BORDEN	230	#1	1	15	793	Amps	EMERGENCY	888	112	941.9	118.7	6.9
STOREY 2	230	BORDEN	230	#1	1	63	793	Amps	EMERGENCY	975	123	1029.6	129.8	6.8
STOREY 2	230	BORDEN	230	#1	1	77	793	Amps	EMERGENCY	904	114	957.8	120.7	6.8
STOREY 2	230	BORDEN	230	#1	1	62	793	Amps	EMERGENCY	889	112	942.7	118.8	6.8
STOREY 2	230	BORDEN	230	#1	1	87	793	Amps	EMERGENCY	887	112	941.2	118.7	6.8
STOREY 1	230	WILSON	230	#1	1	45	851	Amps	EMERGENCY	948	111	1005.6	118.2	6.8
STOREY 2	230	BORDEN	230	#1	1	21	793	Amps	EMERGENCY	878	111	931.7	117.5	6.8
STOREY 2	230	BORDEN	230	#1	1	48	793	Amps	EMERGENCY	877	111	930.7	117.3	6.8
ORO LOMA	115	ORO LOMA	70	#2	0	12	72	MVA	EMERGENCY	68	94	72.7	101	6.8
STOREY 2	230	BORDEN	230	#1	1	70	793	Amps	EMERGENCY	878	111	932.3	117.5	6.8
STOREY 2	230	WILSON	230	#1	1	71	793	Amps	EMERGENCY	892	112	945.9	119.3	6.8
STOREY 2	230	BORDEN	230	#1	1	72	793	Amps	EMERGENCY	910	115	963.6	121.5	6.8
STOREY 2	230	WILSON	230	#1	1	15	793	Amps	EMERGENCY	800	101	854.2	107.7	6.8
STOREY 2	230	WILSON	230	#1	1	63	793	Amps	EMERGENCY	888	112	941.5	118.7	6.8
STOREY 2	230	WILSON	230	#1	1	87	793	Amps	EMERGENCY	800	101	853.8	107.6	6.8

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	77	793	Amps	EMERGENCY	817	103	870.1	109.7	6.8
STOREY 2	230	WILSON	230	#1	1	62	793	Amps	EMERGENCY	802	101	855.1	107.8	6.8
STOREY 1	230	WILSON	230	#1	1	59	851	Amps	EMERGENCY	1037	122	1094.9	128.7	6.7
STOREY 2	230	WILSON	230	#1	1	21	793	Amps	EMERGENCY	791	100	844.4	106.5	6.7
STOREY 2	230	BORDEN	230	#1	1	5	793	Amps	EMERGENCY	872	110	924.9	116.6	6.7
STOREY 2	230	WILSON	230	#1	1	48	793	Amps	EMERGENCY	790	100	842.9	106.3	6.7
STOREY 2	230	WILSON	230	#1	1	70	793	Amps	EMERGENCY	792	100	844.9	106.5	6.7
STOREY 2	230	BORDEN	230	#1	1	30	793	Amps	EMERGENCY	892	112	945.3	119.2	6.7
STOREY 2	230	WILSON	230	#1	1	72	793	Amps	EMERGENCY	823	104	875.8	110.4	6.7
K1-JCT	115	OAKH_JCT	115	#1	1	13	743	Amps	EMERGENCY	869	117	918.9	123.7	6.7
KERCKHF2	115	K1-JCT	115	#2	1	13	743	Amps	EMERGENCY	869	117	919	123.7	6.7
MC CALL	230	HELM	230	#1	1	91	850	Amps	EMERGENCY	902	106	958.7	112.8	6.7
STOREY 2	230	WILSON	230	#1	1	5	793	Amps	EMERGENCY	785	99	837.6	105.6	6.7
STOREY 2	230	WILSON	230	#1	1	30	793	Amps	EMERGENCY	805	101	857.7	108.1	6.6
STOREY 2	230	BORDEN	230	#1	1	29	793	Amps	EMERGENCY	871	110	923.8	116.5	6.6
HELM	230	PANOCHE	230	#1	1	91	850	Amps	EMERGENCY	813	96	869.5	102.3	6.6
STOREY 2	230	BORDEN	230	#1	1	47	793	Amps	EMERGENCY	940	118	992.3	125.1	6.6
STOREY 2	230	BORDEN	230	#1	1	1	793	Amps	EMERGENCY	874	110	926.2	116.8	6.6
STOREY 2	230	BORDEN	230	#1	1	31	793	Amps	EMERGENCY	874	110	926	116.7	6.6
STOREY 2	230	BORDEN	230	#1	1	76	793	Amps	EMERGENCY	949	120	1000.8	126.2	6.6
STOREY 2	230	BORDEN	230	#1	1	23	793	Amps	EMERGENCY	894	113	946	119.3	6.6
STOREY 2	230	BORDEN	230	#1	1	105	793	Amps	EMERGENCY	916	115	967.7	122	6.6
STOREY 2	230	BORDEN	230	#1	1	54	793	Amps	EMERGENCY	902	114	954.6	120.3	6.6
STOREY 2	230	BORDEN	230	#1	1	129	793	Amps	EMERGENCY	871	110	923.3	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	93	793	Amps	EMERGENCY	871	110	923.5	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	42	793	Amps	EMERGENCY	874	110	926.5	116.8	6.6
STOREY 2	230	BORDEN	230	#1	1	118	793	Amps	EMERGENCY	898	113	949.7	119.7	6.6
STOREY 2	230	BORDEN	230	#1	1	131	793	Amps	EMERGENCY	871	110	923.6	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	90	793	Amps	EMERGENCY	889	112	941.2	118.7	6.6
STOREY 2	230	BORDEN	230	#1	1	103	793	Amps	EMERGENCY	894	113	946.4	119.3	6.6
STOREY 2	230	BORDEN	230	#1	1	97	793	Amps	EMERGENCY	887	112	938.7	118.3	6.6
STOREY 2	230	BORDEN	230	#1	1	53	793	Amps	EMERGENCY	885	112	936.9	118.1	6.6
STOREY 2	230	BORDEN	230	#1	1	98	793	Amps	EMERGENCY	885	112	936.9	118.1	6.6
STOREY 2	230	BORDEN	230	#1	1	33	793	Amps	EMERGENCY	876	110	928.1	117	6.6
STOREY 2	230	BORDEN	230	#1	1	74	793	Amps	EMERGENCY	899	113	951.2	119.9	6.6
STOREY 2	230	BORDEN	230	#1	1	127	793	Amps	EMERGENCY	871	110	922.7	116.3	6.6
ORO LOMA	115	ORO LOMA	70	#2	0	10	72	MVA	EMERGENCY	74	103	78.7	109.4	6.6
STOREY 2	230	BORDEN	230	#1	1	41	793	Amps	EMERGENCY	916	116	968.2	122.1	6.6
STOREY 2	230	BORDEN	230	#1	1	125	793	Amps	EMERGENCY	879	111	930.6	117.3	6.6
STOREY 2	230	BORDEN	230	#1	1	75	793	Amps	EMERGENCY	890	112	942.3	118.8	6.6
STOREY 2	230	WILSON	230	#1	1	29	793	Amps	EMERGENCY	784	99	836.4	105.4	6.6

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 2	230	BORDEN	230	#1	1	37	793	Amps	EMERGENCY	871	110	923.2	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	43	793	Amps	EMERGENCY	872	110	923.8	116.5	6.6
STOREY 2	230	BORDEN	230	#1	1	88	793	Amps	EMERGENCY	883	111	934.8	117.9	6.6
STOREY 2	230	BORDEN	230	#1	1	89	793	Amps	EMERGENCY	881	111	933.3	117.7	6.6
STOREY 2	230	BORDEN	230	#1	1	130	793	Amps	EMERGENCY	871	110	923.3	116.4	6.6
STOREY 2	230	BORDEN	230	#1	1	40	793	Amps	EMERGENCY	887	112	939.4	118.4	6.6
STOREY 2	230	BORDEN	230	#1	1	49	793	Amps	EMERGENCY	878	111	930.3	117.3	6.6
STOREY 2	230	BORDEN	230	#1	1	108	793	Amps	EMERGENCY	878	111	930.3	117.3	6.6
STOREY 2	230	BORDEN	230	#1	1	119	793	Amps	EMERGENCY	873	110	924.6	116.6	6.5
STOREY 2	230	BORDEN	230	#1	1	114	793	Amps	EMERGENCY	877	111	929	117.1	6.5
STOREY 2	230	BORDEN	230	#1	1	116	793	Amps	EMERGENCY	871	110	922.5	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	123	793	Amps	EMERGENCY	876	110	928.3	117	6.5
STOREY 2	230	BORDEN	230	#1	1	135	793	Amps	EMERGENCY	876	110	927.9	117	6.5
STOREY 2	230	BORDEN	230	#1	1	107	793	Amps	EMERGENCY	876	110	927.9	117	6.5
STOREY 2	230	BORDEN	230	#1	1	124	793	Amps	EMERGENCY	876	110	928.3	117	6.5
STOREY 2	230	BORDEN	230	#1	1	38	793	Amps	EMERGENCY	876	110	928	117	6.5
STOREY 2	230	BORDEN	230	#1	1	134	793	Amps	EMERGENCY	871	110	923.3	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	39	793	Amps	EMERGENCY	874	110	925.5	116.7	6.5
STOREY 2	230	BORDEN	230	#1	1	109	793	Amps	EMERGENCY	871	110	922.7	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	133	793	Amps	EMERGENCY	871	110	922.4	116.3	6.5
STOREY 2	230	BORDEN	230	#1	1	95	793	Amps	EMERGENCY	876	110	928.3	117	6.5
STOREY 2	230	BORDEN	230	#1	1	132	793	Amps	EMERGENCY	871	110	923	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	112	793	Amps	EMERGENCY	872	110	923.6	116.4	6.5
STOREY 2	230	BORDEN	230	#1	1	126	793	Amps	EMERGENCY	872	110	923.7	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	128	793	Amps	EMERGENCY	871	110	922.4	116.3	6.5
STOREY 2	230	WILSON	230	#1	1	47	793	Amps	EMERGENCY	853	108	904.6	114	6.5
STOREY 2	230	WILSON	230	#1	1	1	793	Amps	EMERGENCY	786	99	838.1	105.7	6.5
STOREY 2	230	BORDEN	230	#1	1	122	793	Amps	EMERGENCY	880	111	931.7	117.5	6.5
STOREY 2	230	BORDEN	230	#1	1	104	793	Amps	EMERGENCY	909	115	960.3	121.1	6.5
STOREY 2	230	BORDEN	230	#1	1	81	793	Amps	EMERGENCY	872	110	924	116.5	6.5
STOREY 2	230	BORDEN	230	#1	1	113	793	Amps	EMERGENCY	875	110	926.7	116.8	6.5
STOREY 2	230	BORDEN	230	#1	1	117	793	Amps	EMERGENCY	872	110	923.5	116.4	6.5
STOREY 2	230	WILSON	230	#1	1	31	793	Amps	EMERGENCY	787	99	838.6	105.7	6.5
STOREY 2	230	WILSON	230	#1	1	76	793	Amps	EMERGENCY	861	109	912.7	115.1	6.5
STOREY 2	230	WILSON	230	#1	1	23	793	Amps	EMERGENCY	807	102	858.3	108.2	6.5
STOREY 2	230	WILSON	230	#1	1	105	793	Amps	EMERGENCY	828	104	880.1	111	6.5
STOREY 2	230	BORDEN	230	#1	1	110	793	Amps	EMERGENCY	872	110	923.2	116.4	6.5
STOREY 2	230	WILSON	230	#1	1	54	793	Amps	EMERGENCY	815	103	866.9	109.3	6.5
STOREY 2	230	WILSON	230	#1	1	129	793	Amps	EMERGENCY	784	99	835.9	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	93	793	Amps	EMERGENCY	785	99	836.1	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	118	793	Amps	EMERGENCY	811	102	862.2	108.7	6.5

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	42	793	Amps	EMERGENCY	788	99	839	105.8	6.5
STOREY 2	230	WILSON	230	#1	1	90	793	Amps	EMERGENCY	802	101	853.7	107.6	6.5
STOREY 2	230	WILSON	230	#1	1	103	793	Amps	EMERGENCY	807	102	858.9	108.3	6.5
STOREY 2	230	WILSON	230	#1	1	131	793	Amps	EMERGENCY	785	99	836.2	105.4	6.5
STOREY 2	230	BORDEN	230	#1	1	99	793	Amps	EMERGENCY	899	113	950	119.8	6.5
STOREY 2	230	WILSON	230	#1	1	97	793	Amps	EMERGENCY	800	101	851.1	107.3	6.5
STOREY 2	230	WILSON	230	#1	1	33	793	Amps	EMERGENCY	789	99	840.5	106	6.5
STOREY 2	230	WILSON	230	#1	1	53	793	Amps	EMERGENCY	798	101	849.4	107.1	6.5
STOREY 2	230	WILSON	230	#1	1	98	793	Amps	EMERGENCY	798	101	849.4	107.1	6.5
STOREY 2	230	BORDEN	230	#1	1	100	793	Amps	EMERGENCY	896	113	947.3	119.4	6.5
STOREY 2	230	WILSON	230	#1	1	41	793	Amps	EMERGENCY	829	105	880.7	111	6.5
STOREY 2	230	WILSON	230	#1	1	127	793	Amps	EMERGENCY	784	99	835.3	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	74	793	Amps	EMERGENCY	812	102	863.5	108.9	6.5
STOREY 2	230	WILSON	230	#1	1	125	793	Amps	EMERGENCY	792	100	843.2	106.3	6.5
STOREY 2	230	BORDEN	230	#1	1	73	793	Amps	EMERGENCY	886	112	937.2	118.2	6.5
STOREY 2	230	WILSON	230	#1	1	75	793	Amps	EMERGENCY	803	101	854.8	107.8	6.5
STOREY 2	230	WILSON	230	#1	1	88	793	Amps	EMERGENCY	796	100	847.3	106.8	6.5
STOREY 2	230	WILSON	230	#1	1	37	793	Amps	EMERGENCY	784	99	835.7	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	89	793	Amps	EMERGENCY	795	100	845.9	106.6	6.5
STOREY 2	230	WILSON	230	#1	1	40	793	Amps	EMERGENCY	801	101	851.9	107.4	6.5
STOREY 2	230	WILSON	230	#1	1	43	793	Amps	EMERGENCY	785	99	836.4	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	130	793	Amps	EMERGENCY	785	99	835.9	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	49	793	Amps	EMERGENCY	792	100	842.9	106.3	6.5
STOREY 2	230	WILSON	230	#1	1	108	793	Amps	EMERGENCY	792	100	842.9	106.3	6.5
STOREY 2	230	WILSON	230	#1	1	114	793	Amps	EMERGENCY	790	100	841.6	106.1	6.5
STOREY 2	230	WILSON	230	#1	1	116	793	Amps	EMERGENCY	784	99	835.1	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	119	793	Amps	EMERGENCY	786	99	837.2	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	123	793	Amps	EMERGENCY	790	100	840.9	106	6.5
STOREY 2	230	WILSON	230	#1	1	124	793	Amps	EMERGENCY	790	100	840.9	106	6.5
STOREY 2	230	WILSON	230	#1	1	135	793	Amps	EMERGENCY	789	99	840.4	106	6.5
STOREY 2	230	WILSON	230	#1	1	38	793	Amps	EMERGENCY	789	100	840.6	106	6.5
STOREY 2	230	WILSON	230	#1	1	107	793	Amps	EMERGENCY	789	99	840.4	106	6.5
STOREY 2	230	WILSON	230	#1	1	39	793	Amps	EMERGENCY	787	99	838.1	105.7	6.5
STOREY 2	230	WILSON	230	#1	1	134	793	Amps	EMERGENCY	785	99	835.9	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	133	793	Amps	EMERGENCY	784	99	835	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	128	793	Amps	EMERGENCY	784	99	835	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	112	793	Amps	EMERGENCY	785	99	836.2	105.4	6.5
STOREY 2	230	WILSON	230	#1	1	132	793	Amps	EMERGENCY	784	99	835.6	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	95	793	Amps	EMERGENCY	790	100	840.8	106	6.5
STOREY 2	230	WILSON	230	#1	1	109	793	Amps	EMERGENCY	784	99	835.3	105.3	6.5
STOREY 2	230	WILSON	230	#1	1	126	793	Amps	EMERGENCY	785	99	836.3	105.4	6.5

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
STOREY 2	230	WILSON	230	#1	1	122	793	Amps	EMERGENCY	793	100	844.2	106.4	6.5
STOREY 2	230	WILSON	230	#1	1	104	793	Amps	EMERGENCY	821	104	872.7	110	6.5
STOREY 2	230	WILSON	230	#1	1	81	793	Amps	EMERGENCY	785	99	836.6	105.5	6.5
STOREY 2	230	WILSON	230	#1	1	113	793	Amps	EMERGENCY	788	99	839.3	105.8	6.4
STOREY 2	230	WILSON	230	#1	1	117	793	Amps	EMERGENCY	785	99	836.1	105.4	6.4
STOREY 2	230	WILSON	230	#1	1	110	793	Amps	EMERGENCY	785	99	835.7	105.4	6.4
STOREY 2	230	BORDEN	230	#1	1	101	793	Amps	EMERGENCY	888	112	938.8	118.4	6.4
STOREY 2	230	WILSON	230	#1	1	99	793	Amps	EMERGENCY	811	102	862.4	108.7	6.4
STOREY 2	230	WILSON	230	#1	1	100	793	Amps	EMERGENCY	809	102	859.7	108.4	6.4
STOREY 2	230	WILSON	230	#1	1	73	793	Amps	EMERGENCY	799	101	849.6	107.1	6.4
STOREY 2	230	BORDEN	230	#1	1	102	793	Amps	EMERGENCY	901	114	951.4	119.9	6.4
STOREY 2	230	WILSON	230	#1	1	101	793	Amps	EMERGENCY	801	101	851.2	107.3	6.3
STOREY 2	230	WILSON	230	#1	1	102	793	Amps	EMERGENCY	814	103	863.9	108.9	6.3
STOREY 2	230	BORDEN	230	#1	1	85	793	Amps	EMERGENCY	892	112	941.4	118.7	6.3
STOREY 2	230	BORDEN	230	#1	1	45	793	Amps	EMERGENCY	892	112	941.3	118.7	6.3
STOREY 2	230	WILSON	230	#1	1	85	793	Amps	EMERGENCY	805	101	853.8	107.6	6.2
STOREY 2	230	BORDEN	230	#1	1	59	793	Amps	EMERGENCY	969	122	1017.8	128.3	6.2
STOREY 2	230	WILSON	230	#1	1	45	793	Amps	EMERGENCY	805	101	853.9	107.6	6.2
STOREY 2	230	WILSON	230	#1	1	59	793	Amps	EMERGENCY	881	111	929.5	117.2	6.1
ORO LOMA	115	ORO LOMA	70	#2	0	7	72	MVA	EMERGENCY	69	96	72.9	101.3	5.5
STOREY 1	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	1080	136	1123.2	141.6	5.5
ORO LOMA	115	ORO LOMA	70	#2	0	19	72	MVA	EMERGENCY	70	97	73.3	101.8	5.2
STOREY 1	230	WILSON	230	#1	1	84	851	Amps	EMERGENCY	983	116	1026.4	120.6	5.1
ORO LOMA	70	DOS PALS	70	#1	1	12	282	Amps	EMERGENCY	281	100	295.2	104.7	5.1
KEARNEY	230	BULRD_EC	230	#1	1	13	976	Amps	EMERGENCY	1243	127	1292.5	132.4	5.1
ORO LOMA	115	ORO LOMA	70	#2	0	18	72	MVA	EMERGENCY	74	102	77.2	107.3	4.9
KEARNEY	230	MCMULLN1	230	#1	1	13	975	Amps	EMERGENCY	1021	105	1068.9	109.6	4.9
MCMULLN1	230	PANOCHE	230	#1	1	13	975	Amps	EMERGENCY	969	99	1017	104.3	4.9
Q194SWST	230	MIDWAY	230	#1	1	5	976	Amps	EMERGENCY	1499	154	1546.3	158.4	4.9
Q166	230	MIDWAY	230	#1	1	5	976	Amps	EMERGENCY	1485	152	1532.7	157	4.9
ORO LOMA	70	DOS PALS	70	#1	1	7	282	Amps	EMERGENCY	294	104	307.9	109.2	4.8
Q194SWST	230	MIDWAY	230	#1	1	84	976	Amps	EMERGENCY	1489	153	1536	157.3	4.8
Q166	230	MIDWAY	230	#1	1	84	976	Amps	EMERGENCY	1476	151	1522.4	155.9	4.8
ORO LOMA	70	DOS PALS	70	#1	1	6	282	Amps	EMERGENCY	285	101	298.5	105.8	4.8
STOREY 2	230	BORDEN	230	#1	1	84	793	Amps	EMERGENCY	922	116	959.2	120.9	4.7
Q194SWST	230	Q166	230	#1	1	5	976	Amps	EMERGENCY	1031	106	1077	110.3	4.7
Q194SWST	230	MIDWAY	230	#1	1	19	976	Amps	EMERGENCY	1510	155	1555.4	159.3	4.7
STOREY 2	230	WILSON	230	#1	1	84	793	Amps	EMERGENCY	835	105	871.5	109.9	4.7
Q166	230	MIDWAY	230	#1	1	19	976	Amps	EMERGENCY	1496	153	1541.8	157.9	4.6
Q194SWST	230	Q166	230	#1	1	84	976	Amps	EMERGENCY	1022	105	1067.4	109.3	4.6
Q194SWST	230	MIDWAY	230	#1	1	20	976	Amps	EMERGENCY	1497	153	1542.1	157.9	4.6

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	20	976	Amps	EMERGENCY	1484	152	1528.5	156.5	4.6
ORO LOMA	70	DOS PALS	70	#1	1	19	282	Amps	EMERGENCY	296	105	308.5	109.4	4.5
ORO LOMA	70	DOS PALS	70	#1	1	18	282	Amps	EMERGENCY	313	111	325.4	115.4	4.5
Q194SWST	230	Q166	230	#1	1	19	976	Amps	EMERGENCY	1042	107	1085.6	111.2	4.5
ORO LOMA	70	DOS PALS	70	#1	1	10	282	Amps	EMERGENCY	295	105	307.8	109.1	4.4
Q194SWST	230	MIDWAY	230	#1	1	12	976	Amps	EMERGENCY	1492	153	1535	157.2	4.4
Q194SWST	230	Q166	230	#1	1	20	976	Amps	EMERGENCY	1030	105	1073.1	109.9	4.4
Q166	230	MIDWAY	230	#1	1	12	976	Amps	EMERGENCY	1478	151	1521.4	155.8	4.4
Q194SWST	230	MIDWAY	230	#1	1	18	976	Amps	EMERGENCY	1503	154	1545.5	158.3	4.4
Q166	230	MIDWAY	230	#1	1	18	976	Amps	EMERGENCY	1489	152	1531.9	156.9	4.4
Q194SWST	230	MIDWAY	230	#1	1	7	976	Amps	EMERGENCY	1506	154	1548.4	158.6	4.4
Q194SWST	230	MIDWAY	230	#1	1	6	976	Amps	EMERGENCY	1502	154	1544.7	158.2	4.4
Q194SWST	230	MIDWAY	230	#1	1	17	976	Amps	EMERGENCY	1500	154	1542.9	158	4.4
Q166	230	MIDWAY	230	#1	1	7	976	Amps	EMERGENCY	1492	153	1534.8	157.2	4.4
Q166	230	MIDWAY	230	#1	1	6	976	Amps	EMERGENCY	1488	152	1531.2	156.8	4.4
Q166	230	MIDWAY	230	#1	1	17	976	Amps	EMERGENCY	1487	152	1529.3	156.6	4.4
SANGER	115	MC CALL	115	#3	1	52	974	Amps	EMERGENCY	1076	110	1118	114.8	4.4
Q194SWST	230	MIDWAY	230	#1	1	13	976	Amps	EMERGENCY	1523	156	1565.3	160.3	4.3
Q166	230	MIDWAY	230	#1	1	13	976	Amps	EMERGENCY	1509	155	1551.7	158.9	4.3
Q194SWST	230	MIDWAY	230	#1	1	10	976	Amps	EMERGENCY	1498	153	1540.7	157.8	4.3
Q166	230	MIDWAY	230	#1	1	10	976	Amps	EMERGENCY	1485	152	1527.2	156.4	4.3
Q194SWST	230	MIDWAY	230	#1	1	9	976	Amps	EMERGENCY	1491	153	1532.8	157	4.3
Q166	230	MIDWAY	230	#1	1	9	976	Amps	EMERGENCY	1477	151	1519.3	155.6	4.3
Q194SWST	230	MIDWAY	230	#1	1	15	976	Amps	EMERGENCY	1498	153	1539.1	157.6	4.3
Q166	230	MIDWAY	230	#1	1	15	976	Amps	EMERGENCY	1484	152	1525.5	156.2	4.3
Q194SWST	230	Q166	230	#1	1	12	976	Amps	EMERGENCY	1025	105	1066.3	109.2	4.3
Q194SWST	230	Q166	230	#1	1	18	976	Amps	EMERGENCY	1035	106	1076.4	110.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	131	976	Amps	EMERGENCY	1489	153	1530.3	156.7	4.2
Q194SWST	230	Q166	230	#1	1	7	976	Amps	EMERGENCY	1038	106	1079.1	110.5	4.2
Q194SWST	230	Q166	230	#1	1	6	976	Amps	EMERGENCY	1035	106	1075.7	110.2	4.2
Q166	230	MIDWAY	230	#1	1	131	976	Amps	EMERGENCY	1476	151	1516.8	155.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	16	976	Amps	EMERGENCY	1497	153	1538.2	157.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	57	976	Amps	EMERGENCY	1497	153	1538.2	157.5	4.2
Q166	230	MIDWAY	230	#1	1	16	976	Amps	EMERGENCY	1484	152	1524.7	156.1	4.2
Q166	230	MIDWAY	230	#1	1	57	976	Amps	EMERGENCY	1484	152	1524.7	156.1	4.2
Q194SWST	230	MIDWAY	230	#1	1	58	976	Amps	EMERGENCY	1498	153	1538.5	157.6	4.2
Q166	230	MIDWAY	230	#1	1	58	976	Amps	EMERGENCY	1484	152	1525	156.2	4.2
Q194SWST	230	Q166	230	#1	1	17	976	Amps	EMERGENCY	1033	106	1073.5	109.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	77	976	Amps	EMERGENCY	1494	153	1534.3	157.1	4.2
Q166	230	MIDWAY	230	#1	1	77	976	Amps	EMERGENCY	1480	152	1520.8	155.7	4.2
Q194SWST	230	Q166	230	#1	1	10	976	Amps	EMERGENCY	1031	106	1071.9	109.8	4.2

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q194SWST	230	MIDWAY	230	#1	1	43	976	Amps	EMERGENCY	1490	153	1530.5	156.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	48	976	Amps	EMERGENCY	1495	153	1535.4	157.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	130	976	Amps	EMERGENCY	1490	153	1530.1	156.7	4.2
Q194SWST	230	MIDWAY	230	#1	1	91	976	Amps	EMERGENCY	1495	153	1535.4	157.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	47	976	Amps	EMERGENCY	1497	153	1537.7	157.5	4.2
Q166	230	MIDWAY	230	#1	1	43	976	Amps	EMERGENCY	1476	151	1517	155.4	4.2
Q166	230	MIDWAY	230	#1	1	130	976	Amps	EMERGENCY	1476	151	1516.6	155.3	4.2
Q194SWST	230	MIDWAY	230	#1	1	133	976	Amps	EMERGENCY	1490	153	1530.8	156.8	4.2
Q194SWST	230	Q166	230	#1	1	13	976	Amps	EMERGENCY	1054	108	1094.7	112.1	4.2
Q166	230	MIDWAY	230	#1	1	48	976	Amps	EMERGENCY	1481	152	1521.9	155.9	4.2
Q194SWST	230	MIDWAY	230	#1	1	76	976	Amps	EMERGENCY	1497	153	1537.5	157.5	4.2
Q194SWST	230	MIDWAY	230	#1	1	54	976	Amps	EMERGENCY	1497	153	1537.1	157.4	4.2
Q194SWST	230	MIDWAY	230	#1	1	71	976	Amps	EMERGENCY	1494	153	1534.1	157.1	4.2
Q166	230	MIDWAY	230	#1	1	91	976	Amps	EMERGENCY	1481	152	1521.8	155.9	4.2
Q166	230	MIDWAY	230	#1	1	47	976	Amps	EMERGENCY	1484	152	1524.2	156.1	4.2
Q166	230	MIDWAY	230	#1	1	133	976	Amps	EMERGENCY	1477	151	1517.3	155.4	4.2
Q194SWST	230	MIDWAY	230	#1	1	44	976	Amps	EMERGENCY	1492	153	1532.9	157	4.2
Q194SWST	230	MIDWAY	230	#1	1	104	976	Amps	EMERGENCY	1494	153	1534.8	157.2	4.2
Q194SWST	230	MIDWAY	230	#1	1	24	976	Amps	EMERGENCY	1489	153	1529.9	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	99	976	Amps	EMERGENCY	1493	153	1533.6	157.1	4.1
Q194SWST	230	MIDWAY	230	#1	1	105	976	Amps	EMERGENCY	1494	153	1534.4	157.1	4.1
Q194SWST	230	MIDWAY	230	#1	1	125	976	Amps	EMERGENCY	1491	153	1531.6	156.9	4.1
Q166	230	MIDWAY	230	#1	1	76	976	Amps	EMERGENCY	1484	152	1524	156.1	4.1
Q166	230	MIDWAY	230	#1	1	54	976	Amps	EMERGENCY	1483	152	1523.6	156	4.1
Q194SWST	230	MIDWAY	230	#1	1	25	976	Amps	EMERGENCY	1490	153	1530.4	156.7	4.1
Q166	230	MIDWAY	230	#1	1	71	976	Amps	EMERGENCY	1480	152	1520.6	155.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	46	976	Amps	EMERGENCY	1489	152	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	100	976	Amps	EMERGENCY	1492	153	1532.5	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	32	976	Amps	EMERGENCY	1490	153	1530.4	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	90	976	Amps	EMERGENCY	1492	153	1532.9	157	4.1
Q166	230	MIDWAY	230	#1	1	104	976	Amps	EMERGENCY	1481	152	1521.3	155.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	21	976	Amps	EMERGENCY	1489	153	1529.6	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	41	976	Amps	EMERGENCY	1491	153	1531.8	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	118	976	Amps	EMERGENCY	1491	153	1531.9	156.9	4.1
Q166	230	MIDWAY	230	#1	1	24	976	Amps	EMERGENCY	1476	151	1516.4	155.3	4.1
Q166	230	MIDWAY	230	#1	1	44	976	Amps	EMERGENCY	1479	151	1519.4	155.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	97	976	Amps	EMERGENCY	1492	153	1532.8	157	4.1
Q166	230	MIDWAY	230	#1	1	105	976	Amps	EMERGENCY	1480	152	1520.9	155.8	4.1
Q166	230	MIDWAY	230	#1	1	125	976	Amps	EMERGENCY	1478	151	1518.1	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	106	976	Amps	EMERGENCY	1488	152	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	122	976	Amps	EMERGENCY	1491	153	1531.7	156.9	4.1

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Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	99	976	Amps	EMERGENCY	1480	152	1520.1	155.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	53	976	Amps	EMERGENCY	1492	153	1532.3	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	95	976	Amps	EMERGENCY	1491	153	1531	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	98	976	Amps	EMERGENCY	1492	153	1532.3	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	103	976	Amps	EMERGENCY	1491	153	1531.5	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	27	976	Amps	EMERGENCY	1490	153	1530.6	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	89	976	Amps	EMERGENCY	1490	153	1530.8	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	34	976	Amps	EMERGENCY	1489	152	1529.5	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	88	976	Amps	EMERGENCY	1490	153	1530.8	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	62	976	Amps	EMERGENCY	1488	152	1528.9	156.6	4.1
Q166	230	MIDWAY	230	#1	1	25	976	Amps	EMERGENCY	1477	151	1516.9	155.3	4.1
Q166	230	MIDWAY	230	#1	1	100	976	Amps	EMERGENCY	1479	151	1519	155.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	49	976	Amps	EMERGENCY	1490	153	1530.7	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	75	976	Amps	EMERGENCY	1490	153	1530.6	156.8	4.1
Q194SWST	230	MIDWAY	230	#1	1	108	976	Amps	EMERGENCY	1490	153	1530.7	156.8	4.1
Q166	230	MIDWAY	230	#1	1	32	976	Amps	EMERGENCY	1476	151	1516.9	155.3	4.1
Q166	230	MIDWAY	230	#1	1	46	976	Amps	EMERGENCY	1475	151	1515.5	155.2	4.1
Q194SWST	230	MIDWAY	230	#1	1	22	976	Amps	EMERGENCY	1490	153	1530.1	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	63	976	Amps	EMERGENCY	1491	153	1531.5	156.8	4.1
Q166	230	MIDWAY	230	#1	1	21	976	Amps	EMERGENCY	1476	151	1516.1	155.3	4.1
Q194SWST	230	MIDWAY	230	#1	1	28	976	Amps	EMERGENCY	1490	153	1530.1	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	40	976	Amps	EMERGENCY	1490	153	1530.1	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	42	976	Amps	EMERGENCY	1489	152	1529.2	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	74	976	Amps	EMERGENCY	1491	153	1531.7	156.9	4.1
Q194SWST	230	MIDWAY	230	#1	1	135	976	Amps	EMERGENCY	1490	153	1530	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	107	976	Amps	EMERGENCY	1489	153	1529.9	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	3	976	Amps	EMERGENCY	1489	152	1529.2	156.6	4.1
Q166	230	MIDWAY	230	#1	1	41	976	Amps	EMERGENCY	1478	151	1518.2	155.5	4.1
Q166	230	MIDWAY	230	#1	1	90	976	Amps	EMERGENCY	1479	151	1519.4	155.6	4.1
Q166	230	MIDWAY	230	#1	1	97	976	Amps	EMERGENCY	1479	151	1519.3	155.6	4.1
Q166	230	MIDWAY	230	#1	1	106	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	118	976	Amps	EMERGENCY	1478	151	1518.4	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	29	976	Amps	EMERGENCY	1489	152	1529.3	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	52	976	Amps	EMERGENCY	1488	152	1528.9	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	94	976	Amps	EMERGENCY	1489	152	1529.3	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	119	976	Amps	EMERGENCY	1489	153	1529.8	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	123	976	Amps	EMERGENCY	1489	153	1529.7	156.7	4.1
Q194SWST	230	MIDWAY	230	#1	1	36	976	Amps	EMERGENCY	1488	152	1528.7	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	112	976	Amps	EMERGENCY	1489	152	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	114	976	Amps	EMERGENCY	1489	152	1529.2	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	117	976	Amps	EMERGENCY	1488	152	1528.8	156.6	4.1

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Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q194SWST	230	MIDWAY	230	#1	1	124	976	Amps	EMERGENCY	1489	152	1529.1	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	132	976	Amps	EMERGENCY	1489	152	1529	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	113	976	Amps	EMERGENCY	1488	152	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	128	976	Amps	EMERGENCY	1489	152	1528.9	156.6	4.1
Q166	230	MIDWAY	230	#1	1	122	976	Amps	EMERGENCY	1478	151	1518.2	155.5	4.1
Q194SWST	230	MIDWAY	230	#1	1	38	976	Amps	EMERGENCY	1489	152	1528.9	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	126	976	Amps	EMERGENCY	1488	152	1528.8	156.6	4.1
Q194SWST	230	MIDWAY	230	#1	1	129	976	Amps	EMERGENCY	1491	153	1531.5	156.8	4.1
Q166	230	MIDWAY	230	#1	1	27	976	Amps	EMERGENCY	1477	151	1517.1	155.4	4.1
Q166	230	MIDWAY	230	#1	1	53	976	Amps	EMERGENCY	1478	151	1518.8	155.5	4.1
Q166	230	MIDWAY	230	#1	1	98	976	Amps	EMERGENCY	1478	151	1518.8	155.5	4.1
Q166	230	MIDWAY	230	#1	1	103	976	Amps	EMERGENCY	1478	151	1518	155.5	4.1
Q166	230	MIDWAY	230	#1	1	34	976	Amps	EMERGENCY	1476	151	1516	155.3	4.1
Q194SWST	230	MIDWAY	230	#1	1	39	976	Amps	EMERGENCY	1488	152	1528.6	156.5	4.1
Q166	230	MIDWAY	230	#1	1	28	976	Amps	EMERGENCY	1476	151	1516.6	155.3	4.1
Q166	230	MIDWAY	230	#1	1	62	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	88	976	Amps	EMERGENCY	1477	151	1517.3	155.4	4.1
Q166	230	MIDWAY	230	#1	1	95	976	Amps	EMERGENCY	1477	151	1517.5	155.4	4.1
Q166	230	MIDWAY	230	#1	1	75	976	Amps	EMERGENCY	1477	151	1517.1	155.4	4.1
Q166	230	MIDWAY	230	#1	1	74	976	Amps	EMERGENCY	1478	151	1518.2	155.5	4.1
Q166	230	MIDWAY	230	#1	1	49	976	Amps	EMERGENCY	1477	151	1517.2	155.4	4.1
Q166	230	MIDWAY	230	#1	1	108	976	Amps	EMERGENCY	1477	151	1517.2	155.4	4.1
Q166	230	MIDWAY	230	#1	1	22	976	Amps	EMERGENCY	1476	151	1516.6	155.3	4.1
Q166	230	MIDWAY	230	#1	1	63	976	Amps	EMERGENCY	1478	151	1518	155.5	4.1
Q166	230	MIDWAY	230	#1	1	89	976	Amps	EMERGENCY	1477	151	1517.2	155.4	4.1
Q194SWST	230	MIDWAY	230	#1	1	134	976	Amps	EMERGENCY	1494	153	1534	157.1	4.1
Q166	230	MIDWAY	230	#1	1	42	976	Amps	EMERGENCY	1475	151	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	123	976	Amps	EMERGENCY	1476	151	1516.2	155.3	4.1
Q166	230	MIDWAY	230	#1	1	135	976	Amps	EMERGENCY	1476	151	1516.5	155.3	4.1
Q166	230	MIDWAY	230	#1	1	40	976	Amps	EMERGENCY	1476	151	1516.6	155.3	4.1
Q166	230	MIDWAY	230	#1	1	114	976	Amps	EMERGENCY	1475	151	1515.7	155.2	4.1
Q166	230	MIDWAY	230	#1	1	29	976	Amps	EMERGENCY	1475	151	1515.8	155.2	4.1
Q166	230	MIDWAY	230	#1	1	52	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	107	976	Amps	EMERGENCY	1476	151	1516.3	155.3	4.1
Q166	230	MIDWAY	230	#1	1	119	976	Amps	EMERGENCY	1476	151	1516.2	155.3	4.1
Q166	230	MIDWAY	230	#1	1	124	976	Amps	EMERGENCY	1475	151	1515.6	155.2	4.1
Q194SWST	230	Q166	230	#1	1	9	976	Amps	EMERGENCY	1024	105	1064.3	109	4.1
Q166	230	MIDWAY	230	#1	1	3	976	Amps	EMERGENCY	1475	151	1515.6	155.2	4.1
Q166	230	MIDWAY	230	#1	1	36	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q166	230	MIDWAY	230	#1	1	94	976	Amps	EMERGENCY	1476	151	1515.8	155.2	4.1
Q166	230	MIDWAY	230	#1	1	112	976	Amps	EMERGENCY	1475	151	1515.5	155.2	4.1

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q166	230	MIDWAY	230	#1	1	117	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	128	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	113	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	38	976	Amps	EMERGENCY	1475	151	1515.4	155.2	4.1
Q166	230	MIDWAY	230	#1	1	39	976	Amps	EMERGENCY	1475	151	1515.1	155.2	4.1
Q166	230	MIDWAY	230	#1	1	126	976	Amps	EMERGENCY	1475	151	1515.3	155.2	4.1
Q166	230	MIDWAY	230	#1	1	129	976	Amps	EMERGENCY	1478	151	1518	155.5	4.1
Q166	230	MIDWAY	230	#1	1	132	976	Amps	EMERGENCY	1475	151	1515.4	155.2	4.1
Q166	230	MIDWAY	230	#1	1	134	976	Amps	EMERGENCY	1480	152	1520.5	155.7	4.1
Q194SWST	230	Q166	230	#1	1	15	976	Amps	EMERGENCY	1030	106	1070.3	109.6	4.1
Q194SWST	230	Q166	230	#1	1	131	976	Amps	EMERGENCY	1022	105	1062	108.8	4.1
Q194SWST	230	Q166	230	#1	1	16	976	Amps	EMERGENCY	1030	105	1069.4	109.5	4
Q194SWST	230	Q166	230	#1	1	57	976	Amps	EMERGENCY	1030	105	1069.4	109.5	4
Q194SWST	230	Q166	230	#1	1	58	976	Amps	EMERGENCY	1030	106	1069.6	109.5	4
ORO LOMA	70	DOS PALS	70	#1	1	9	282	Amps	EMERGENCY	276	98	287.1	101.8	4
Q194SWST	230	Q166	230	#1	1	77	976	Amps	EMERGENCY	1026	105	1065.7	109.1	4
Q194SWST	230	Q166	230	#1	1	43	976	Amps	EMERGENCY	1023	105	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	130	976	Amps	EMERGENCY	1023	105	1061.8	108.7	4
Q194SWST	230	Q166	230	#1	1	133	976	Amps	EMERGENCY	1023	105	1062.4	108.8	4
Q194SWST	230	Q166	230	#1	1	48	976	Amps	EMERGENCY	1028	105	1066.7	109.2	4
Q194SWST	230	Q166	230	#1	1	91	976	Amps	EMERGENCY	1028	105	1066.6	109.2	4
Q194SWST	230	Q166	230	#1	1	71	976	Amps	EMERGENCY	1027	105	1065.5	109.1	4
Q194SWST	230	Q166	230	#1	1	24	976	Amps	EMERGENCY	1023	105	1061.5	108.7	4
Q194SWST	230	Q166	230	#1	1	44	976	Amps	EMERGENCY	1025	105	1064.3	109	4
Q194SWST	230	Q166	230	#1	1	47	976	Amps	EMERGENCY	1030	105	1068.8	109.5	4
Q194SWST	230	Q166	230	#1	1	104	976	Amps	EMERGENCY	1027	105	1066.1	109.2	4
Q194SWST	230	Q166	230	#1	1	54	976	Amps	EMERGENCY	1029	105	1068.3	109.4	4
Q194SWST	230	Q166	230	#1	1	76	976	Amps	EMERGENCY	1030	105	1068.6	109.4	4
Q194SWST	230	Q166	230	#1	1	125	976	Amps	EMERGENCY	1024	105	1063.1	108.9	4
Q194SWST	230	Q166	230	#1	1	25	976	Amps	EMERGENCY	1023	105	1062	108.8	4
Q194SWST	230	Q166	230	#1	1	32	976	Amps	EMERGENCY	1023	105	1062	108.8	4
Q194SWST	230	Q166	230	#1	1	21	976	Amps	EMERGENCY	1022	105	1061.3	108.7	4
Q194SWST	230	Q166	230	#1	1	46	976	Amps	EMERGENCY	1022	105	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	105	976	Amps	EMERGENCY	1027	105	1065.7	109.1	4
Q194SWST	230	Q166	230	#1	1	99	976	Amps	EMERGENCY	1026	105	1065	109.1	4
Q194SWST	230	Q166	230	#1	1	106	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	100	976	Amps	EMERGENCY	1025	105	1063.9	109	4
Q194SWST	230	Q166	230	#1	1	63	976	Amps	EMERGENCY	1024	105	1063	108.9	4
Q194SWST	230	Q166	230	#1	1	90	976	Amps	EMERGENCY	1025	105	1064.3	109	4
Q194SWST	230	Q166	230	#1	1	97	976	Amps	EMERGENCY	1025	105	1064.2	109	4
Q194SWST	230	Q166	230	#1	1	122	976	Amps	EMERGENCY	1024	105	1063.2	108.9	4

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
Q194SWST	230	Q166	230	#1	1	34	976	Amps	EMERGENCY	1022	105	1061.2	108.7	4
Q194SWST	230	Q166	230	#1	1	41	976	Amps	EMERGENCY	1024	105	1063.2	108.9	4
Q194SWST	230	Q166	230	#1	1	49	976	Amps	EMERGENCY	1023	105	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	88	976	Amps	EMERGENCY	1024	105	1062.4	108.8	4
Q194SWST	230	Q166	230	#1	1	108	976	Amps	EMERGENCY	1023	105	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	118	976	Amps	EMERGENCY	1025	105	1063.4	108.9	4
Q194SWST	230	Q166	230	#1	1	27	976	Amps	EMERGENCY	1023	105	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	28	976	Amps	EMERGENCY	1023	105	1061.7	108.7	4
Q194SWST	230	Q166	230	#1	1	95	976	Amps	EMERGENCY	1024	105	1062.6	108.8	4
Q194SWST	230	Q166	230	#1	1	52	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	53	976	Amps	EMERGENCY	1025	105	1063.8	108.9	4
Q194SWST	230	Q166	230	#1	1	62	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	75	976	Amps	EMERGENCY	1023	105	1062.2	108.8	4
Q194SWST	230	Q166	230	#1	1	89	976	Amps	EMERGENCY	1023	105	1062.3	108.8	4
Q194SWST	230	Q166	230	#1	1	98	976	Amps	EMERGENCY	1025	105	1063.8	108.9	4
Q194SWST	230	Q166	230	#1	1	135	976	Amps	EMERGENCY	1023	105	1061.6	108.7	4
Q194SWST	230	Q166	230	#1	1	40	976	Amps	EMERGENCY	1023	105	1061.7	108.7	4
Q194SWST	230	Q166	230	#1	1	42	976	Amps	EMERGENCY	1022	105	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	103	976	Amps	EMERGENCY	1024	105	1063	108.9	4
Q194SWST	230	Q166	230	#1	1	107	976	Amps	EMERGENCY	1023	105	1061.5	108.7	4
Q194SWST	230	Q166	230	#1	1	114	976	Amps	EMERGENCY	1022	105	1060.9	108.6	4
Q194SWST	230	Q166	230	#1	1	123	976	Amps	EMERGENCY	1023	105	1061.4	108.7	4
Q194SWST	230	Q166	230	#1	1	74	976	Amps	EMERGENCY	1024	105	1063.2	108.9	4
Q194SWST	230	Q166	230	#1	1	22	976	Amps	EMERGENCY	1023	105	1061.7	108.7	4
Q194SWST	230	Q166	230	#1	1	29	976	Amps	EMERGENCY	1022	105	1060.9	108.7	4
Q194SWST	230	Q166	230	#1	1	112	976	Amps	EMERGENCY	1022	105	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	124	976	Amps	EMERGENCY	1022	105	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	126	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	132	976	Amps	EMERGENCY	1022	105	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	117	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	119	976	Amps	EMERGENCY	1023	105	1061.4	108.7	4
Q194SWST	230	Q166	230	#1	1	3	976	Amps	EMERGENCY	1022	105	1060.8	108.6	4
Q194SWST	230	Q166	230	#1	1	39	976	Amps	EMERGENCY	1022	105	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	94	976	Amps	EMERGENCY	1022	105	1061	108.7	4
Q194SWST	230	Q166	230	#1	1	113	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	128	976	Amps	EMERGENCY	1022	105	1060.5	108.6	4
Q194SWST	230	Q166	230	#1	1	36	976	Amps	EMERGENCY	1022	105	1060.3	108.6	4
Q194SWST	230	Q166	230	#1	1	38	976	Amps	EMERGENCY	1022	105	1060.6	108.6	4
Q194SWST	230	Q166	230	#1	1	134	976	Amps	EMERGENCY	1027	105	1065.5	109.1	4
Q194SWST	230	Q166	230	#1	1	129	976	Amps	EMERGENCY	1025	105	1063.3	108.9	4
MC CALL	230	MCCALL2M	115	#2	0	80	465	MVA	EMERGENCY	465	100	482.5	103.8	3.8

Avenal Energy Project
Appendix C--Steady State Power Flow Results
Category C outages--2013 Summer Peak Operating Conditions

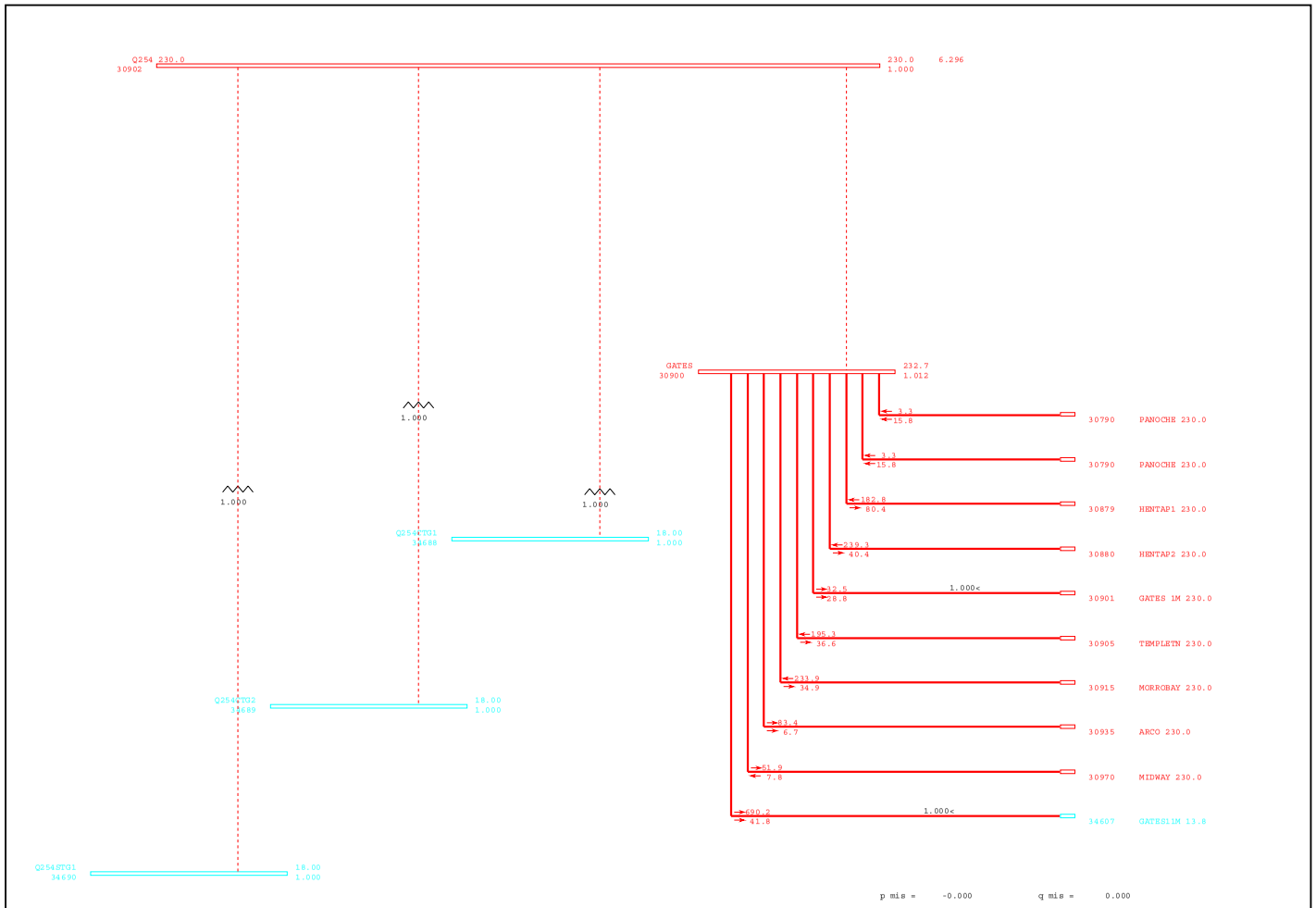
FROM NAME	FROM KV	TO NAME	TO KV	CKT	SEC	NO	RATING	UNIT	TYPE	PRE-LOADING	PRE_PCT (%)	PST_LOADING	PRE_PCT (%)	DELTA_PCT (%)
TOMATAK	70	MENDOTA	70	#1	1	30	396	Amps	EMERGENCY	401	101	416.1	105.1	3.8
ORO LOMA	115	ORO LOMA	70	#2	0	42	72	MVA	EMERGENCY	75	105	78	108.3	3.7
MC CALL	115	MCCALL2M	115	#2	0	80	465	MVA	EMERGENCY	450	97	466.8	100.4	3.7
CERTAN T	115	LE GRAND	115	#1	1	59	397	Amps	EMERGENCY	460	116	472.4	119.1	3.2
Q194SWST	230	MIDWAY	230	#1	1	83	976	Amps	EMERGENCY	1751	179	1782.1	182.5	3.1
Q166	230	MIDWAY	230	#1	1	83	976	Amps	EMERGENCY	1738	178	1768.3	181.1	3.1
Q166	230	Q194SWST	230	#1	1	83	976	Amps	EMERGENCY	1277	131	1306.4	133.8	3
Q194SWST	230	MIDWAY	230	#1	1	82	976	Amps	EMERGENCY	1717	176	1745.4	178.7	2.9
Q166	230	MIDWAY	230	#1	1	82	976	Amps	EMERGENCY	1703	174	1731.6	177.3	2.9
Q166	230	Q194SWST	230	#1	1	82	976	Amps	EMERGENCY	1243	127	1270.1	130.1	2.8
COLNGA 2	70	PLSNTVLY	70	#1	1	129	398	Amps	EMERGENCY	432	108	442.3	111	2.6
CRESEY T	115	ATWATR J	115	#1	1	1	512	Amps	EMERGENCY	1013	198	1024.6	200.1	2.3
LE GRAND	115	WILSON A	115	#1	1	48	512	Amps	EMERGENCY	516	101	527.4	103	2.1
ATWATR J	115	MERCED	115	#1	1	1	738	Amps	EMERGENCY	1187	161	1200.5	162.7	1.9
EXCHEQUR	70	MCSWAINJ	70	#1	1	23	280	Amps	EMERGENCY	305	109	310.1	110.6	1.7
MERCED	115	WILSON A	115	#1	1	1	472	Amps	EMERGENCY	710	150	716.9	151.9	1.5
MERCED	115	WILSON B	115	#2	1	1	472	Amps	EMERGENCY	638	135	644.3	136.5	1.3
HELM	70	STRD JCT	70	#1	1	16	378	Amps	EMERGENCY	468	124	473	125.2	1.2
HELM	70	STRD JCT	70	#1	1	57	378	Amps	EMERGENCY	468	124	473	125.2	1.2
CHLDHOSP	115	HERNDON	115	#1	1	91	974	Amps	EMERGENCY	1100	113	1111.9	114.2	1.2
WOODWARD	115	CHLDHOSP	115	#1	1	91	974	Amps	EMERGENCY	1080	111	1091.9	112.1	1.2
SANGER	115	MC CALL	115	#3	1	59	974	Amps	EMERGENCY	1005	103	1016.7	104.4	1.2
REEDLEY	70	PARLIER	70	#1	1	94	396	Amps	EMERGENCY	566	143	570.5	144.1	1.2
PARLIER	70	SNGRJCT	70	#1	1	94	470	Amps	EMERGENCY	754	160	758.4	161.3	1
SNGRJCT	70	SANGER	70	#1	1	94	396	Amps	EMERGENCY	424	107	428.2	108.2	1
FGRDN T2	230	GREGG	230	#1	1	61	850	Amps	EMERGENCY	1254	148	1244.2	146.4	-1.2
FGRDN T2	230	ASHLAN	230	#1	1	61	850	Amps	EMERGENCY	1122	132	1111.5	130.8	-1.2
TEMPLETN	230	GATES	230	#1	1	83	975	Amps	EMERGENCY	1182	121	1121.7	115.1	-6.2
MORROBAY	230	GATES	230	#1	1	82	975	Amps	EMERGENCY	1233	126	1169.5	120	-6.5

Appendix D

Power Flow Plots

Avenal Energy Project Power flow Plots

Plot	Description
1-3	2011 Spring Peak, Pre-project
4-6	2011 Spring Peak, Post-project
7-9	2011 Summer Off-Peak, Pre-project
10-12	2011 Summer Off-peak, Post-project
13-15	2011 Summer Peak, Pre-project
16-18	2011 Summer Peak, Post-project



General Electric International, Inc. PSLF Program Wed Mar 12 15:11:02 2008 2013sprpk_q254_pre.sav

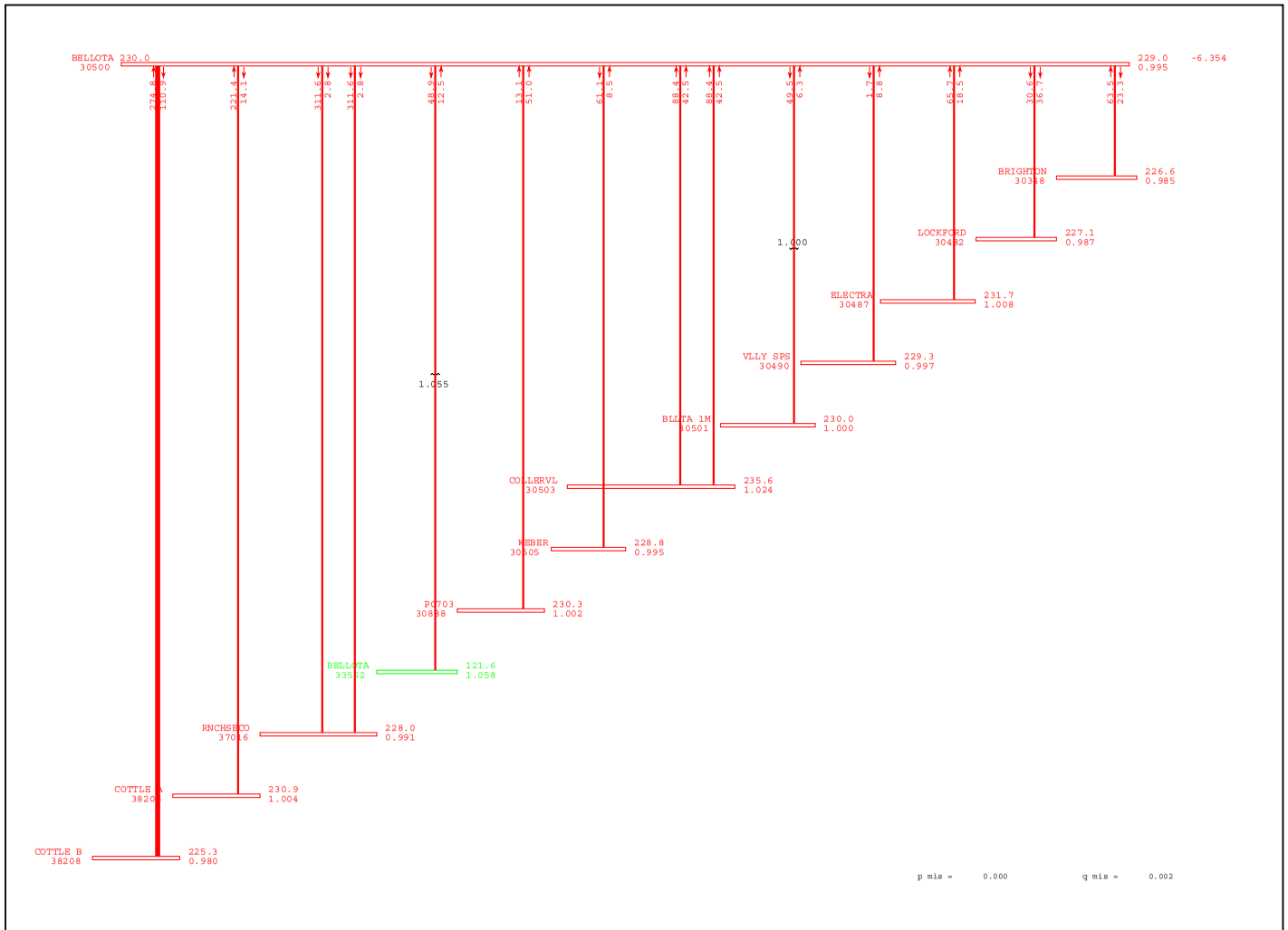
PG&E 2007 CASE SERIES: 2013 Spring Peak Pre-Project Case

PATH15= 60 MW(S-N) PATH26= 2962 MW(N-S) PDCI= 3091 MW(N-S) COI= 4620 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Pre-Project FY

MW/MVAR

Rating = 1



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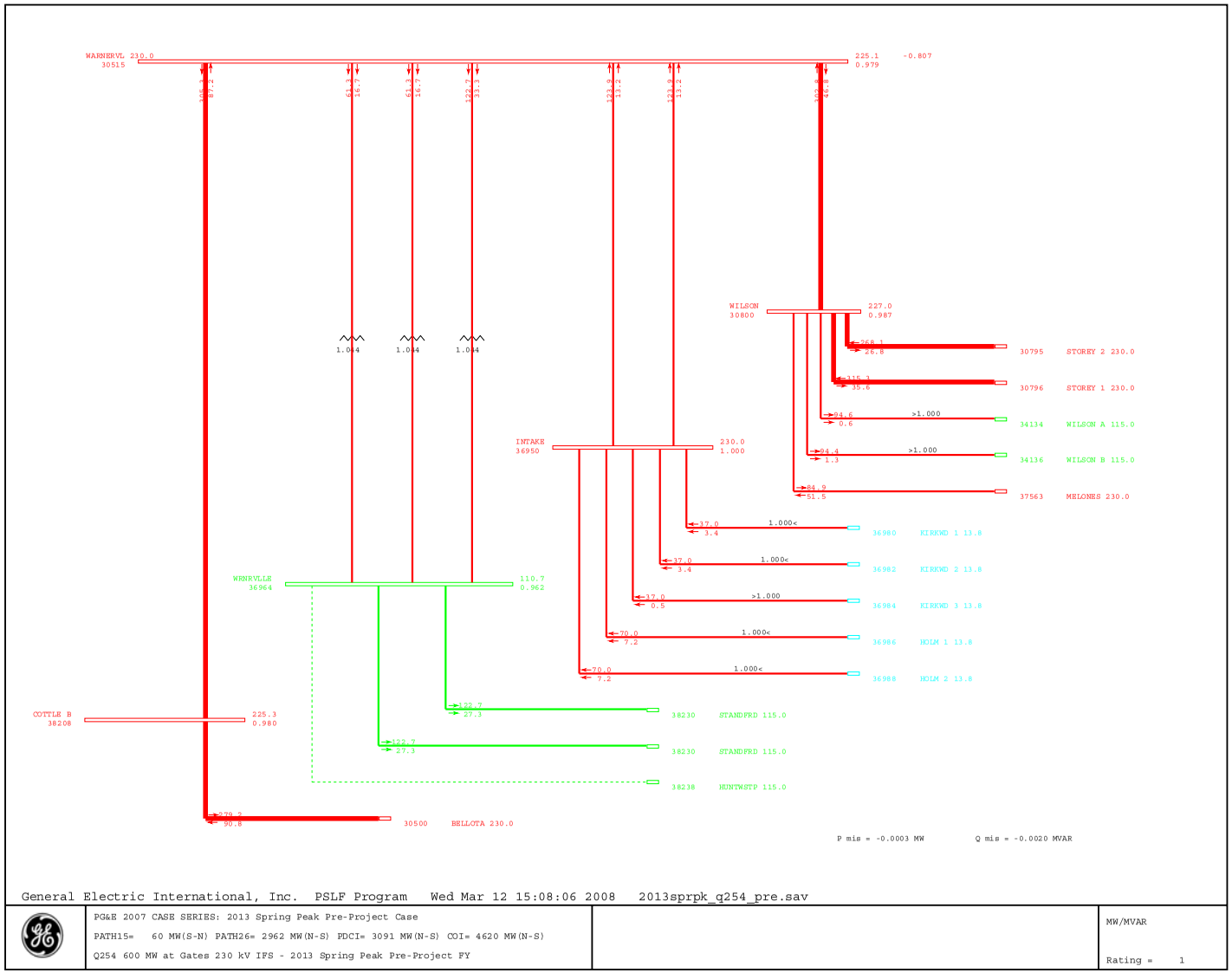
PG&E 2007 CASE SERIES: 2013 Spring Peak Pre-Project Case

PATH15= 60 MW(S-N) PATH26= 2962 MW(N-S) PDCI= 3091 MW(N-S) COI= 4620 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Pre-Project FY

MW/MVAR

Rating = 1



General Electric International, Inc. PSLF Program Wed Mar 12 15:08:06 2008 2013sprpk_q254_pre.sav

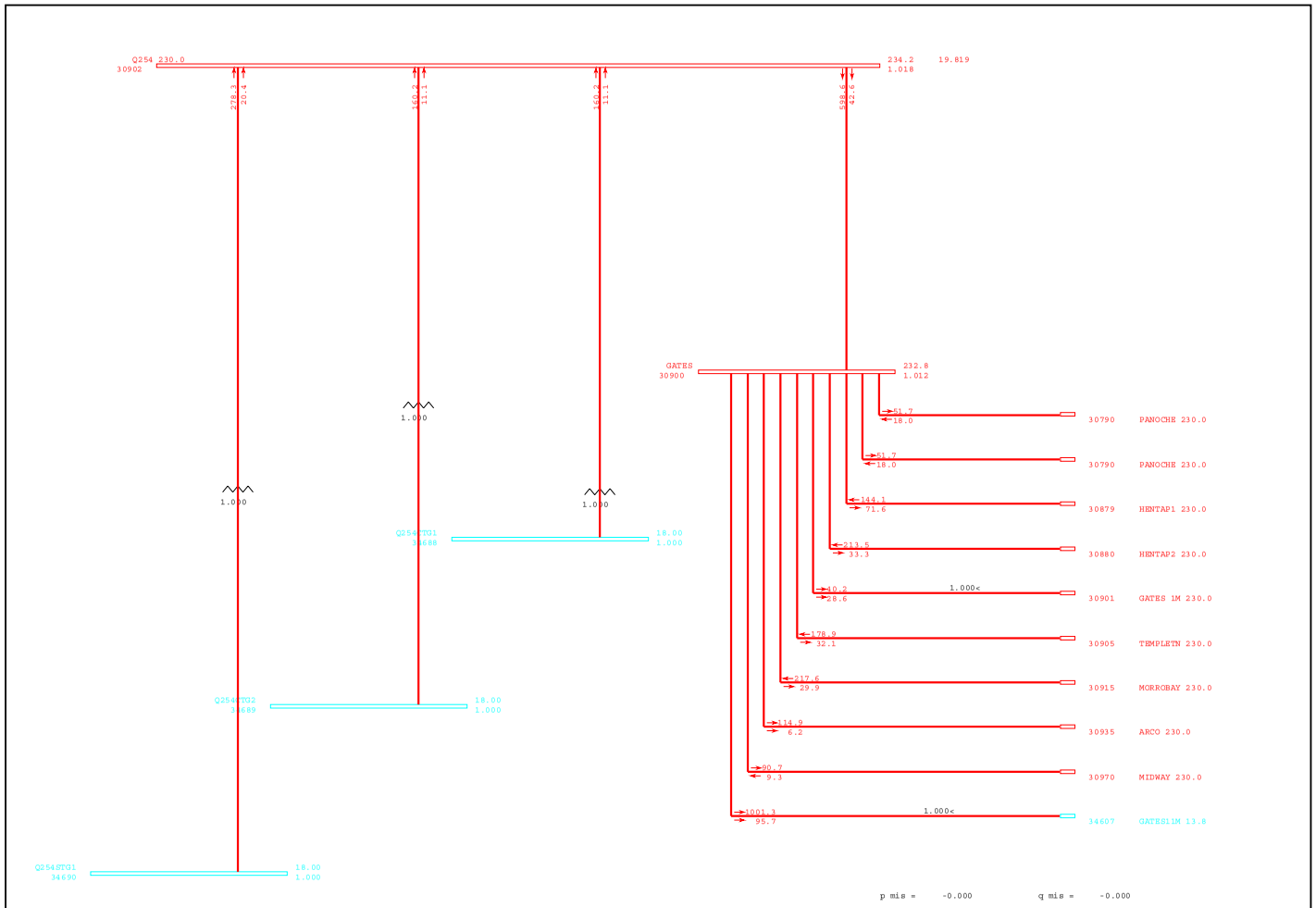
PG&E 2007 CASE SERIES: 2013 Spring Peak Pre-Project Case

PATH15= 60 MW(S-N) PATH26= 2962 MW(N-S) PDCI= 3091 MW(N-S) COI= 4620 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Pre-Project FY

MW/MVAR

Rating = 1



General Electric International, Inc. PSLF Program Wed Mar 12 15:11:25 2008 2013sprpk_q254_pst.sav

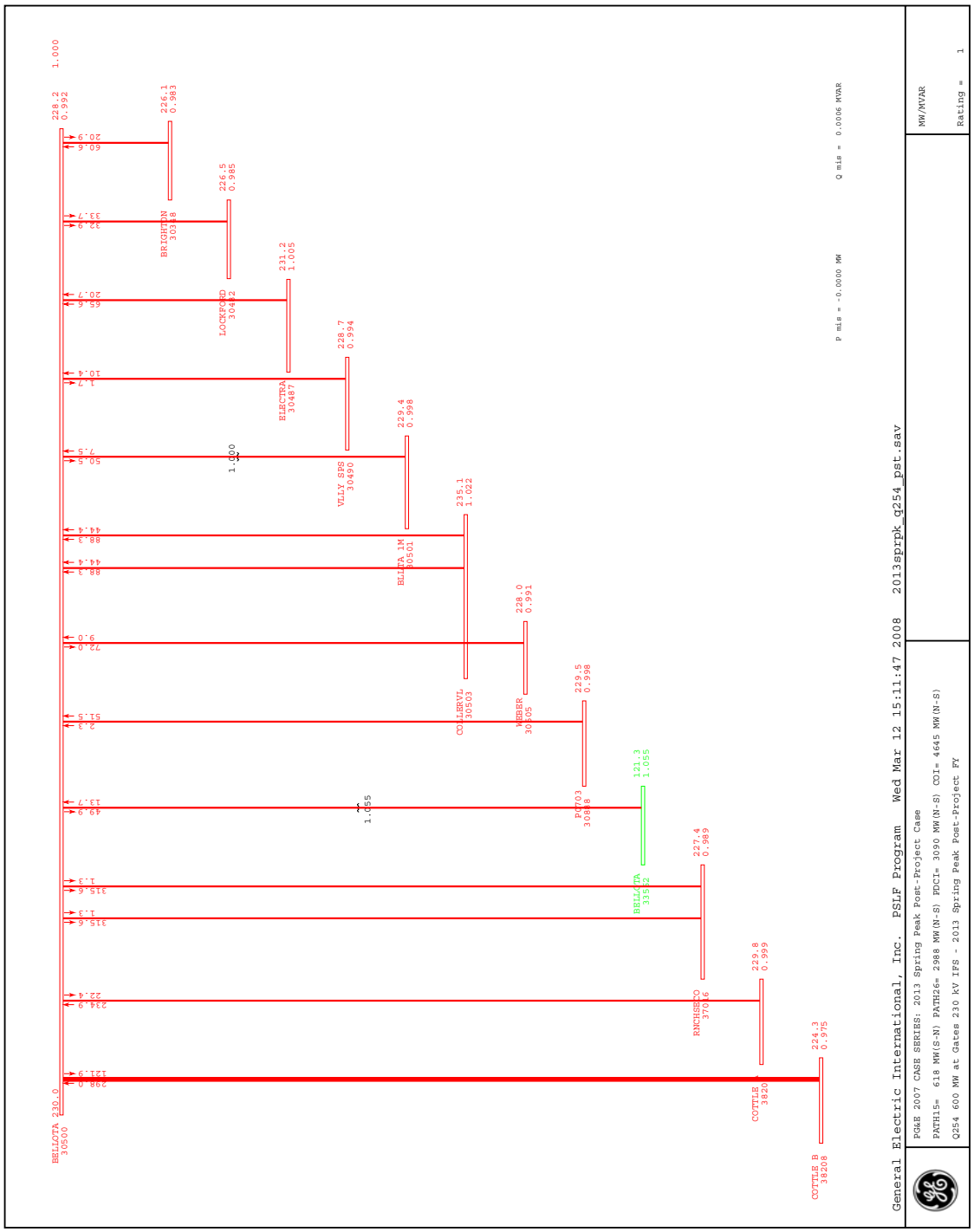
PG&E 2007 CASE SERIES: 2013 Spring Peak Post-Project Case

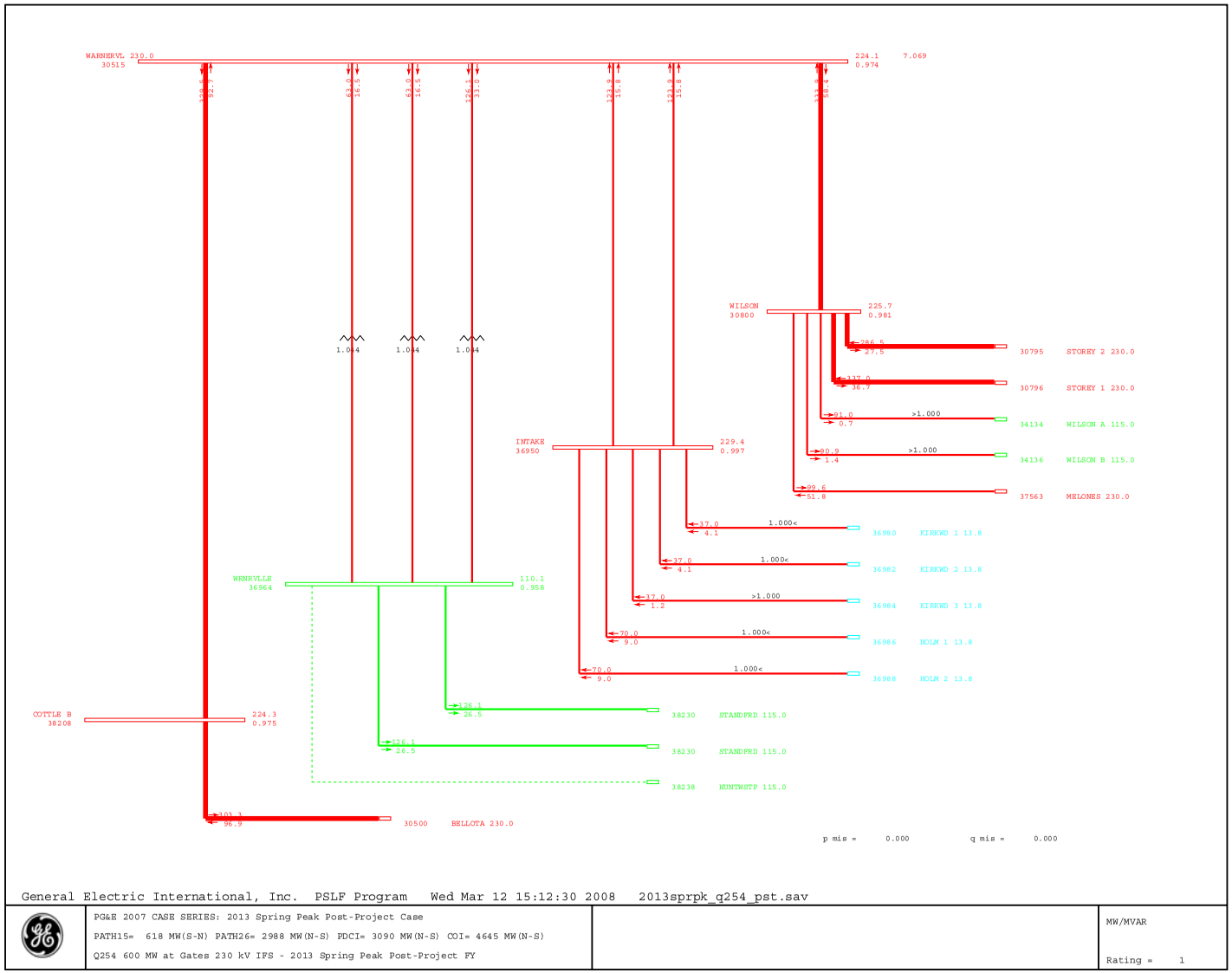
PATH15= 618 MW(S-N) PATH26= 2988 MW(N-S) PDCI= 3090 MW(N-S) COI= 4645 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Post-Project FY

MW/MVAR

Rating = 1


General Electric International, Inc. PSLF Program Wed Mar 12 15:11:47 2008 2013sprpk_q254_pst.sav
PG&E 2007 CASE SERIES: 2013 Spring Peak Post-Project Case
PATH15= 618 MW(S-N) PATH26= 2988 MW(N-S) PDCI= 3090 MW(N-S) COI= 4645 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Post-Project PY
P mis = -0.0000 MW
Q mis = 0.0006 MVAR
MW/MVAR
Rating = 1
BELLOTA 230.0 30500
298.0 121.9
234.9 22.4
315.6 1.3
315.6 1.3
49.9 13.7
51.5 2.3
72.0 9.0
88.3 44.4
88.3 44.4
50.5 7.5
65.6 20.7
10.4 1.7
22.9 33.7
60.6 20.9
228.2 0.992
1.000
1.055
1.000
226.1 0.983
BRIGHTON 30318
226.5 0.985
LOCKFORD 30412
231.2 1.005
ELECTRA 30487
228.7 0.994
VLLY SPS 30490
229.4 0.998
BLLTA 1M 30501
235.1 1.022
COLLEGVL 30503
228.0 0.991
WEBER 30505
229.5 0.998
ETT03 30888
121.3 1.055
BRILLOTA 39522
227.4 0.989
RNCHSECO 37016
229.8 0.999
COTTLE 38200
224.3 0.975
COTTLE B 38208



General Electric International, Inc. PSLF Program Wed Mar 12 15:12:30 2008 2013sprpk_q254_pst.sav

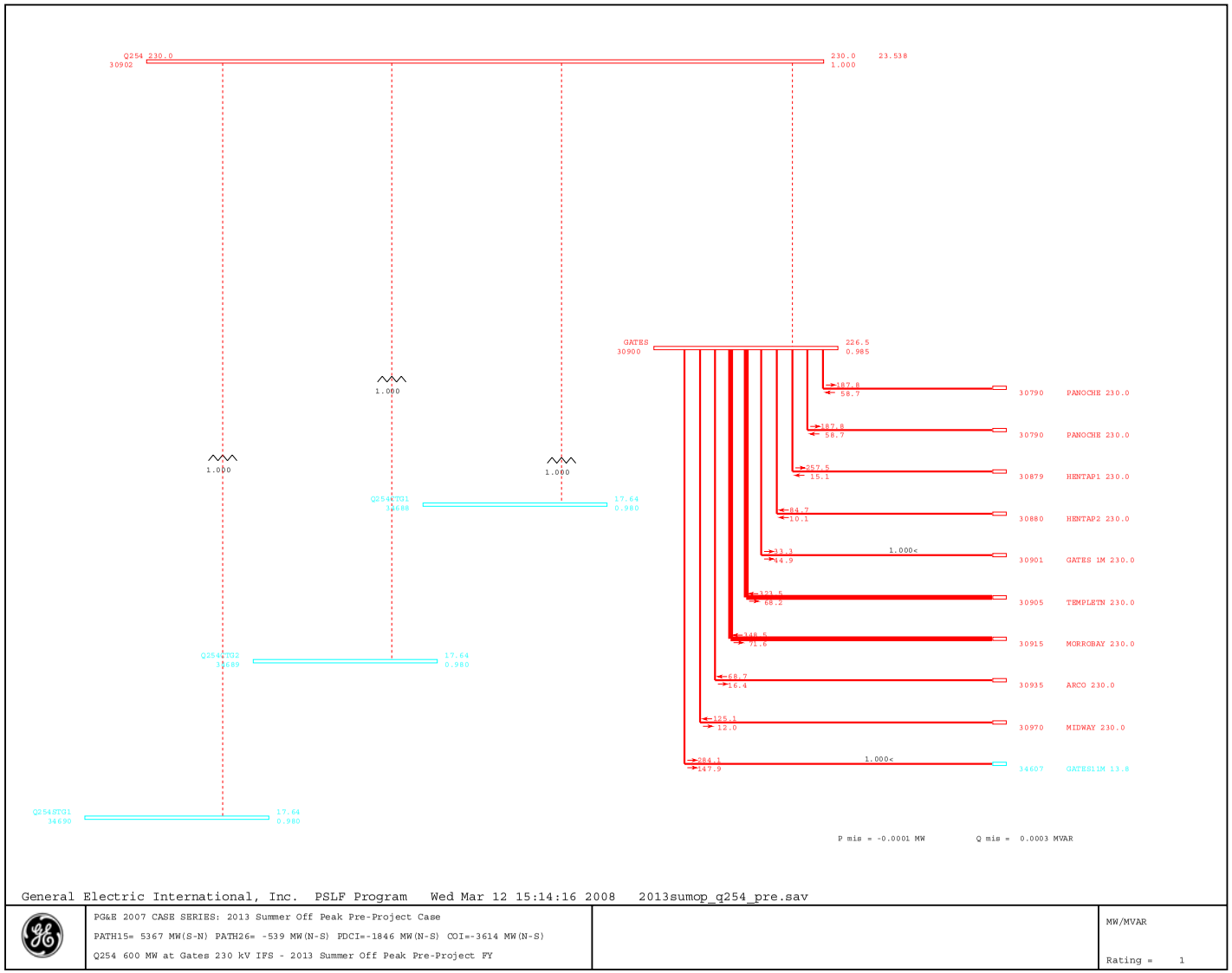
PG&E 2007 CASE SERIES: 2013 Spring Peak Post-Project Case

PATH15= 618 MW(S-N) PATH26= 2988 MW(N-S) PDCI= 3090 MW(N-S) COI= 4645 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Spring Peak Post-Project FY

MW/MVAR

Rating = 1



General Electric International, Inc. PSLF Program Wed Mar 12 15:14:16 2008 2013sumop_q254_pre.sav

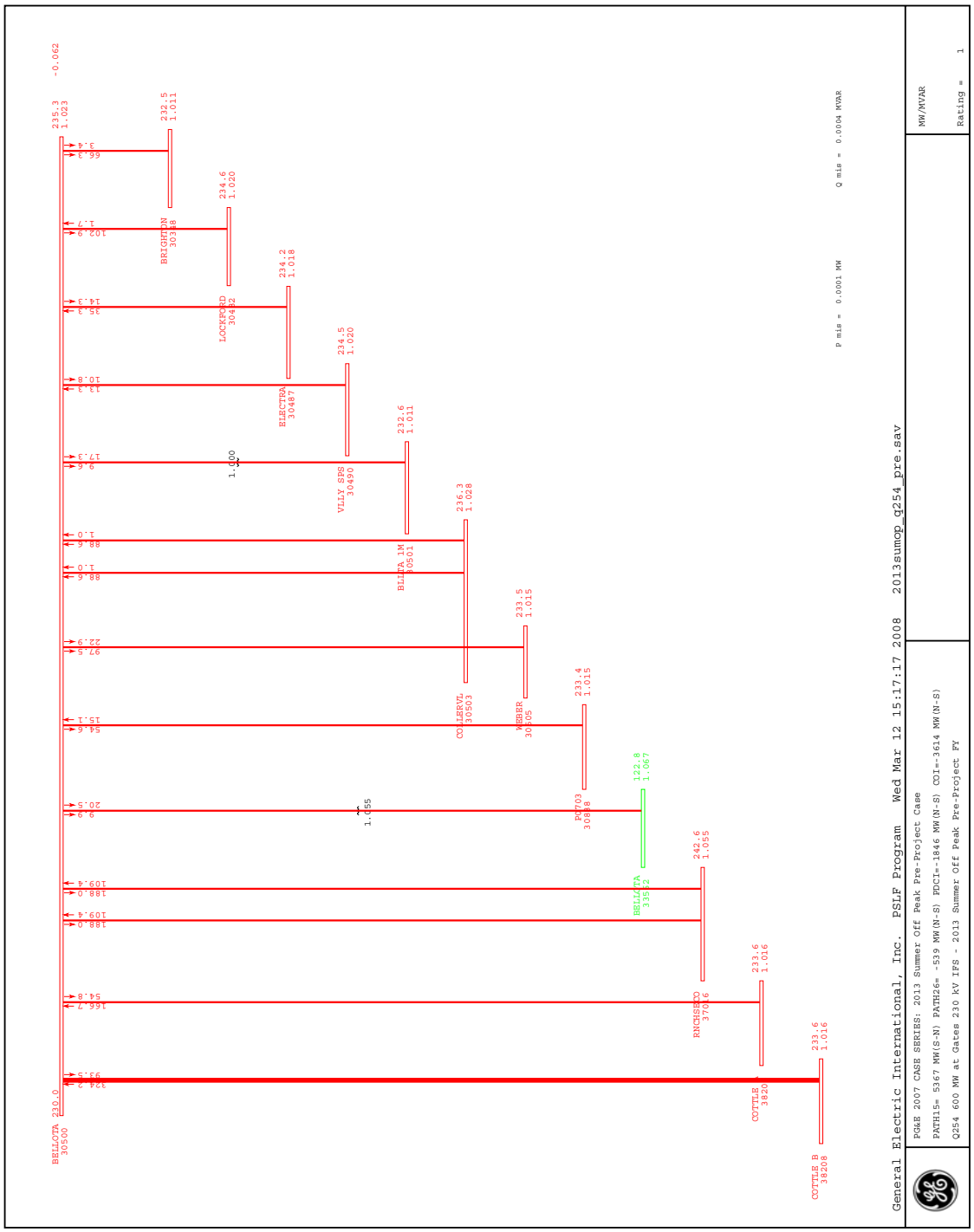
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Pre-Project Case

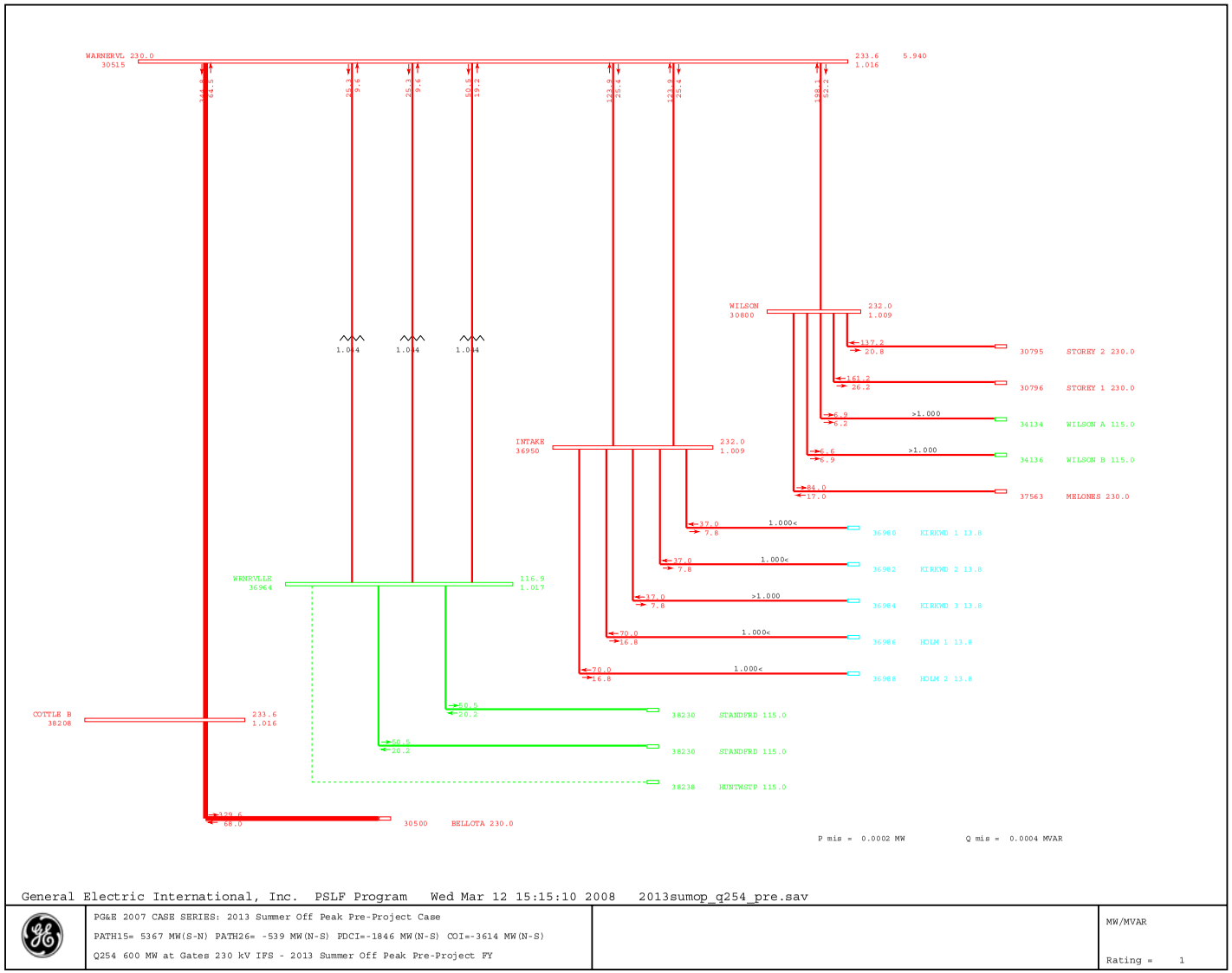
PATH15= 5367 MW(S-N) PATH26= -539 MW(N-S) PDCI=-1846 MW(N-S) COI=-3614 MW(N-S)

Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Pre-Project FY

MW/MVAR

Rating = 1


General Electric International, Inc. PSLF Program Wed Mar 12 15:17:17 2008 2013sumop_q254_pre.sav
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Pre-Project Case
PATH15= 5367 MW(S-N) PATH26= -539 MW(N-S) PDCI=-1846 MW(N-S) COI=-3614 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Pre-Project FY
MW/MVAR
Rating = 1
P mis = 0.0001 MW
Q mis = 0.0004 MVAR
BRILOTA 30500
230.0
235.3 1.023
-0.062
BRIGHTON 30188
232.5 1.011
LOCKFORD 30482
234.6 1.020
BIRCTBA 30487
234.2 1.018
VILLY SPS 30490
234.5 1.020
BLLTA 1M 30501
232.6 1.011
COLLERVL 30503
236.3 1.028
WEBER 30505
233.5 1.015
FOTOG 30898
233.4 1.015
BRILOTA 33552
122.8 1.067
RNCHSBTO 37016
242.6 1.055
COTTLE 3820
233.6 1.016
COTTLE B 38208
233.6 1.016
1.000
1.055



General Electric International, Inc. PSLF Program Wed Mar 12 15:15:10 2008 2013sumop_q254_pre.sav

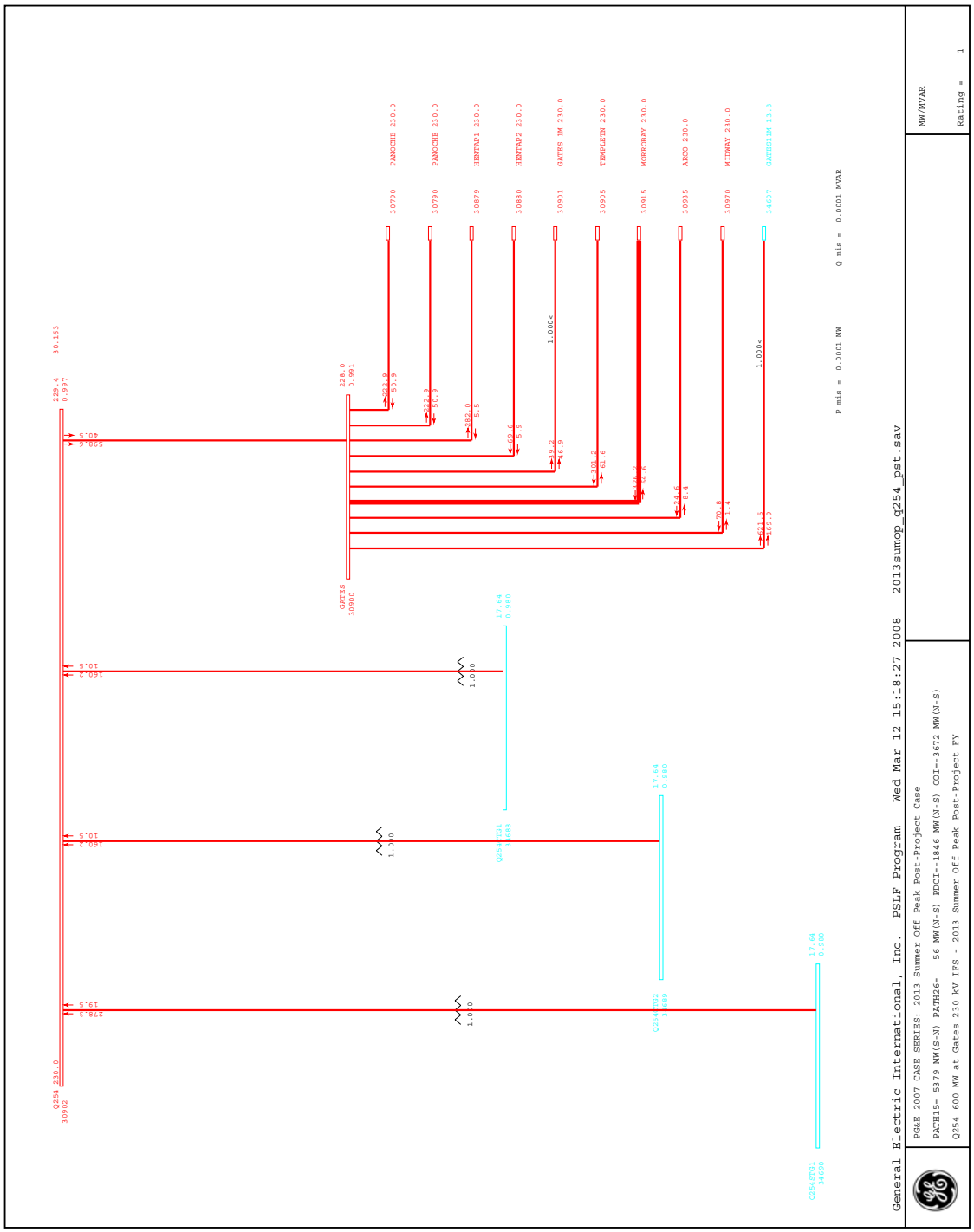
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Pre-Project Case

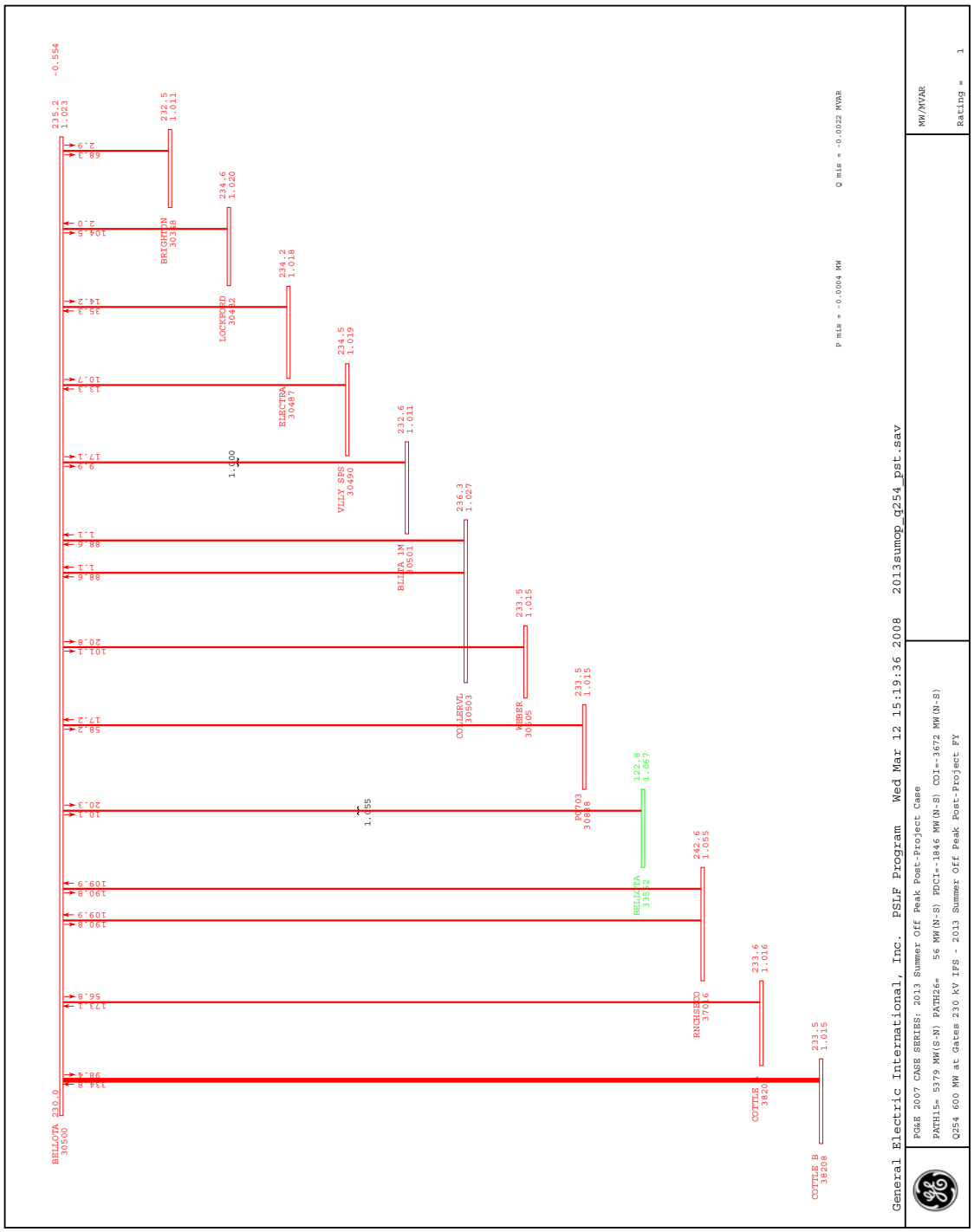
PATH15= 5367 MW(S-N) PATH26= -539 MW(N-S) PDCI=-1846 MW(N-S) COI=-3614 MW(N-S)

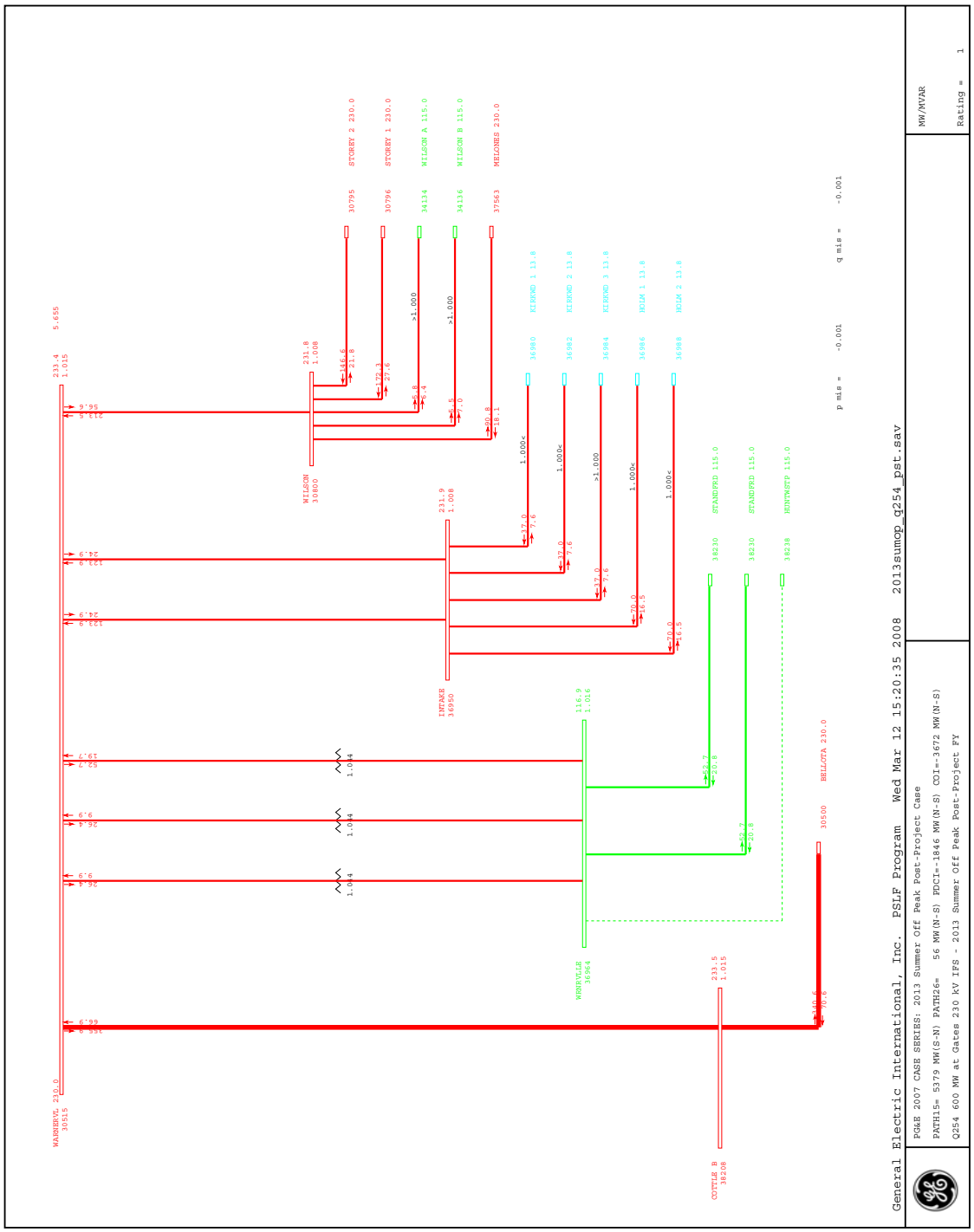
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Pre-Project FY

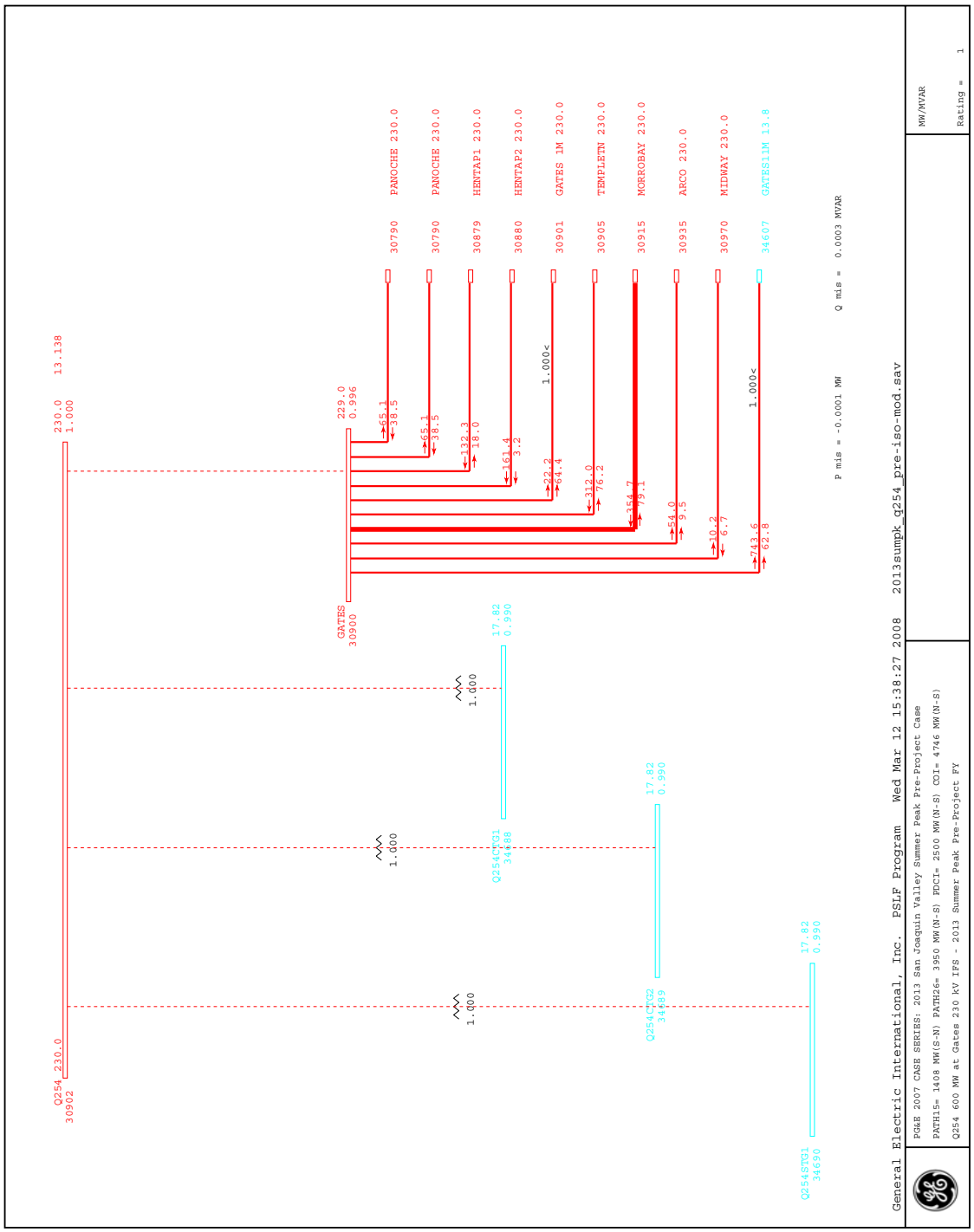
MW/MVAR

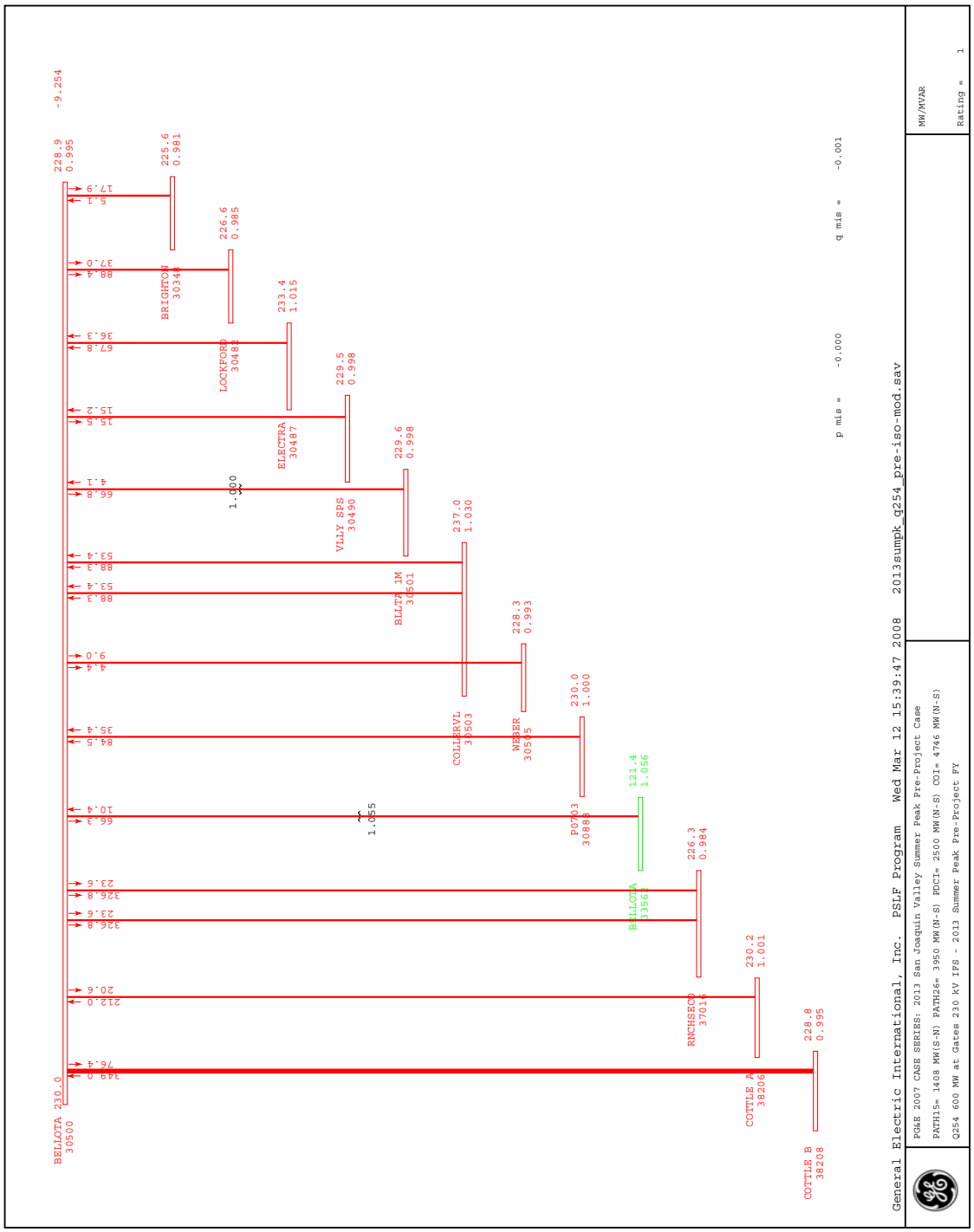
Rating = 1

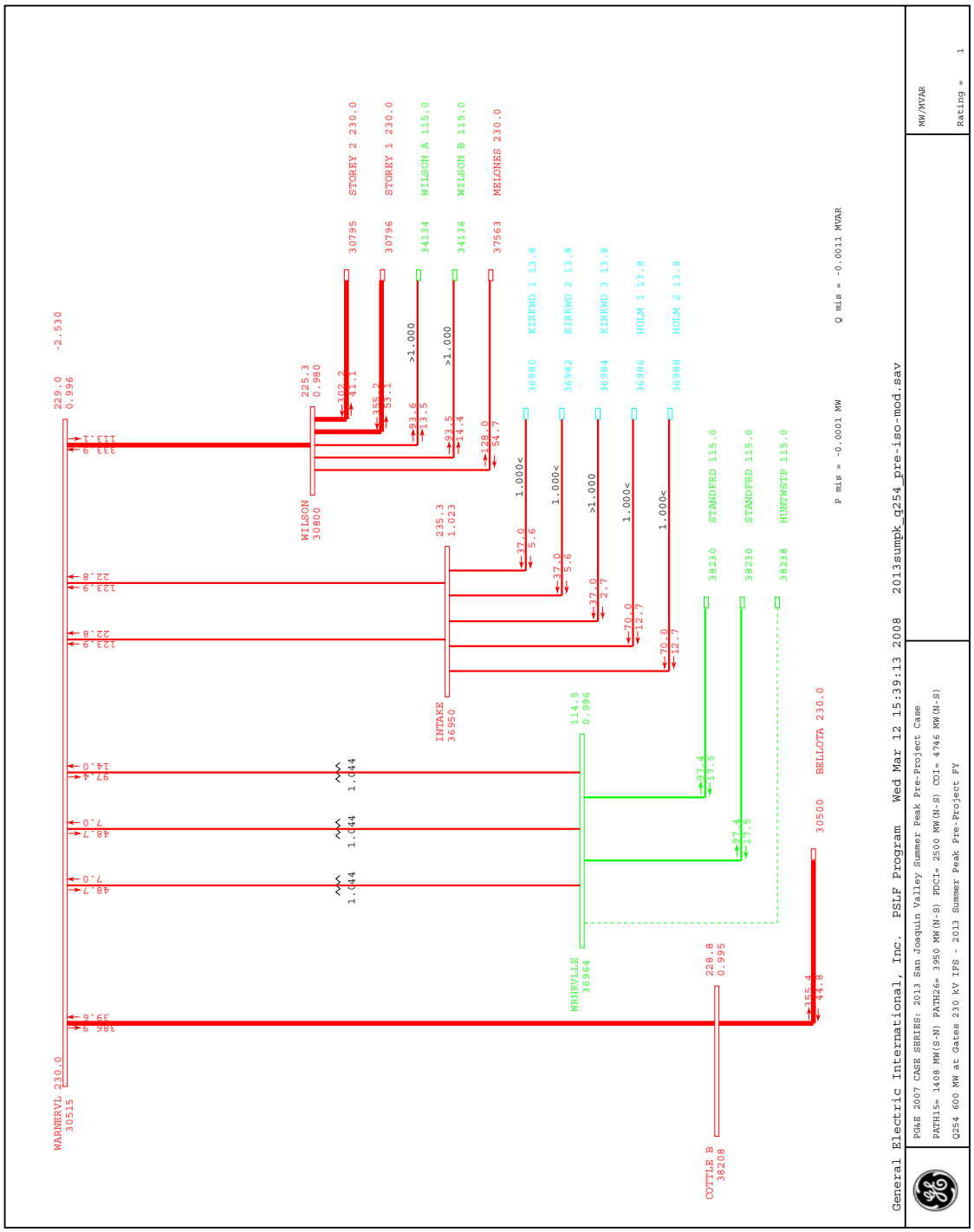

General Electric International, Inc. PSLF Program Wed Mar 12 15:18:27 2008 2013sumop_q254_pst.sav
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Post-Project Case
PATH15= 5379 MW(S-N) PATH26= 56 MW(N-S) PDCI=-1846 MW(N-S) COI=-3672 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Post-Project FY
MW/MVAR
Rating = 1
P mis = 0.0001 MW
Q mis = 0.0001 MVAR
PANOCHE 210.0
PANOCHE 210.0
HENTAP1 210.0
HENTAP2 210.0
GATES 1M 230.0
TEMPLETN 230.0
MORROBAY 230.0
ASCO 230.0
MIDWAY 230.0
GATES1M 11.8
GATES
30900
Q254
30982
230.0
Q254TG1
34690
Q254TG2
34689
Q254TG3
34688

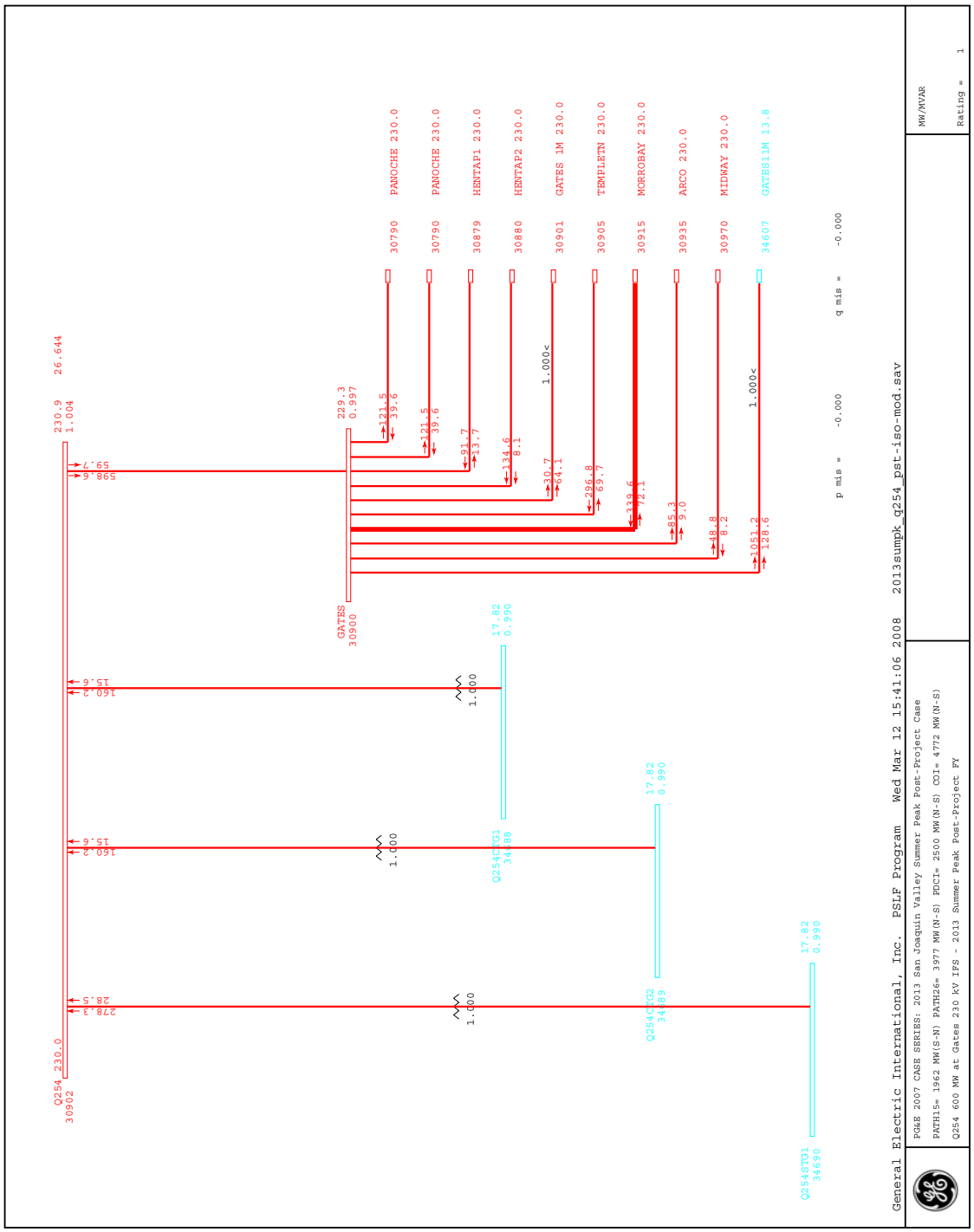

General Electric International, Inc. PSLF Program Wed Mar 12 15:19:36 2008 2013sumop_q254_pst.sav
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Post-Project Case
PATH15= 5379 MW(S-N) PATH26= 56 MW(N-S) PDCI=-1846 MW(N-S) COI=-3672 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Post-Project FY
MW/MVAR
Rating = 1
P mis = -0.0004 MW
Q mis = -0.0022 MVAR
BRILOTA 30500
230.0
235.2 1.023
-0.554
BRIGHTON 30188
232.5 1.011
LOCKFORD 30482
234.6 1.020
BIRCTBA 30487
234.2 1.018
VILLY SPS 30490
234.5 1.019
BLLTA 1M 30501
232.6 1.011
COLLERVL 30503
236.3 1.027
WEBER 30505
233.5 1.015
FOTOG 30898
233.5 1.015
BRILOTA 33552
122.8 1.067
RNCHSBTC 37016
242.6 1.055
COTTLE 3820
233.6 1.016
COTTLE B 38208
233.5 1.015
1.000
1.055

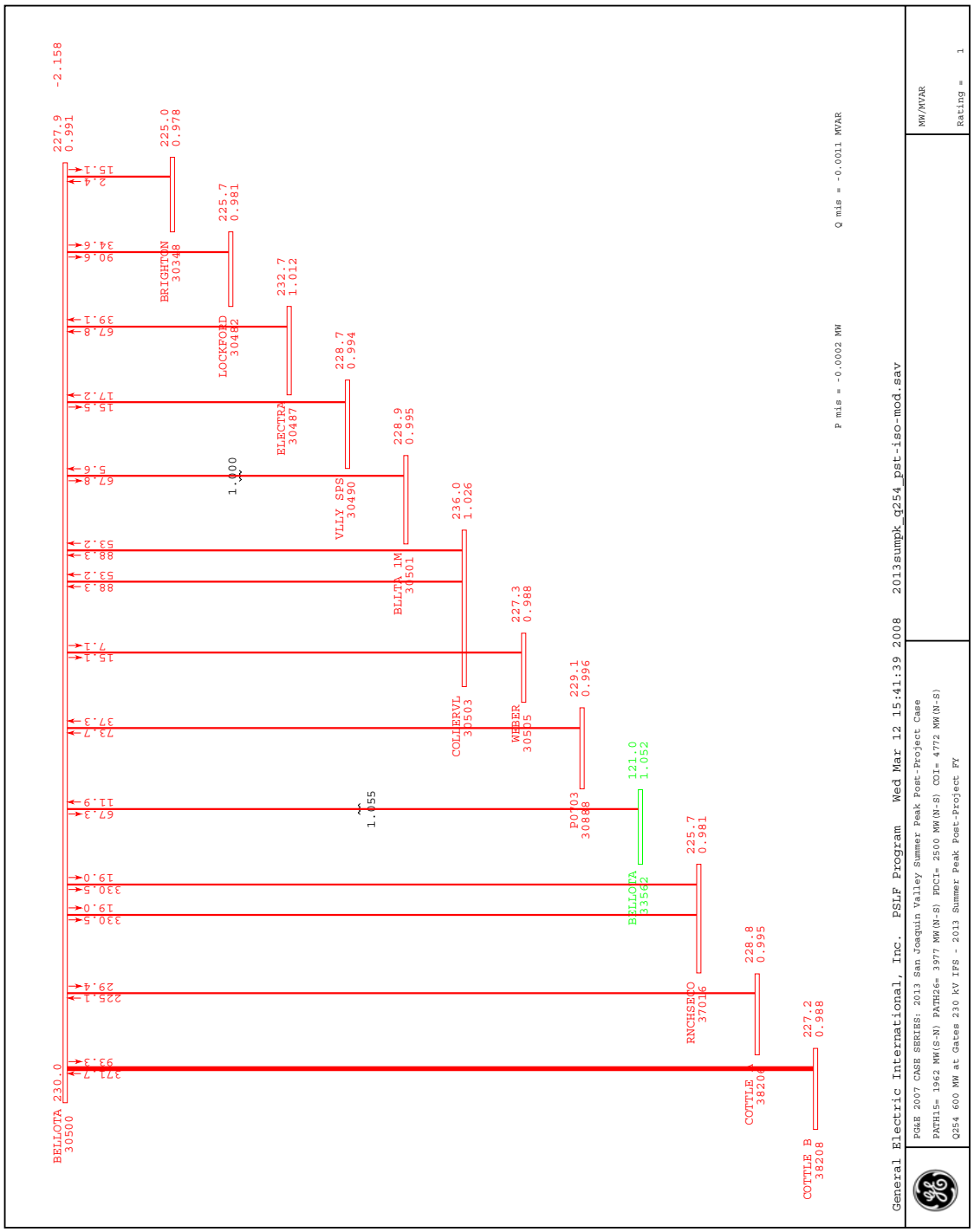

General Electric International, Inc. PSLF Program Wed Mar 12 15:20:35 2008 2013sumop_q254_pst.sav
PG&E 2007 CASE SERIES: 2013 Summer Off Peak Post-Project Case
PATH15= 5379 MW(S-N) PATH26= 56 MW(N-S) PDCI=-1846 MW(N-S) COI=-3672 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Off Peak Post-Project FY
MW/MVAR
Rating = 1
p mis = -0.001
q mis = -0.001
WARNERVL 230.0
30515
COTTLE B
38208
WEBERVLLE
36964
INTAKE
36950
WILSON
30800
HELLOTA 230.0
30500
STANDFRD 115.0
38230
HUNTWSTP 115.0
38238
KIERND 1 13.8
36980
KIERND 2 13.8
36982
KIERND 3 13.8
36984
HOLM 1 13.8
36986
HOLM 2 13.8
36988
STORKY 2 230.0
30795
STORKY 1 230.0
30796
WILSON A 115.0
34134
WILSON B 115.0
34136
MELONES 230.0
37563

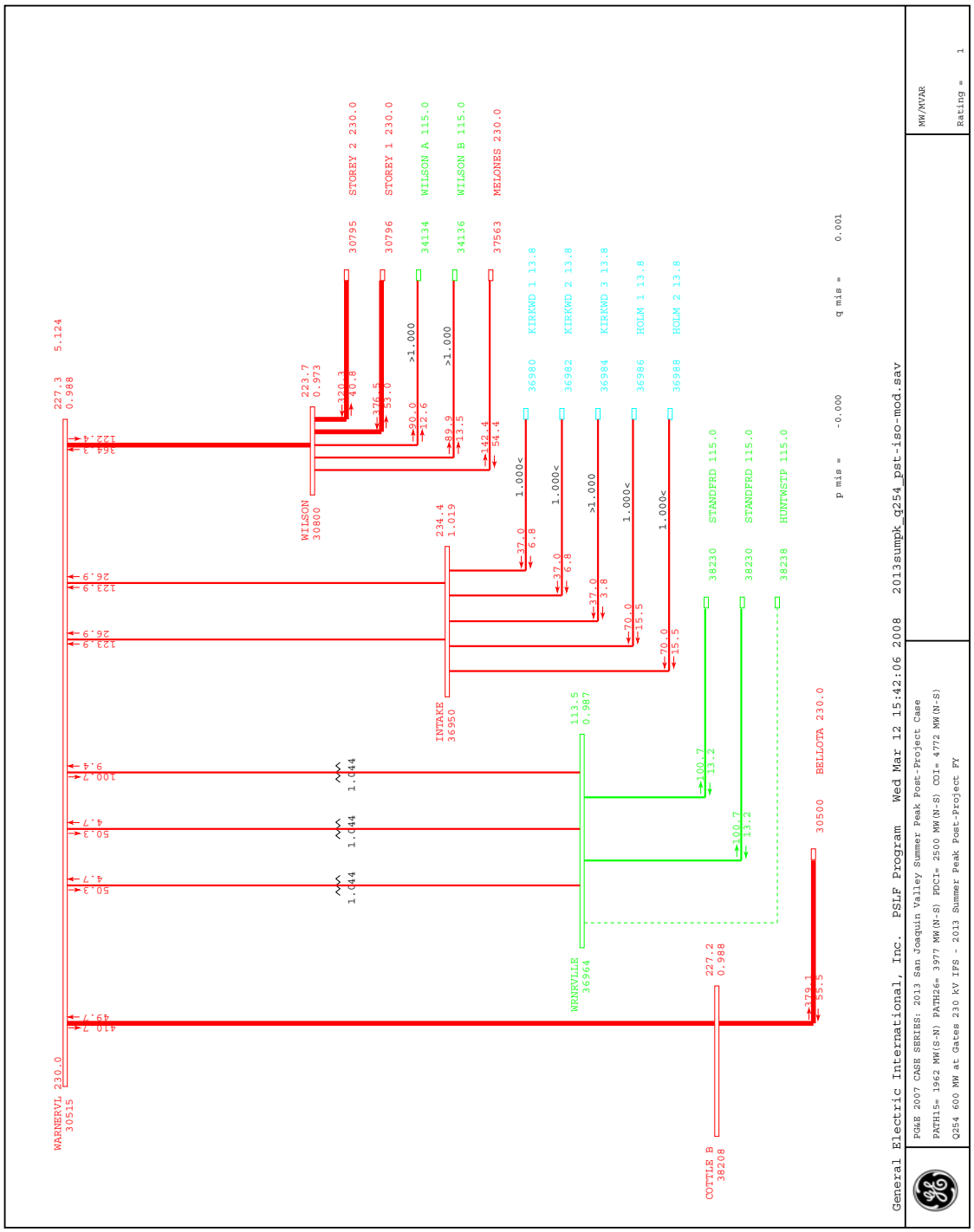

General Electric International, Inc. PSLF Program Wed Mar 12 15:38:27 2008 2013sumpk_q254_pre-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Pre-Project Case
PATH15= 1408 MW(S-N) PATH26= 3950 MW(N-S) PDCI= 2500 MW(N-S) COI= 4746 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Pre-Project FY
MW/MVAR
Rating = 1
P mis = -0.0001 MW
Q mis = 0.0003 MVAR
Q254 230.0
30902
230.0 13.138
1.000
GATES
30900
229.0
0.996
PANOCHE 230.0
30790
65.1
38.5
PANOCHE 230.0
30790
65.1
38.5
HENTAP1 230.0
30879
132.3
18.0
HENTAP2 230.0
30880
161.4
3.2
GATES 1M 230.0
30901
22.2
64.4
1.000<
TEMPLETN 230.0
30905
312.0
76.2
MORROBAY 230.0
30915
154.7
79.1
ARCO 230.0
30935
54.0
9.5
MIDWAY 230.0
30970
10.2
6.7
GATES11M 13.8
34607
743.6
62.8
1.000<
1.000
1.000
1.000
Q254CTG1
34688
17.82
0.990
Q254CTG2
34689
17.82
0.990
Q254STG1
34690
17.82
0.990


General Electric International, Inc. PSLF Program Wed Mar 12 15:39:47 2008 2013sumpk_q254_pre-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Pre-Project Case
PATH15= 1408 MW(S-N) PATH26= 3950 MW(N-S) PDCI= 2500 MW(N-S) COI= 4746 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Pre-Project FY
MW/MVAR
Rating = 1
p mis = -0.000
q mis = -0.001
BELLOTA 230.0 30500
-9.254
228.9 0.995
225.6 0.981
BRIGHTON 30344
226.6 0.985
LOCKFORD 30482
233.4 1.015
ELECTRA 30487
229.5 0.998
VLLY SPS 30490
229.6 0.998
1.000
BLLTP 1M 30501
237.0 1.030
COLLIERVL 30503
228.3 0.993
WEBER 30545
230.0 1.000
P0703 30888
1.055
121.4 1.056
BELLOTA 33562
226.3 0.984
RNCHSECO 37016
230.2 1.001
COTTLE A 38206
228.8 0.995
COTTLE B 38208
17.9 5.1
37.0 88.4
36.3 67.8
15.2 15.5
4.1 66.8
53.4 88.3
53.4 88.3
9.0 4.4
35.4 84.5
10.4 66.3
23.6 326.8
23.6 326.8
20.6 212.0
76.4 349.0


WARNERVL 230.0
30515
229.0 0.996
-2.530
386.9 39.6
97.4 14.0
48.7 7.0
48.7 7.0
1.044
1.044
1.044
123.9 22.8
123.9 22.8
113.1 113.1
WILSON
30800
225.3 0.980
302.2 41.1
155.2 53.1
93.6 13.5
93.5 14.4
128.0 54.7
>1.000
>1.000
30795 STOREY 2 230.0
30796 STOREY 1 230.0
34134 WILSON A 115.0
34136 WILSON B 115.0
37563 MELONES 230.0
INTAKE
36950
235.3 1.023
1.000<
1.000<
>1.000
1.000<
1.000<
37.0 5.6
37.0 5.6
37.0 2.7
70.0 12.7
70.0 12.7
36980 KIRKWD 1 13.8
36982 KIRKWD 2 13.8
36984 KIRKWD 3 13.8
36986 HOLM 1 13.8
36988 HOLM 2 13.8
WRNRVLLE
36964
114.5 0.996
37.4 17.5
37.4 17.5
38230 STANDFRD 115.0
38230 STANDFRD 115.0
38238 HUNTWSTP 115.0
COTTLE B
38208
228.8 0.995
255.4 44.8
30500 BELLOTA 230.0
P mis = -0.0001 MW
Q mis = -0.0011 MVAR
General Electric International, Inc. PSLF Program Wed Mar 12 15:39:13 2008 2013sumpk_q254_pre-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Pre-Project Case
PATH15= 1408 MW(S-N) PATH26= 3950 MW(N-S) PDCI= 2500 MW(N-S) COI= 4746 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Pre-Project FY
MW/MVAR
Rating = 1

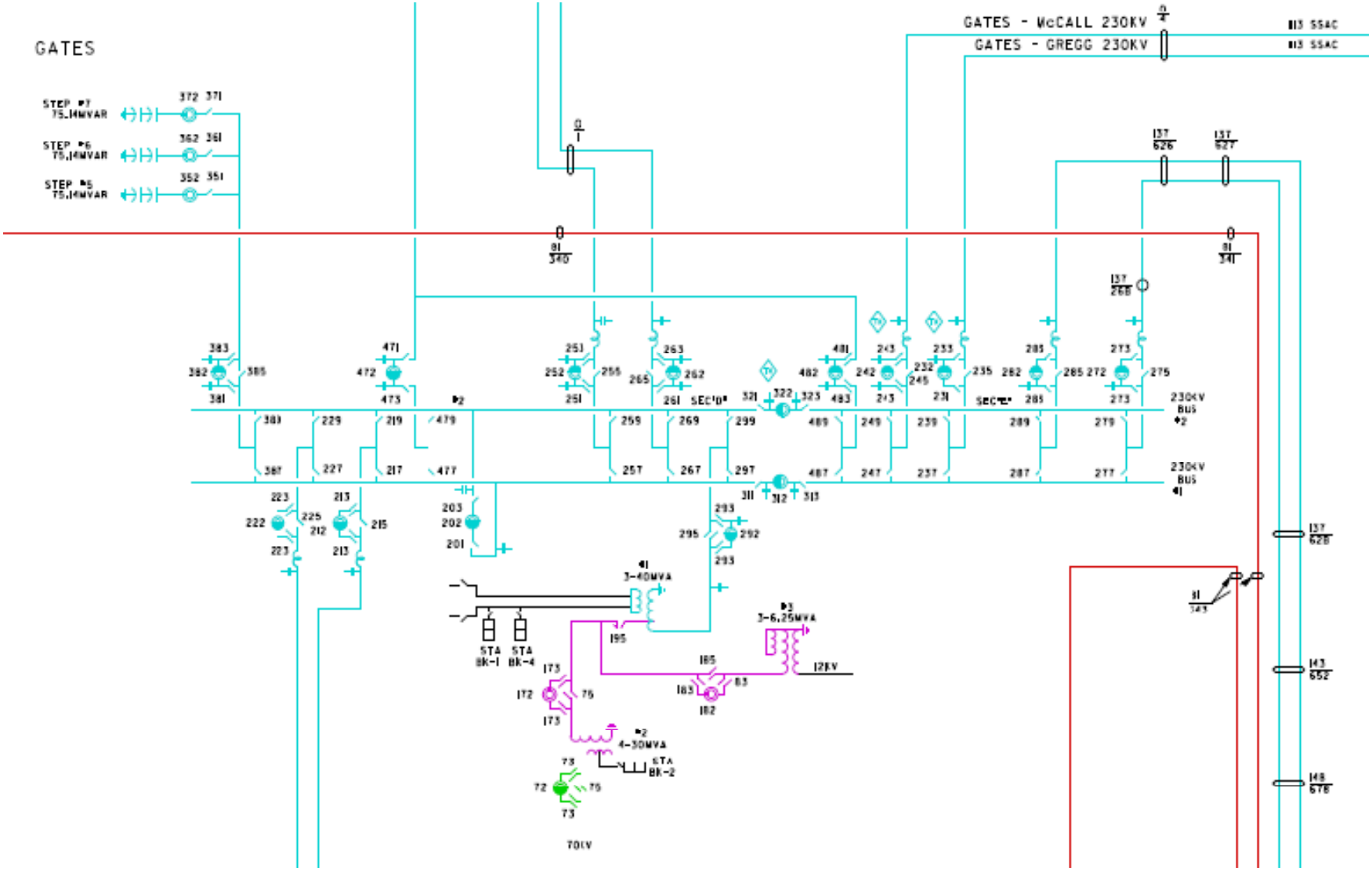

General Electric International, Inc. PSLF Program Wed Mar 12 15:41:06 2008 2013sumpk_q254_pst-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Post-Project Case
PATH15= 1962 MW(S-N) PATH26= 3977 MW(N-S) PDCI= 2500 MW(N-S) COI= 4772 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Post-Project FY
MW/MVAR
Rating = 1
p mis = -0.000
q mis = -0.000
Q254 230.0
30902
230.9
1.004
26.644
598.6
59.7
160.2
15.6
278.5
28.5
1.000
GATES
30900
229.3
0.997
121.5
39.6
91.7
13.7
134.6
8.1
30.7
64.1
296.8
69.7
339.6
72.1
85.3
9.0
18.8
8.2
1051.2
128.6
PANOCHE 230.0
30790
HENTAP1 230.0
30879
HENTAP2 230.0
30880
GATES 1M 230.0
30901
TEMPLETN 230.0
30905
MORROBAY 230.0
30915
ARCO 230.0
30935
MIDWAY 230.0
30970
GATES11M 13.8
34607
Q254CTG1
34688
Q254CTG2
34689
Q254STG1
34690
17.82
0.990


-2.158
227.9
0.991
225.0
0.978
15.1
2.4
225.7
0.981
34.6
90.6
BRIGHTON
30348
232.7
1.012
39.1
67.8
LOCKFORD
30482
228.7
0.994
17.2
15.5
ELECTRA
30487
228.9
0.995
5.6
67.8
1.000
VLLY SPS
30490
236.0
1.026
53.2
88.3
53.2
88.3
BLLTA 1M
31501
227.3
0.988
7.1
15.1
229.1
0.996
37.3
73.7
COLLIERVL
30503
WEBER
30505
121.0
1.052
11.9
67.3
1.055
P0703
30888
225.7
0.981
19.0
330.5
19.0
330.5
BELLOTA
33562
228.8
0.995
29.4
225.1
RNCHSECO
37016
93.3
371.7
230.0
BELLOTA
30500
COTTLE A
38206
227.2
0.988
COTTLE B
38208
P mis = -0.0002 MW
Q mis = -0.0011 MVAR
General Electric International, Inc. PSLF Program Wed Mar 12 15:41:39 2008 2013sumpk_q254_pst-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Post-Project Case
PATH15= 1962 MW(S-N) PATH26= 3977 MW(N-S) PDCI= 2500 MW(N-S) COI= 4772 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Post-Project FY
MW/MVAR
Rating = 1


General Electric International, Inc. PSLF Program Wed Mar 12 15:42:06 2008 2013sumpk_q254_pst-iso-mod.sav
PG&E 2007 CASE SERIES: 2013 San Joaquin Valley Summer Peak Post-Project Case
PATH15= 1962 MW(S-N) PATH26= 3977 MW(N-S) PDCI= 2500 MW(N-S) COI= 4772 MW(N-S)
Q254 600 MW at Gates 230 kV IFS - 2013 Summer Peak Post-Project FY
MW/MVAR
Rating = 1
p mis = -0.000
q mis = 0.001
WARNERVL 230.0
30515
227.3
0.988
5.124
WILSON
30800
223.7
0.973
STOREY 2 230.0
30795
STOREY 1 230.0
30796
WILSON A 115.0
34134
WILSON B 115.0
34136
MELONES 230.0
37563
KIRKWD 1 13.8
36980
KIRKWD 2 13.8
36982
KIRKWD 3 13.8
36984
HOLM 1 13.8
36986
HOLM 2 13.8
36988
INTAKE
36950
234.4
1.019
STANDFRD 115.0
38230
HUNTWSTP 115.0
38238
WRNRVLLE
36964
113.5
0.987
COTTLE B
38208
227.2
0.988
BELLOTA 230.0
30500

ATTACHMENT T.2

ONE-LINE DIAGRAM FOR GATES SUBSTATION


GATES
GATES - McCALL 230KV
GATES - GREGG 230KV
STEP #7 75.14MVAR
STEP #6 75.14MVAR
STEP #5 75.14MVAR
SECTION
230KV BUS #2
230KV BUS #1
3-40MVA
3-6.25MVA
4-30MVA
STA BK-1
STA BK-4
STA BK-2
12KV
70KV

ATTACHMENT T.3

SYSTEM IMPACT STUDY AGREEMENT

110594

MACQUARIE HOLDINGS (USA), INC.
125 West 55th St.
New York, NY 10019

Our Reference	Date
Accounts Payable	19.Mar.2008

California ISO

151 Blue Ravine Rd.
Folsom, CA 95630

Invoice Date	Invoice Number	Paid Amount
14.Mar.2008	03122008	50,000.00

PRODUCT FLV500 MCBEE To Reorder: 1-800-662-2331 or www.mcbeeinc.com

Paid on behalf of Macquarie Cook Energy LLC

Amount
$ 50,000.00***

MACQUARIE HOLDINGS (USA) INC.
125 West 55th St.
New York, NY 10019

The BANK of NEW YORK One Wall Street New York, NY 10286
1-1-210

Paid on behalf of Macquarie Cook Energy LLC
The sum of

*** FIFTY THOUSAND DOLLARS ONLY ***

Our Reference	Date
Accounts Payable	19.Mar.2008

$ ***50,000.00***

Details on back.

Pay to the Order of

CALIFORNIA ISO

151 Blue Ravine Rd.
Folsom, CA 95630

[redacted]

INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT

THIS AGREEMENT is made and entered into this 26 day of March, 20 08 by and between Avenal Power Center, LLC, a limited liability company organized and existing under the laws of the State of Delaware, ("Interconnection Customer,") and the California Independent System Operator Corporation, a California nonprofit public benefit corporation existing under the laws of the State of California, ("ISO"). The Interconnection Customer and the ISO each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, the Interconnection Customer is proposing to develop a Large Generating Facility or generating capacity addition to an existing Generating Facility consistent with the Interconnection Request submitted by the Interconnection Customer dated August 20, 2007; and

WHEREAS, the Interconnection Customer desires to interconnect the Large Generating Facility with the ISO Controlled Grid; and

WHEREAS, the ISO has completed an Interconnection Feasibility Study (the "Feasibility Study") and provided the results of said study to the Interconnection Customer[1]; and

WHEREAS, the Interconnection Customer has requested the ISO to conduct or cause to be performed an Interconnection System Impact Study to assess the impact of interconnecting the Large Generating Facility;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

1.0 When used in this Agreement, with initial capitalization, the terms specified shall have the meanings indicated in the ISO's FERC-approved Standard Large Generation Interconnection Procedures ("LGIP") or the Master Definitions Supplement, Appendix A to the ISO Tariff, as applicable.

2.0 The Interconnection Customer elects and the ISO shall conduct or cause to be performed an Interconnection System Impact Study consistent with the LGIP in accordance with the ISO Tariff.

[1] This recital to be omitted if the Interconnection Customer has elected to forego the Interconnection Feasibility Study.

3.0 The scope of the Interconnection System Impact Study shall be subject to the assumptions set forth in Attachment A to this Agreement.

4.0 The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study and the technical information provided by the Interconnection Customer in the Interconnection Request, subject to any modifications in accordance with Section 4.4 of the LGIP. The ISO reserves the right to request additional technical information from the Interconnection Customer as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection System Impact Study. If the Interconnection Customer modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the Interconnection System Impact Study may be extended.

5.0 The Interconnection System Impact Study report shall provide the following information:

- identification of any circuit breaker short circuit capability limits exceeded on the Participating TO's electric system or the ISO Controlled Grid as a result of the interconnection;

- identification of any thermal overload or voltage limit violations on the Participating TO's electric system or the ISO Controlled Grid resulting from the interconnection;

- identification of any instability or inadequately damped response to system disturbances on the Participating TO's electric system or the ISO Controlled Grid resulting from the interconnection;

- a description and non-binding, good faith estimate of cost and cost responsibility for and time for construction of facilities on the Participating TO's electric system required to interconnect the Large Generating Facility to the ISO Controlled Grid and to address the identified short circuit, instability, and power flow issues on the ISO Controlled Grid; and

- a Deliverability Assessment on the ISO Controlled Grid pursuant to Section 3.3 of the LGIP; and

- assessment of the potential magnitude of financial impacts, if any, on Local Furnishing Bonds and a proposed resolution.

6.0 The Interconnection Customer shall provide a deposit of $50,000 for the performance of the Interconnection System Impact Study. The good faith estimate for the time of completion of the Interconnection System Impact

Study is August 25, 2008 (30 days for IC execution, 120 days for study completion).

Following the issuance of the Interconnection System Impact Study, the ISO shall charge and the Interconnection Customer shall pay the actual costs of the Interconnection System Impact Study, inclusive of any re-studies and amendments to the Interconnection System Impact Study, pursuant to Section 9 of this Agreement.

Any difference between the deposit made toward the Interconnection System Impact Study, amendments and re-studies to the Interconnection System Impact Study, and the actual cost of the study shall be paid by or refunded to the Interconnection Customer, as appropriate in accordance with Section 13.3 of the LGIP.

7.0 Pursuant to Section 3.7 of the LGIP, the ISO will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems. The ISO may provide a copy of the Interconnection System Impact Study results to an Affected System Operator and the Western Electricity Coordinating Council. Requests for review and input from Affected System Operators or the Western Electricity Coordinating Council may arrive at any time prior to interconnection, and a revision of the Interconnection System Impact Study or re-study may be required in such event.

8.0 Substantial portions of technical data and assumptions used to perform the Interconnection System Impact Study, such as system conditions, existing and planned generation, and unit modeling, may change after the ISO provides the Interconnection System Impact Study results to the Interconnection Customer. Study results will reflect available data at the time the ISO provides the Interconnection System Impact Study to the Interconnection Customer. The ISO shall not be responsible for any additional costs, including, without limitation, costs of new or additional facilities, system upgrades, or schedule changes, that may be incurred by the Interconnection Customer as a result of changes in such data and assumptions.

9.0 In the event that a re-study or amendment of the Interconnection System Impact Study is required, the ISO shall provide notification of the need for such re-study or amendment, and the Interconnection Customer shall provide direction as to whether to proceed with the re-study or amendment and any associated deposit payment pursuant to Section 7.6 or Section 12.2.4 of the LGIP, as applicable.

10.0 The ISO shall maintain records and accounts of all costs incurred in performing the Interconnection System Impact Study, inclusive of any re-

studies or amendments thereto, in sufficient detail to allow verification of all costs incurred, including associated overheads. The Interconnection Customer shall have the right, upon reasonable notice, within a reasonable time at the ISO's offices and at its own expense, to audit the ISO's records as necessary and as appropriate in order to verify costs incurred by the ISO. Any audit requested by the Interconnection Customer shall be completed, and written notice of any audit dispute provided to the ISO representative, within one hundred eighty (180) Calendar Days following receipt by the Interconnection Customer of the ISO's notification of the final costs of the Interconnection System Impact Study, inclusive of any re-study or amendment thereto.

11.0 In accordance with Section 3.8 of the LGIP, the Interconnection Customer may withdraw its Interconnection Request at any time by written notice to the ISO. Upon receipt of such notice, this Agreement shall terminate.

12.0 Pursuant to Section 7.2 of the LGIP, this Agreement shall become effective upon the date the fully executed Agreement and deposit specified in Section 6 of this Agreement are received by the ISO. If ISO does not receive the fully executed Agreement and payment pursuant to Section 7.2 of the LGIP, then the Interconnection Request will be deemed withdrawn upon the Interconnection Customer's receipt of written notice by the ISO pursuant to Section 3.8 of the LGIP.

13.0 Miscellaneous.

13.1 Dispute Resolution. Any dispute, or assertion of a claim, arising out of or in connection with this Interconnection System Impact Study Agreement, shall be resolved in accordance with Section 13.5 of the LGIP.

13.2 Confidentiality. Confidential Information shall be treated in accordance with Section 13.1 of the LGIP.

13.3 Binding Effect. This Interconnection System Impact Study Agreement and the rights and obligations hereof, shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.

13.4 Conflicts. In the event of a conflict between the body of this Interconnection System Impact Study Agreement and any attachment, appendices or exhibits hereto, the terms and provisions of the body of this Interconnection System Impact Study Agreement shall prevail and be deemed the final intent of the Parties.

13.5 Rules of Interpretation. This Interconnection System Impact Study Agreement, unless a clear contrary intention appears, shall be construed and interpreted as follows: (1) the singular number includes the plural

number and vice versa; (2) reference to any person includes such person's successors and assigns but, in the case of a Party, only if such successors and assigns are permitted by this Interconnection System Impact Study Agreement, and reference to a person in a particular capacity excludes such person in any other capacity or individually; (3) reference to any agreement (including this Interconnection System Impact Study Agreement), document, instrument or tariff means such agreement, document, instrument, or tariff as amended or modified and in effect from time to time in accordance with the terms thereof and, if applicable, the terms hereof; (4) reference to any applicable laws and regulations means such applicable laws and regulations as amended, modified, codified, or reenacted, in whole or in part, and in effect from time to time, including, if applicable, rules and regulations promulgated thereunder; (5) unless expressly stated otherwise, reference to any Article, Section or Appendix means such Article or Section of this Interconnection System Impact Study Agreement or such Appendix to this Interconnection System Impact Study Agreement, or such Section to the LGIP or such Appendix to the LGIP, as the case may be; (6) "hereunder", "hereof", "herein", "hereto" and words of similar import shall be deemed references to this Interconnection System Impact Study Agreement as a whole and not to any particular Article, Section, or other provision hereof or thereof; (7) "including" (and with correlative meaning "include") means including without limiting the generality of any description preceding such term; and (8) relative to the determination of any period of time, "from" means "from and including", "to" means "to but excluding" and "through" means "through and including".

13.6 Entire Agreement. This Interconnection System Impact Study Agreement, including all Appendices and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Interconnection System Impact Study Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, any Party's compliance with its obligations under this Interconnection System Impact Study Agreement.

13.7 No Third Party Beneficiaries. This Interconnection System Impact Study Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

13.8 Waiver. The failure of a Party to this Interconnection System Impact Study Agreement to insist, on any occasion, upon strict performance of any provision of this Interconnection System Impact Study Agreement will not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party.

Any waiver at any time by either Party of its rights with respect to this Interconnection System Impact Study Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, duty of this Interconnection System Impact Study Agreement. Termination or default of this Interconnection System Impact Study Agreement for any reason by the Interconnection Customer shall not constitute a waiver of the Interconnection Customer's legal rights to obtain an interconnection from the Participating TO or ISO. Any waiver of this Interconnection System Impact Study Agreement shall, if requested, be provided in writing.

Any waivers at any time by any Party of its rights with respect to any default under this Interconnection System Impact Study Agreement, or with respect to any other matter arising in connection with this Interconnection System Impact Study Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Interconnection System Impact Study Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Interconnection System Impact Study Agreement shall not constitute or be deemed a waiver of such right.

13.9 Headings. The descriptive headings of the various Articles and Sections of this Interconnection System Impact Study Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Interconnection System Impact Study Agreement.

13.10 Multiple Counterparts. This Interconnection System Impact Study Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

13.11 Amendment. The Parties may by mutual agreement amend this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties.

13.12 Modification by the Parties. The Parties may by mutual agreement amend the Appendices to this Interconnection System Impact Study Agreement by a written instrument duly executed by both of the Parties. Such amendment shall become effective and a part of this Interconnection

System Impact Study Agreement upon satisfaction of all applicable laws and regulations.

13.13 Reservation of Rights. The ISO shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Interconnection System Impact Study Agreement pursuant to section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Interconnection System Impact Study Agreement shall limit the rights of the Parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.

13.14 No Partnership. This Interconnection System Impact Study Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, another Party.

13.15 Assignment. This Interconnection System Impact Study Agreement may be assigned by a Party only with the written consent of the other Party; provided that a Party may assign this Interconnection System Impact Study Agreement without the consent of the other Party to any Affiliate of the assigning Party with an equal or greater credit rating and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection System Impact Study Agreement; and provided further that the Interconnection Customer shall have the right to assign this Interconnection System Impact Study Agreement, without the consent of the other Party, for collateral security purposes to aid in providing financing for the Large Generating Unit, provided that the Interconnection Customer will require any secured party, trustee or mortgagee to notify the other Party of any such assignment. Any financing arrangement entered into by the Interconnection Customer pursuant to this Article will provide that prior to or upon the exercise of the secured party's, trustee's or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee or mortgagee will notify the other Party of the date and particulars of any such exercise of

assignment right(s). Any attempted assignment that violates this Article is void and ineffective. Any assignment under this Interconnection System Impact Study Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned or delayed.

IN WITNESS THEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

California Independent System Operator Corporation

By: _____

Title: ALI ASRAF CHOWDHURY, DIRECTOR REGIONAL TRANSMISSION SOUTH

Date: 3/25/08

Avenal Power Center, LLC

By: _____

Title: Vice President

Date: 3/26/08

Joseph Forbes
Senior Lawyer

Attachment A

Interconnection System Impact Study Agreement

ASSUMPTIONS USED IN CONDUCTING THE INTERCONNECTION SYSTEM IMPACT STUDY

The Interconnection System Impact Study will be based upon the results of the Interconnection Feasibility Study, subject to any modifications in accordance with Section 4.4 of the LGIP, and the following assumptions:

Designation of Point of Interconnection and configuration to be studied:

- **Gates Substation 230kV Bus**

Designation of alternative Point(s) of Interconnection and configuration:

- **Loop Gates–Midway 230 kV Line**

Attachment B

Interconnection System Impact Study Agreement

INTERCONNECTION SYSTEM IMPACT STUDY PLAN

Interconnection System Impact Study Plan

Generation Interconnection

Avenal Power Center, LLC

Avenal Energy Project

California ISO
Your Link to Power

March 25, 2008

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Attachment 1 - Generation Projects

1. Introduction

Avenal Power Center, LLC, an Interconnection Customer (IC), has submitted a completed Interconnection Request (IR) to the California Independent System Operator Corporation (CAISO) for their proposed Avenal Energy Project (Project). The Project is a combined cycle generation project. The maximum net output to the CAISO Controlled Grid will be 600 MW. The proposed Commercial Operation Date of the Project is June 1, 2012. The primary Point of Interconnection (POI) will be the 230 kV bus at Pacific Gas and Electric Company's (PG&E) Gates Substation in Fresno County, California. The alternative POI will be the Gates – Midway 230 kV Line via looped connection.

The CAISO and PG&E have performed an Interconnection Feasibility Study (IFS) per the CAISO IFS Study Plan and issued an IFS Report on March 13, 2008 and had a results meeting with the IC on March 17, 2008. The IFS report indicated that the proposed Project is technically feasible.

In accordance with Federal Energy Regulatory Commission's (FERC) Large Generation Interconnection Procedures (LGIP), the IC, the CAISO, and PG&E have determined to perform an Interconnection System Impact Study (ISIS). The ISIS will:

- Identify transmission system impacts caused solely by the addition of the Project
- Identify system reinforcements necessary to mitigate the adverse impacts of the Project, if any, under various system conditions
- Identify the level of deliverability of the Project by means of a Deliverability Assessment, conducted by CAISO per Section 3.3.3 of the LGIP

This ISIS Study Plan will form the basis for the ISIS Agreement (ISISA) by defining the scope, content, assumptions, and terms of reference of the ISISA.

2. Study Fee

The estimated study fee to perform this ISIS is $60,000. The final cost to complete the ISIS will be based on actual cost. According to the LGIP, a $50,000 deposit will be needed when the IC returns the signed ISISA to CAISO.

CAISO will provide the IC a record of actual costs for performing the ISIS. CAISO will invoice the IC the remaining balance if the actual cost is higher than the collected deposit. If the actual cost is less than the collected deposit, CAISO will refund the balance to the IC.

3. Schedule

Table 3-1 shows the tentative milestones/schedules associated with the ISIS.

Table 3-1: Study Schedule

Task	Milestone Description	Target Date
1	CAISO tenders an ISISA to the IC	March 25, 2008
2	The IC returns the signed ISISA and study deposit of $50,000 to CAISO	+ 30 CD from receipt
3	CAISO issues final ISIS report to the IC	+ 120 CD
4	ISIS Results meeting	+ 10 BD

Per the LGIP, the IC must execute and return the attached ISISA with the deposit of $50,000 within 30 calendar days (CD) from receipt of ISISA. If the IC fails to return an executed ISISA and the deposit within 30 CD, the IR will be deemed withdrawn and will be processed pursuant to Section 3.8 of the LGIP.

4. Project and Interconnection Information

Table 5-1 provides general information about the Project.

Table 5-1: Project General Information

Project Location	Kings County, California
PG&E Planning Area	Fresno Division
Number and Type of Generators	2x1 Combined Cycle Generators
Maximum Generator Output	635.6 MW
Generator Auxiliary Load	35.6 MW
Maximum Net Output to Grid	600 MW
Power Factor	0.85 Lag to 0.95 Lead
Step-up Transformer	Two CTG GSU 238/18 kV, each 220 MVA, One STG GSU 238/18 kV, 390 MVA
Description Of Interconnection Configuration	A Single Tie Line to 230 kV Bus at Gates Substation
Connection Voltage	230 kV
Description Of Alternative Interconnection Configuration	Loop into Gates – Midway 230 kV Line
Alternative Connection Voltage	230 kV

Figure 5-1 provides the map for the Project and the transmission facilities in the vicinity.

A conceptual one-line diagram of the proposed project is shown in Figure 5-2

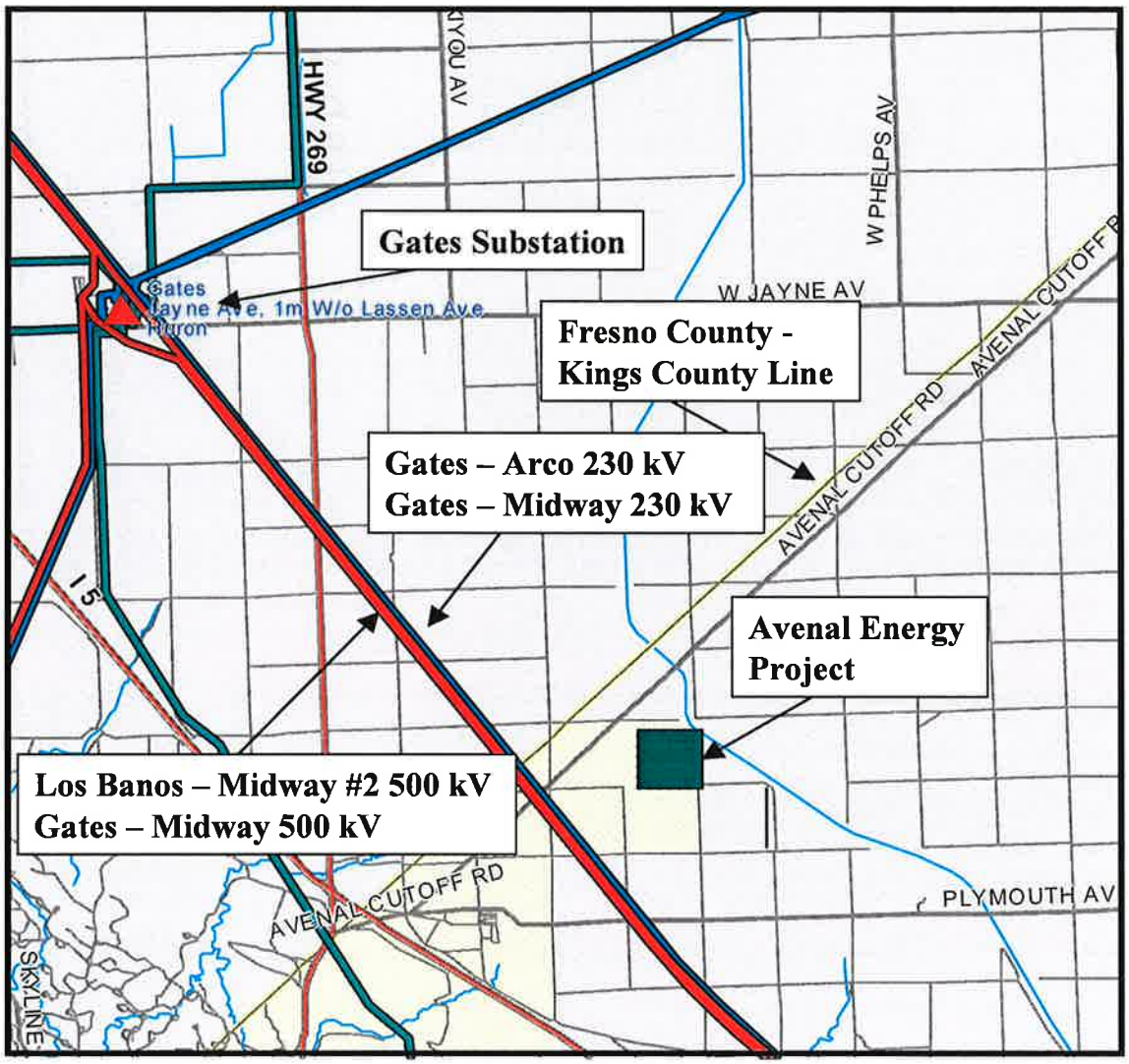


Figure 5-1: Project Location Map

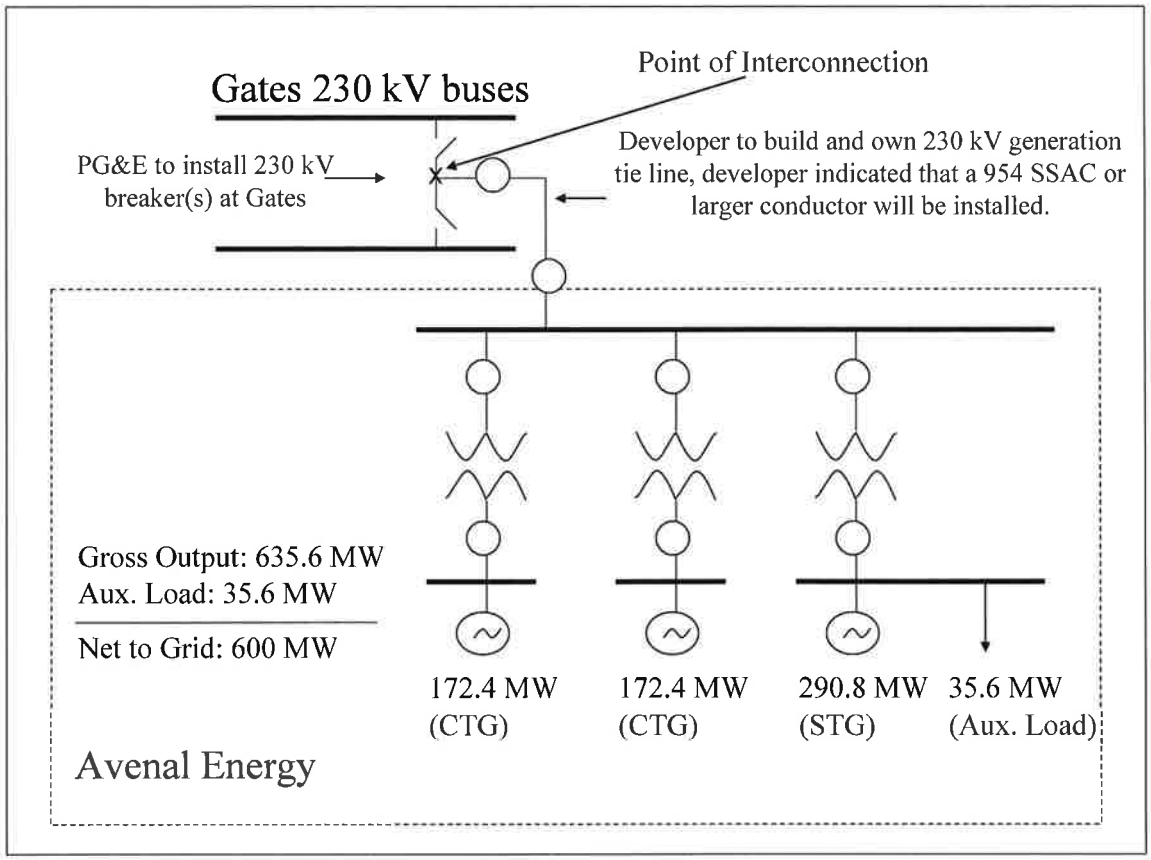


Figure 5-2: Conceptual One-Line Diagram

5. Study Assumptions

Under the direction of the CAISO, PG&E will conduct the ISIS using the following assumptions:

1) The maximum net output of the Project to the CAISO Controlled Grid is 600 MW.

2) The expected Commercial Operation Date of the Project is June 1, 2012.

3) The project has three (3) three phase step-up transformers. Two for the combustion turbine generators are rated at 18/238 kV 220 MVA with a 9% impedance on 132 MVA base, and the third for the steam turbine generator is rated at 18/238 kV 390 MVA with 9% impedance on 234 MVA base.

4) There will be one 4.5 mile generator tie line with two bundled 954 Kcmil ACSR conductors.

5) The IC will engineer, procure, construct, own, and maintain its project facility.

6) The IC will engineer, procure, construct, own, and maintain the generator tie line.

6. Power Flow Study Base Cases

Three power flow base cases will be used to evaluate the transmission system impacts of the Project. While it is impossible to study all combinations of system load and generation levels during all seasons and at all times of the day, the base case represents extreme loading and generation conditions for the study area.

The CAISO and PG&E cannot guarantee that the Project can operate at maximum rated output 24 hours a day, year round, without system impacts, nor can the CAISO and PG&E guarantee that the Project will not cause system impacts during the times and seasons not studied in this ISIS.

- **2012 Summer Peak Base Case**

  Power flow analysis will be performed using PG&E's 2012 Summer Peak Full-Loop Base Case (in General Electric Power Flow format). This base case was developed from PG&E's 2007 base case series and has a 1-in-10 year extreme weather load level for the Greater Fresno Area.

- **2012 Spring Peak Base Case**

  Power flow analysis will also be performed using the 2012 Spring Peak Base Case in order to evaluate the potential congestion on transmission facilities under reduced load and increased hydro generation levels during a typical Spring season. Typical Spring season load will be applied in this Spring Peak Base Case. Hydro generation will be modeled at very high levels as is typical in the spring season.

- **2012 Summer Off-Peak Base Case**

  Power flow analysis will also be performed using the 2012 Summer Off-Peak Base Case in order to evaluate potential congestion on transmission facilities during the off-peak system conditions. The Summer Off-Peak load will be modeled at 50% of summer peak load level in the Greater Fresno Area. The Path 15 flows will be around 5,000 MW in the south-to-north direction. Two units at Helms PGP (620 MW total) will be assumed in pumping mode.

The base cases will model all approved PG&E transmission reliability projects that will be operational by summer 2012. The base cases will also model all proposed higher queued generation projects that will be operational by COD of the project (summer 2012). However, some generation projects that are electrically far from the proposed project will be either turned off or modeled with reduced generation to balance the loads and resources in the power flow model. The major generation projects included are shown in Attachment 1.

7. Study Scope

The ISIS will determine the impact of the Project on the CAISO Controlled Grid. The specific studies conducted are outlined below:

7.1 Steady State Power Flow Analysis

Power flow analysis will be performed using the base cases described in Section 6. The base cases will be used to simulate the impact of the new facility during normal operating conditions as well as during single (CAISO Category "B") and selected multiple (CAISO Category "C") contingency conditions. The study will cover the transmission facilities within PG&E's Greater Fresno Area.

The single (CAISO Category "B") and selected multiple (CAISO Category "C") contingencies include the following outages:

7.1.1 CAISO Category "B"

- All single generator outages within the study area.
- All single (60 - 230 kV) transmission circuit outages within the study area.
- All single (60 - 230 kV) transformer outages within the study area.
- Overlapping single generator and transmission circuit outages for the transmission lines and generators within the study area.

7.1.2 CAISO Category "C"

- Selected bus (60-230 kV) outages within the study area.
- Selected outages caused by selected breaker failures (excluding bus tie and sectionalizing breakers) at the same above bus section.
- Selected combination of any two-generator/transmission line/transformer outages (except ones included above in Category "B") within the study area
- Selected outages of double circuit tower lines (60-230 kV) within the study area.

7.2 Reactive Power Deficiency Analysis

With the proposed project included in the system model, CAISO Category "B" and "C" contingencies will be analyzed to identify any reactive power deficiency:

- Whether the results show voltage drops of 5% or more from the pre-project levels, or
- Whether the results fail to meet applicable voltage criteria.

A post-transient power flow analysis will be performed, if deemed necessary, after considering the network topology or power transfer paths involved when a significant amount of power transfer occurs.

7.3 Dynamic Stability Analysis

Dynamic stability studies will be conducted using the 2012 Summer Peak Full Loop Base Case, to ensure that the transmission system remains in operating equilibrium through abnormal operating conditions after the Project begins operation.

Disturbance simulations will be performed for a study period of up to 20 seconds to determine whether the Project will create any system instability during the following line and generator outages:

7.3.1 CAISO Category "B"

- Full load rejection of the Project (600 MW).
- A three-phase close-in fault on the Morro Bay - Gates 230 kV line at Gates 230 kV bus with normal clearing time followed by loss of the Morro Bay - Gates 230 kV line.
- A three-phase close-in fault on the Gates - Panoche 230 kV #1 line at Gates 230 kV bus with normal clearing time followed by loss of the Gates - Panoche 230 kV #1 line.
- A three-phase close-in fault on the Gates - Midway 230 kV line at the Gates 230 kV bus with normal clearing time followed by loss of the Gates – Midway 230 kV line.

7.3.2 CAISO Category "C"

- A three-phase fault on Gates Substation 230 kV bus Section 1D with normal clearing time.
- A three-phase fault on the Gates – Panoche 230 kV #1 and #2 double circuit tower lines at Gates 230 kV bus with normal clearing time followed by loss of the Gates – Panoche 230 kV #1 and #2 lines.
- A three-phase fault on the Morro Bay – Gates and Templeton - Gates 230 kV double circuit tower lines at Gates 230 kV bus with normal clearing time followed by loss of the Morro Bay – Gates and Templeton - Gates 230 kV lines.

- A three-phase fault on the Gates – Gregg and Gates - McCall 230 kV double circuit tower lines at Gates 230 kV bus with normal clearing time followed by loss of the Gates – Gregg and Gates - McCall 230 kV lines.

7.4 Deliverability Assessment

A Deliverability Assessment will be performed to determine the Project's ability to deliver its energy to the CAISO Controlled Grid under peak load conditions. The Deliverability Assessment will provide the IC with information as to the level of deliverability without Network Upgrades, and the required Network Upgrades for delivering the full output of the Project. The Deliverability Assessment will provide:

- Deliverability level with no Network Upgrades
- Required Network Upgrades to support 100% deliverability

CAISO will conduct the Deliverability Assessment in accordance with Section 3.3.3 of the LGIP.

7.5 Short Circuit Duty Analysis

Short circuit studies will be performed to determine the maximum fault currents on various transmission buses in the vicinity of the Project. This ISIS will assess the impact of increased fault duty resulting from the added generation. Equipment that may become overstressed as a result of increased fault duty will be identified.

7.6 System Protection Requirements

Preliminary system protection requirements will be provided based on the scope and assumptions outlined in this study plan and technical information provided by the IC.

7.7 Substation Evaluation

The substation evaluation will identify any existing equipment requiring upgrades to mitigate overstress or overload caused by the Project.

7.8 Transmission Line Evaluation

PG&E's transmission line evaluation will identify any existing transmission lines or equipment requiring upgrades to mitigate overload or overstress caused by the Project.

7.9 Land Evaluation

For the ISIS, PG&E's Corporate Real Estate Department will not perform an evaluation to determine if any new land rights are necessary to upgrade PG&E facilities that may be impacted by the Project, such as constructing the new generator tie line and reconductoring of existing PG&E transmission lines, if required.

A land right evaluation will be provided when the Project progresses to the Interconnection Facilities Study (IFAS).

8. Costs and Construction Schedule Estimates

The ISIS will provide a list of required facilities and a non-binding good faith estimate of cost responsibility and a non-binding good faith estimate of time to construct.

9. Environmental Evaluation/ Permitting

PG&E is subject to the jurisdiction of the California Public Utilities Commission (CPUC) and must comply with CPUC General Order 131-D (Order) on the construction, modification, alteration, or addition of all electric transmission facilities (i.e., lines, substations, etc.). This includes facilities to be constructed by others and deeded to PG&E. The Order exempts PG&E from obtaining a formal permit from the CPUC on facilities over 200 kV provided the planned facilities involve the replacement of existing facilities or supporting structures with equivalent facilities or structures, the minor relocation of existing facilities, the conversion of existing facilities to underground or the placing of new or additional conductors, insulators, or their accessories on or replacement of structures already built. These exemptions do not apply under certain circumstances when significant environmental impacts may be caused by the work. If the project does not qualify for an exemption, PG&E will need to seek formal approval from the CPUC (i.e., Certificate of Public Convenience and Necessity) taking as much as 18 months or more since the CPUC may decide to conduct its own environmental evaluation (i.e., Negative Declaration or Environmental Impact Report).

For cases where PG&E can claim a valid exemption, PG&E would file an Advice Letter with the CPUC and publish public notice of the proposed construction of the facilities. The noticing process takes about 90 days if no protests are filed, but should be done as early as possible so that a protest does not delay construction. PG&E has no control over the time it takes the CPUC to respond when issues arise. If the protest is granted, PG&E will then need to apply for a formal permit to construct the project (i.e., Certificate of Public Convenience and Necessity).

Facilities built or modified under this procedure must also be designed to include electric and magnetic field (EMF) mitigation measures pursuant to PG&E "EMF Design Guidelines of New Electrical Facilities: Transmission, Substation and Distribution".

Please see Section III, B.1(f) in General Order 131-D. This document can be found in the CPUC's web page at:

http://www.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/589.htm

9.1 CPUC Section 851

PG&E is subject to the jurisdiction of the California Public Utilities Commission (CPUC) and must comply with Public Utilities Code Section 851, which among other things requires CPUC approval of leases and licenses to use PG&E property. This includes rights-of-way granted to third parties for interconnection facilities. Obtaining CPUC approval for a Section 851 application can take several months, and requires compliance with the California Environmental Quality Act (CEQA). PG&E recommends that Section 851 issues be identified as early as possible so that the necessary application can be prepared and processed.

10. Stand-by Power

The ISIS will not address any requirements for standby power that the Project may require. The IC should contact their PG&E Generation Interconnection Services representative regarding this service.

Note: The IC is urged to contact its PG&E Generation Interconnection Services representative promptly regarding stand-by service in order to ensure its availability for the Project start-up date.

11. Re-Study

This ISIS is performed according to the assumptions shown in the Sections titled "Study Assumptions" and "Power Flow Study Base Cases". If these assumptions are changed, a re-study may be required to re-evaluate the project's impact on the CAISO Controlled Grid. The IC would be responsible for paying for any such re-study. Examples of changes that might prompt such a study are:

- Change in interconnection date.
- Change in Interconnection Queue position.
- Change in project's MW size.
- Change in interconnection plan.
- Withdrawal of a higher queued project from the CAISO queue

ATTACHMENT 1 – GENERATION PROJECTS

PG&E Generation Projects					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
1	Confidential	Russell	92	2007	Yes
Non-PG&E Generation Projects to Be Modeled in Base Case per On-line Year					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
TID	Confidential	Walnut (TID)	250	2007	Yes
SVP	Confidential	SSS (SVP)	320	2008	Yes
PG&E Generation Projects - ISO Generation Interconnection Queue					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
Q0002	Confidential	Contra Costa	590	2009	Yes
Q0006	Confidential	Tesla	1156	2010	Yes
Q0009	Confidential	Morro Bay	1200	2008	Yes
Q0016 (P0302)	Confidential	Cabrillo	120	2008	Yes
Q0022 (P0304)	Confidential	New Birds Landing SW STA	38	2011	Yes
Q0024 (P0401)	Confidential	Birds' Landing Switchyard	150	2008	Yes
Q0028 (P0402)	Confidential	Potrero	145.1	2008	Yes
Q0029 (P0403)	Confidential	Collector Station at Geysers #17 & Fulton Line	201	2009	Yes
Q0030 (P0404)	Confidential	San Francisco Airport	48.7	2008	Yes

PG&E Generation Projects					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
Q0037 (P0409)	Confidential	Tesla	74.9	2010	Yes
Q0038 (P0411)	Confidential	Humboldt Power Plant Substation	146.4	2008	Yes
Q0039 (P0412)	Confidential	Birds' Landing Switchyard	200	2008	Yes
Q0040 (P0413)	Confidential	East Shore	118	2007	Yes
Q0042 (P0418)	Confidential	McCall 115 kV Bus	300	2013	No
Q0045 (P0424)	Confidential	East Shore	361	2010	Yes
Q0052 (P0435)	Confidential	Panoche Substation	401	2009	Yes
Q0054 (P0504)	Confidential	Panoche Substation	120	2009	Yes
Q0057 (P0506)	Confidential	Cottonwood-Vaca Dixon 230 kV lines	715	2010	Yes
Q0060 (P0513)	Confidential	Kern Oil Substation (115 kV)	94	2009	Yes
Q0067 (P0526)	Confidential	Eastshore 230 kV Bus	245	2008	Yes
Q0074 (P0528L)	Confidential	Pit 3-Round Mountain 230 kV	102	2007	Yes
Q0075 (P0529)	Confidential	Le Grand- Chowchilla 115 kV	10.5	2008	Yes
Q0076 (P0530)	Confidential	Merced #1 70 kV	10.5	2008	Yes
Q0081 (P0532L)	Confidential	PG&E Geysers #17 Fulton 230 kV Line	55	2007	Yes
Q0108 (P0609L)	Confidential	Lambie-Contra Costa 230 kV	128	2011	Yes
Q0111 (P0610L)	Confidential	Chevron 70 kV Tap	20	2009	Yes
Q0113 (P0611L)	Confidential	Birds' Landing Switchyard	30	2009	Yes
Q0128 (P0615L)	Confidential	Mc Call 230 kV Bus	565/600	2010	Yes

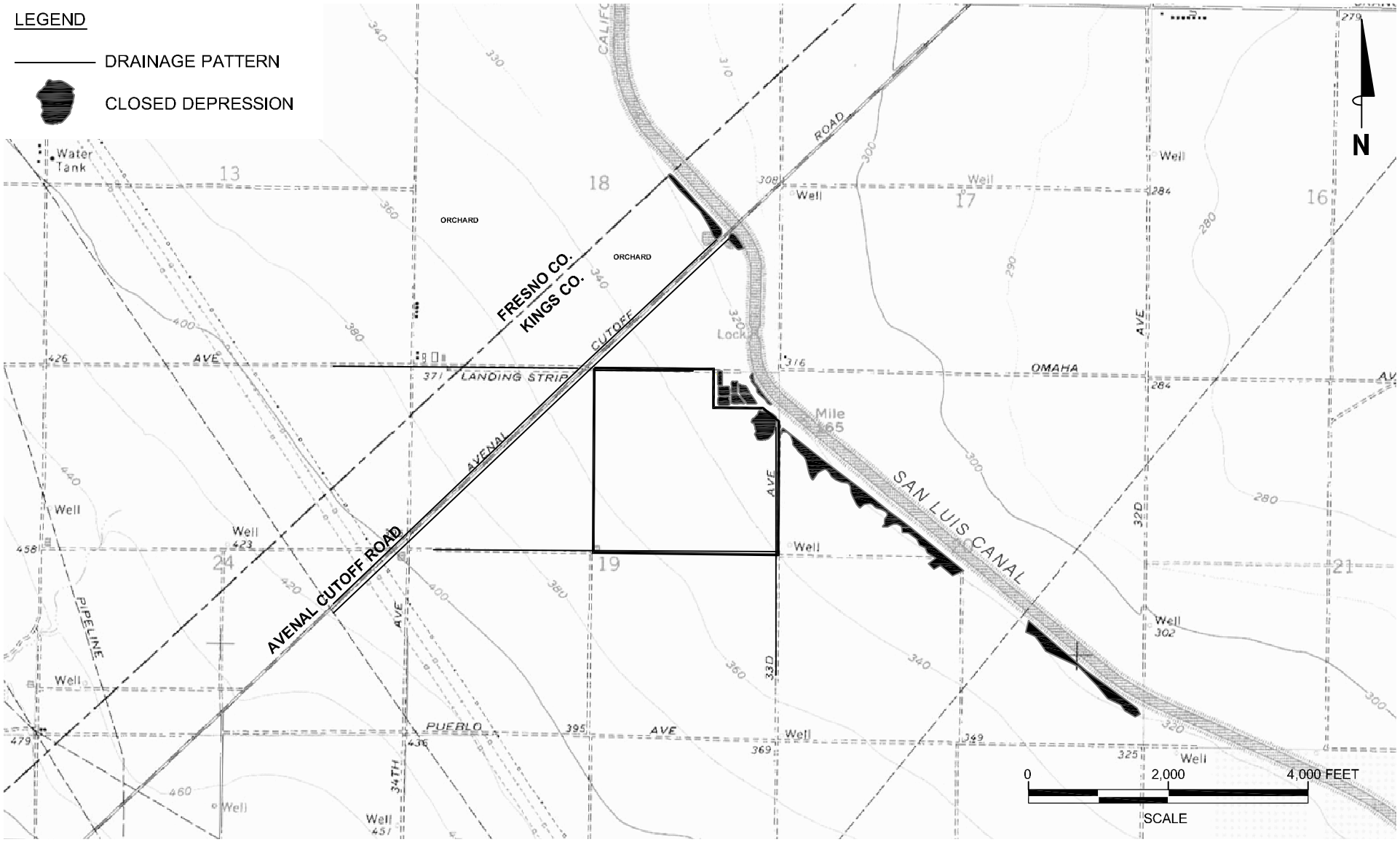
PG&E Generation Projects					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
Q0152 (P0616L)	Confidential	Mesa-Divide #1 & #2 115 kV Lines	105	2009	Yes
Q0155 (P0617L)	Confidential	Oakland C Substation 115 kV Bus	300	2010	Yes
Q0166 (P0701L)	Confidential	Morro Bay – Midway 230 kV Line	210	2010	Yes
Q0171 (P0702L)	Confidential	Vaca – Tesla 500 kV Line	500	2011	Yes
Q0172 (P0703L)	Confidential	Tesla – Bellota 230 kV Line	508	2011	Yes
Q0177 (P0704L)	Confidential	Bahia-Moraga 230 kV Line	100	2011	Yes
Q0184 (P0706)	Confidential	Geysers #3 – Cloverdale 115 kV Line	35	2010	Yes
Q0187 (P0708)	Confidential	Geysers – Fulton 230 kV Line	50	1/1/2011	Yes
Q0194 (P0709)	Confidential	Loop 230kV Lines near Carrizo Plain Sub	190	12/1/2011	Yes
Q0196 (P0710)	Confidential	Border Substation 230 kV Bus	508	6/15/2011	Yes
Q0208	Confidential	Tracy – Herdlyn 69kV Line	2	9/1/2008	Yes
Q0211	Confidential	230 kV Bus at Caribou Substation	201	10/31/2008	Yes
Q0212	Confidential	Rio Dell 60 kV	50	10/30/2010	Yes
Q0222	Confidential	Birs Landing Substation	100.5	12/31/2010	Yes
Q0235	Confidential	Tesla-Tracy #1 230 kV Line	630	6/1/2011	Yes
Q0236	Confidential	Tesla Substation 230 kV Bus	630	6/1/2011	Yes
Q0238	Confidential	Temblor-San Luis Obispo 115 kV Line	45	12/1/2008	Yes
Q0239	Confidential	Morro Bay-Midway 230 kV Line	250	12/1/2010	Yes
Q0242	Confidential	Morro Bay-Midway 230 kV Line	390	9/1/2012	Yes

PG&E Generation Projects					
Project ID #	**Project Name**	**Nearest Facility**	**Capacity (MW)**	**Latest Expected On-Line Date**	**Modeled In Study Cases**
Q0247	Confidential	Borden Substation 230 kv Bus	67	6/15/2011	Yes
Q0248	Confidential	Tesla-Bellota 230 kV Line	67	5/15/2011	Yes
Q0249	Confidential	Moss Landing-Salinas-Soledad 115 kV #1 & #2	200	2/1/2010	Yes
Q0250	Confidential	Redbud-Cortina 115 kV Line	200	8/1/2009	Yes
Q0253	Confidential	Cabrillo Substation	40	12/31/2011	Yes

ATTACHMENT W.1

EXISTING SITE DRAINAGE

MS=1:2000 I:\DUKE\158156-AVENAL\AVENAL-DRAINAGE.dwg Mar 26, 2008 - 12:01pm Rcollins



REFERENCE:

U.S.G.S 7.5 MINUTE TOPOGRAPHIC SERIES MAPS OF LA CIMA, CALIFORNIA, DATED 1978.

TRC

PROJECT: 158156

FACILITY:

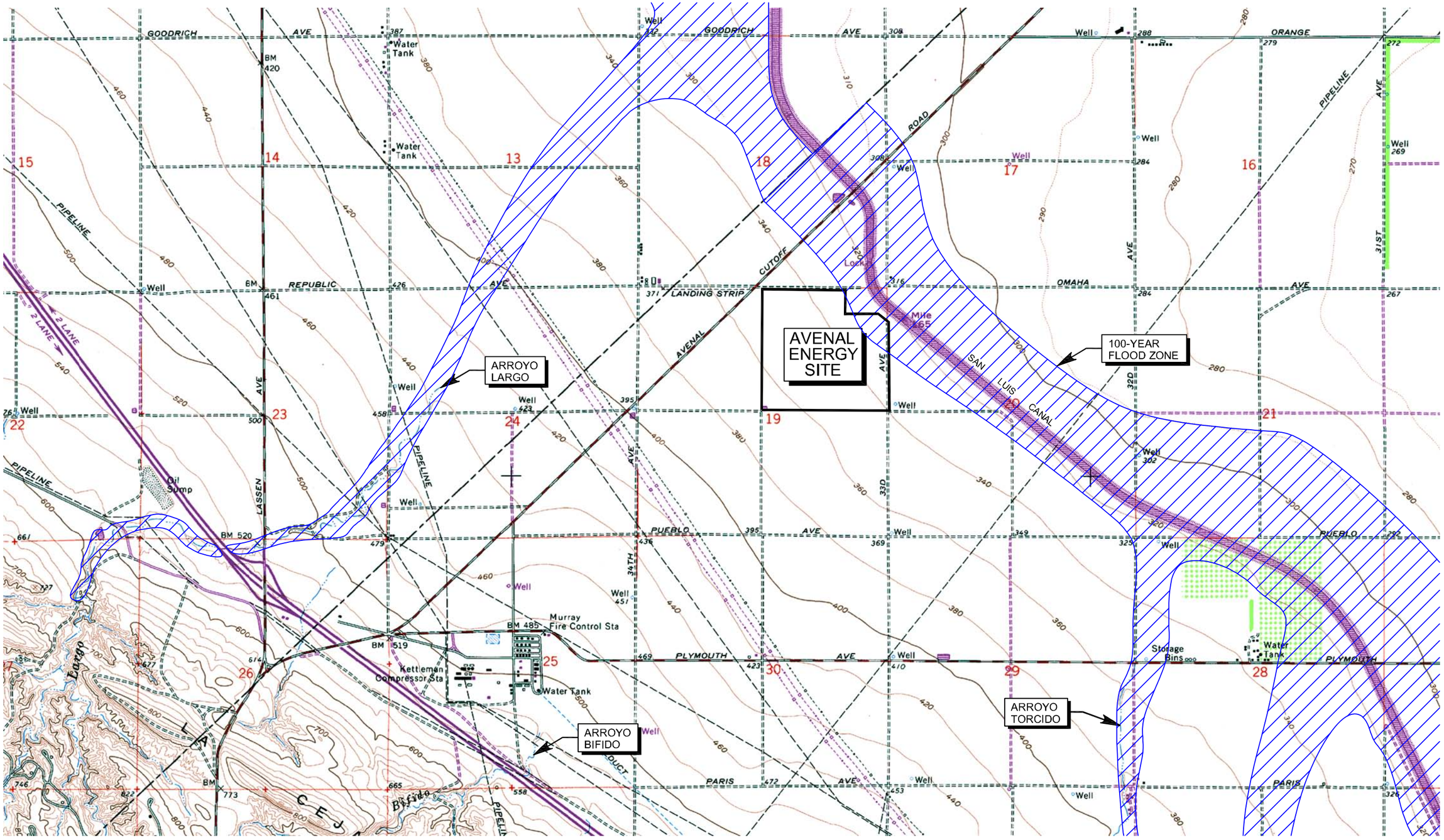
AVENAL POWER CENTER, LLC

EXISTING SITE DRAINAGE

ATTACHMENT W.1

ATTACHMENT W.2

100-YEAR FLOOD ZONE



REFERENCE:

U.S.G.S 7.5 MINUTE TOPOGRAPHIC SERIES MAPS OF LA CIMA, CALIFORNIA, DATED 1978.

0 2,000 4,000 FEET

SCALE

TRC

PROJECT: 158156

FACILITY:

AVENAL POWER CENTER, LLC

100-YEAR FLOOD ZONE

ATTACHMENT W.2

MS=1:1 I:\DUKE\158156-AVENAL\AVENAL-100 YEAR FLOOD.dwg Mar 26, 2008 - 9:55am Rcollins

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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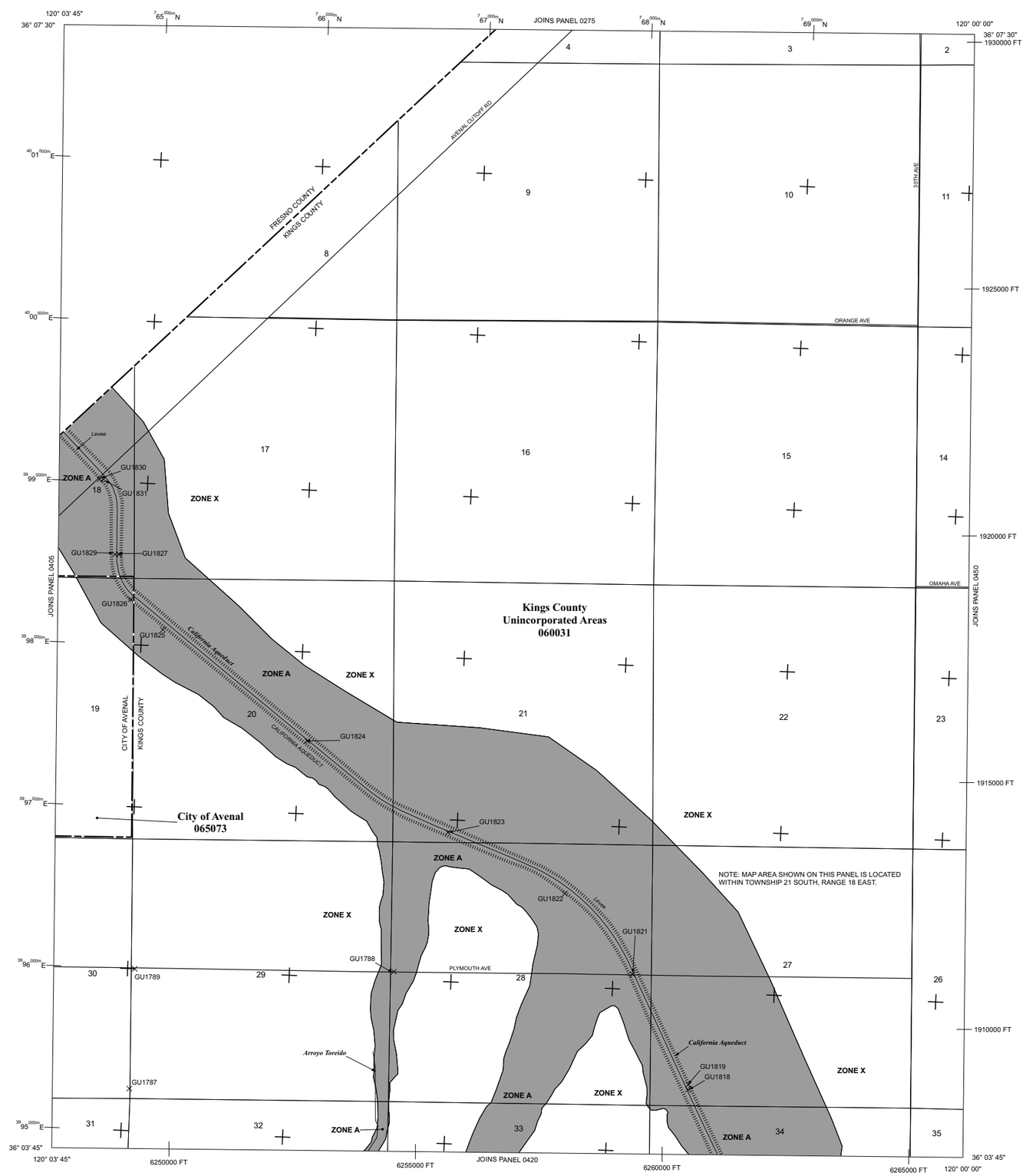

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X / **ZONE D** — Areas determined to be outside the 0.2% annual chance floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

Floodplain boundary
Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A Cross section line
23 - - - - 23 Transect line
97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000mE — 1000-meter Universal Transverse Mercator grid values, zone 10 and 11
600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic Projection
DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0410C

FIRM
FLOOD INSURANCE RATE MAP
KINGS COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 410 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AVENAL, CITY OF	065073	0410	C
KINGS COUNTY	060086	0410	C

PRELIMINARY
NOV 16 2007

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06031C0410C

EFFECTIVE DATE

Federal Emergency Management Agency

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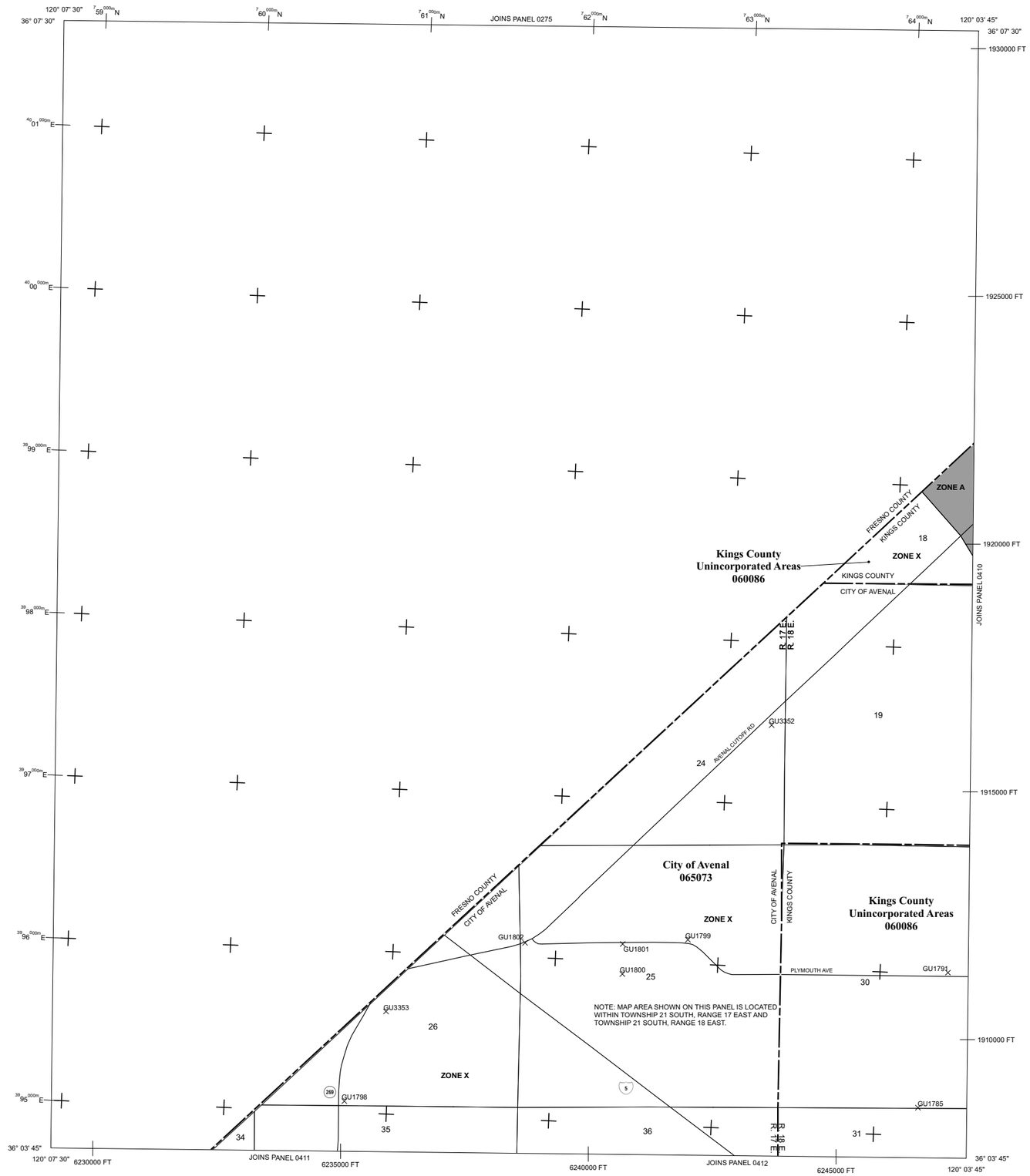

LEGEND

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Floodway boundary
Zone D Boundary
CBRS and OPA Boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - - 23	Transect line
97° 07' 30", 32° 22' 30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4976000mE	1000-meter Universal Transverse Mercator grid values, zone 10 and 11
600000 FT	5000-foot grid ticks: California State Plane coordinate system, zone IV (FIPSZONE 0404), Lambert Conformal Conic Projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
● M1.5	River Mile

MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE FLOOD
INSURANCE RATE MAP PANEL

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

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MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0405C

FIRM

FLOOD INSURANCE RATE MAP

KINGS COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 405 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AVENAL, CITY OF	065073	0405	C
KINGS COUNTY	060086	0405	C

PRELIMINARY
NOV 16 2007

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MAP NUMBER
06031C0405C

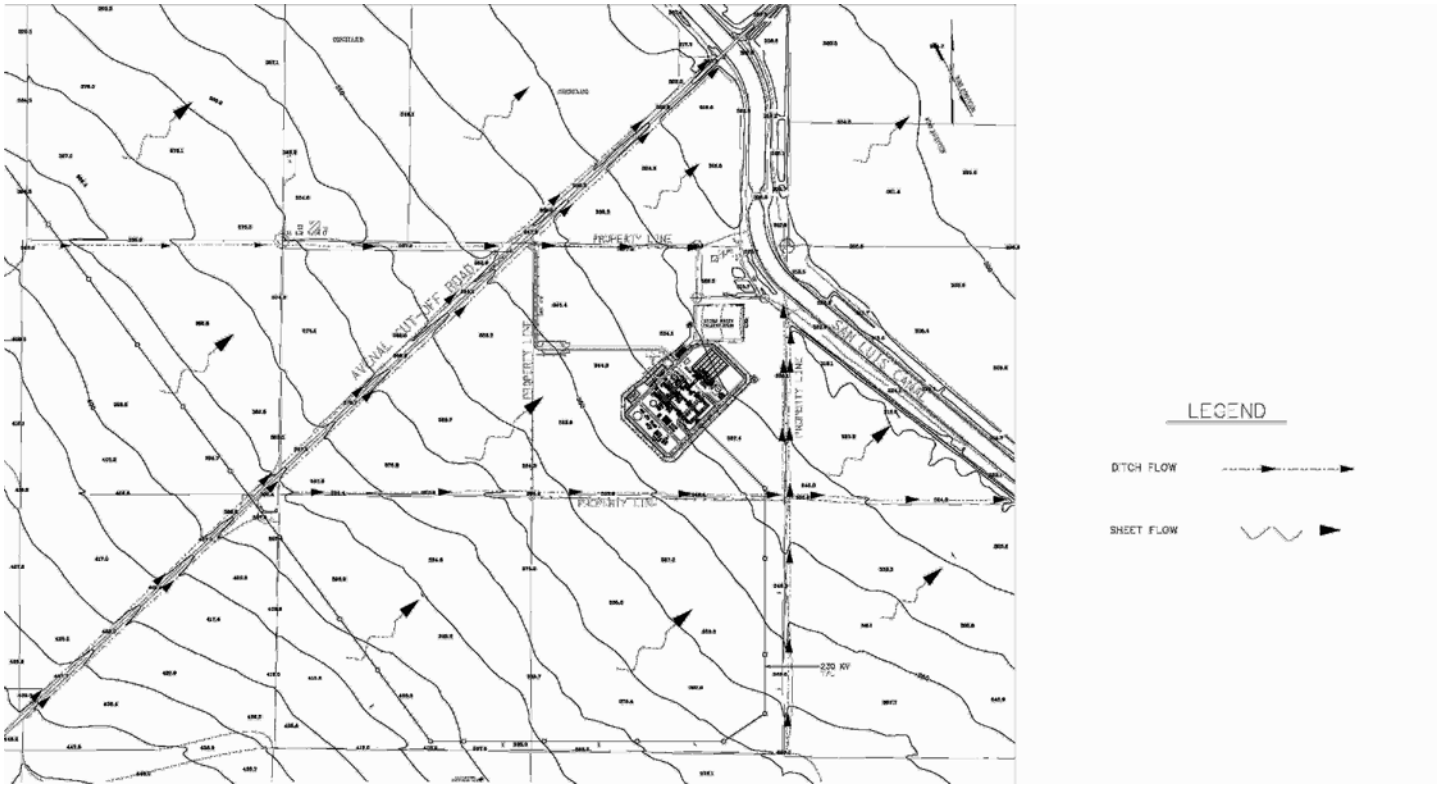
EFFECTIVE DATE

Federal Emergency Management Agency

ATTACHMENT W.3

PRE-CONSTRUCTION RUNOFF AND DRAINAGE PLAN

MS=1:2000 I:□DUKE□158156-AVENAL□AVENAL-RUNOFF & DRAINAGE.dwg Mar 26, 2008 - 9:37am Rcollins



0 2,000 4,000 FEET

SCALE

REFERENCE:

FLUOR, DATED 9/19/07, FIGURE 2.3-10.

TRC

PROJECT: 158156

FACILITY:

AVENAL POWER CENTER, LLC

PRE-CONSTRUCTION RUNOFF AND DRAINAGE PLAN

ATTACHMENT W.3

ATTACHMENT W.4

EXISTING GROUNDWATER WELLS WITHIN ONE HALF MILE

LEGEND

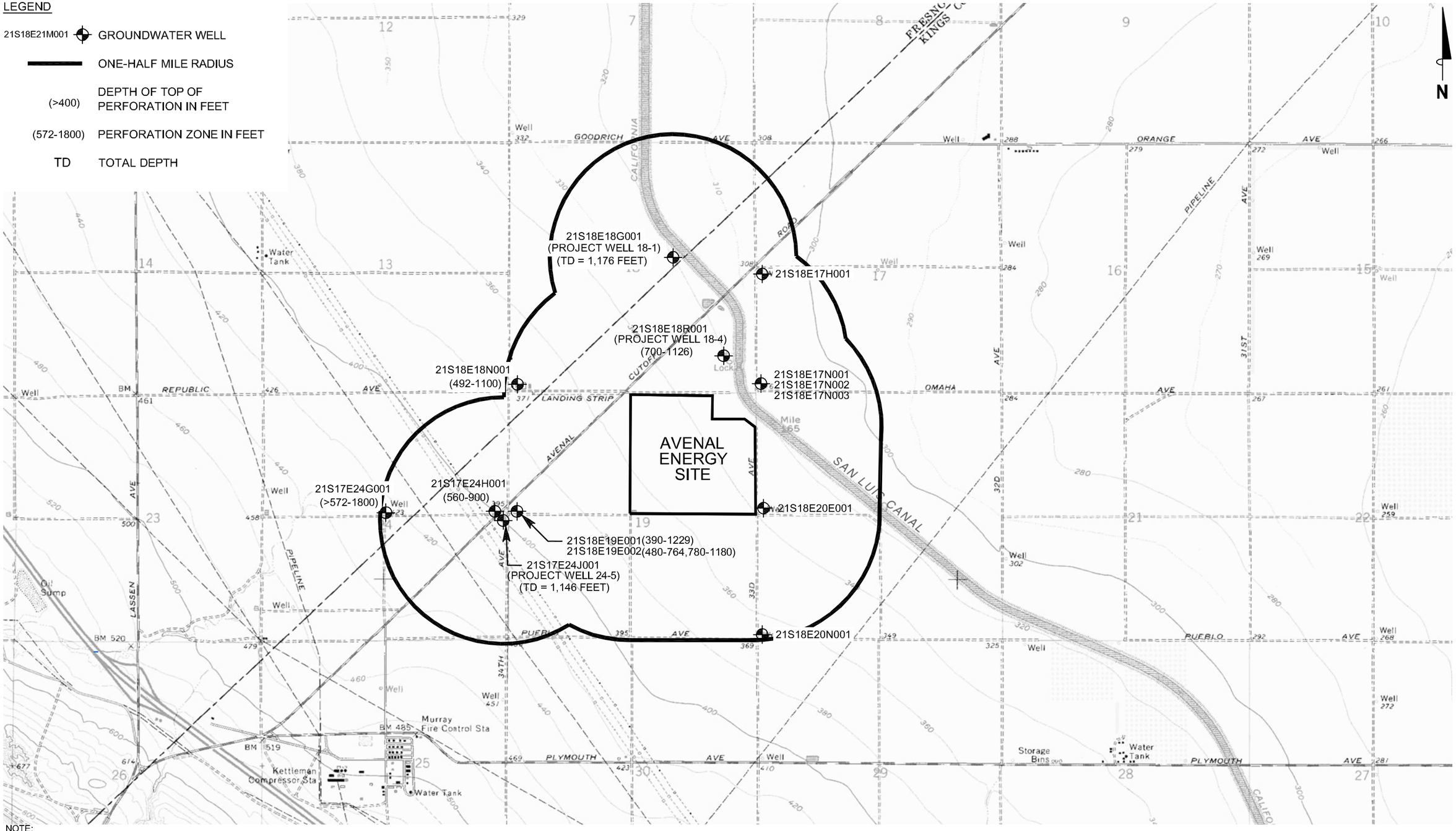
21S18E21M001 GROUNDWATER WELL

ONE-HALF MILE RADIUS

(>400) DEPTH OF TOP OF PERFORATION IN FEET

(572-1800) PERFORATION ZONE IN FEET

TD TOTAL DEPTH



NOTE:

PERFORATED INTERVAL INDICATED IN PARENTHESIS WHERE AVAILABLE. TOTAL DEPTH (TD) INDICATED IN PARENTHESIS WHERE AVAILABLE AND SCREENED INTERVAL DATA IS NOT AVAILABLE.

REFERENCE:

U.S.G.S 7.5 MINUTE TOPOGRAPHIC SERIES MAPS OF LA CIMA, CALIFORNIA, DATED 1978.

0 2,000 4,000 FEET

SCALE

TRC

PROJECT: 158156

FACILITY:

AVENAL POWER CENTER, LLC

EXISTING GROUNDWATER WELLS WITHIN ONE HALF MILE

ATTACHMENT W.4

MS=1:1 I:\DUKE\158156-AVENAL\AVENAL-GW WELLS.dwg Mar 25, 2008 - 4:02pm Rcollins

ATTACHMENT W.5

LAND OPTION AND WATER AGREEMENT

OPTION AGREEMENT

THIS OPTION AGREEMENT is made and entered into as of this 1st of May, 2001 (the "Effective Date"), by and between Mike J. Kochergen and Tanya A. Kochergen, husband and wife, as joint tenants (collectively referred to herein as "Seller") and Duke Energy Avenal, LLC (referred to herein as "Purchaser").

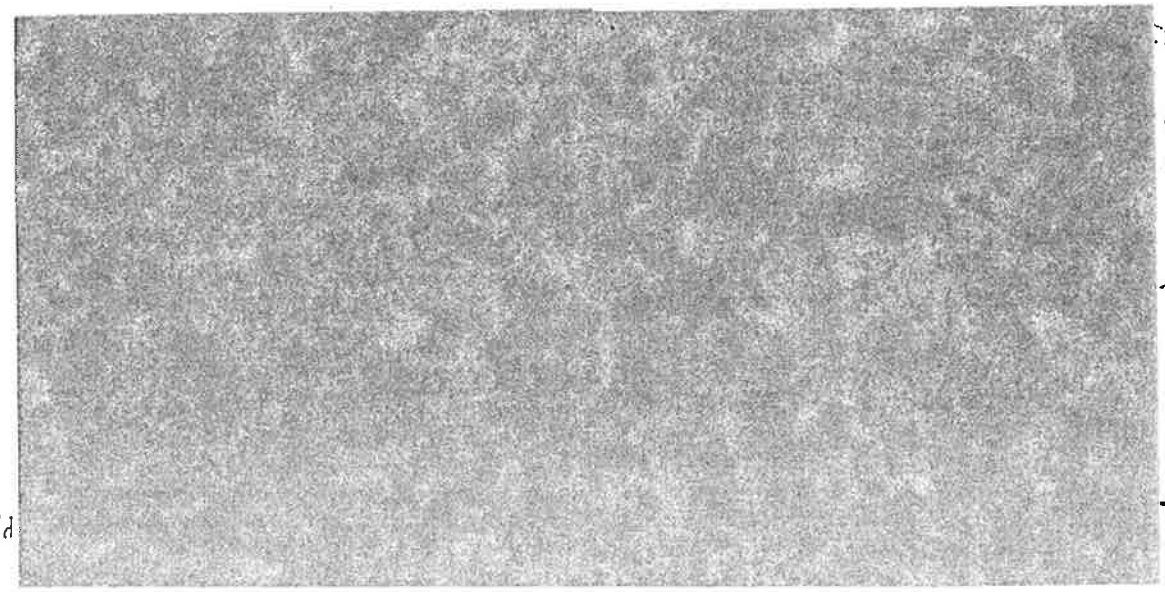
GRANT OF OPTION

In consideration of the sum of [redacted] to be paid by Purchaser to John A. Kochergen Properties, Inc. on behalf of Seller as provided herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Seller grants to Purchaser, its successors and assigns, on the terms and conditions set forth below, the exclusive right and option (the "Option") to purchase that certain real property consisting of approximately 148 acres located in the Northeast Quarter of Section 19, Township 21 South, Range 18 East, Mount Diablo Base and Meridian, within the City of Avenal, California (the "Property"), and more fully described on Exhibit "A" attached hereto and made a part hereof for all purposes.

The exact boundaries and acreage of the Property shall be established by the survey (the "Survey") referenced in paragraph 6, and a legal description of the Property taken from the Survey shall be used in the General Warranty Deed from Seller to Purchaser. The Property includes all underground water rights, easements, rights-of-way, gas, oil, minerals and below and above mining rights and any and all other rights of Seller that are in any way associated with the Property, or any contiguous or adjacent property, including all buildings, structures, fences, other permanent improvements to the Property, trees and rights in adjacent roads. The Property does not include any personal property of any kind, such as cattle, livestock, removable (unattached) equipment, household goods or furniture, which Seller shall remove before Seller is required to relinquish possession of the Property.

STATEMENT OF AGREEMENT

The Option is granted on the following terms and conditions:



3. Water Supply. In addition to the Option granted hereunder, Seller shall grant, and shall cause John A. Kochergen Properties, Inc. to grant, to Purchaser the exclusive right to acquire a water supply (the "Water Supply"), of up to 3,000 gallons per minute, or 4824-acre feet per year, from water wells owned by Seller and John A. Kochergen Properties, Inc., located on property owned by Seller and John A. Kochergen Properties, Inc. in Kings County, California, or on contiguous property owned by Seller and John A. Kochergen Properties, Inc. in Fresno County, California, which wells currently and historically have been used for beneficial uses on such property located in both Kings and Fresno Counties (collectively, the "Wells"). The Wells shall be more fully described on Exhibit "A" to the Water Supply Agreement attached hereto as Exhibit "C" (the "Water Supply Agreement"). Seller hereby represents that the Wells are capable of delivering water to pipelines adjacent to the Wells. Purchaser shall have the right to exercise its right to acquire the Water Supply throughout the term of this Agreement by providing written notice to Seller of such exercise. Upon Seller's receipt of Purchaser's notice that it has elected to exercise its rights to acquire the Water Supply, Seller and Purchaser shall execute and deliver the Water Supply Agreement, in the form attached hereto as Exhibit "C."

-2251911
04/19/01
Apr-18-2001 05:38pm From-DUKE LEGAL 718 627 5550 T-469 P.003/026 F-149
APR-19-01 THU 5:37 PM KOCHERGEN FARMS FAX NO. 559 277 9750 P. 2

Option Agreement dated 1 May 2001
Pages 3-8 Redacted

IN WITNESS WHEREOF, Seller and Purchaser have executed this Agreement under seal as of the Effective Date.

SELLER:

Mike J. Kochergen

Tanya A. Kochergen

PURCHASER:

DUKE ENERGY AVENAL, LLC

By: Bradley K. Porlier
Name: Bradley K. Porlier
Title: Vice President

~0596765
04/19/01
713 627 5550 T-465 P.010/026 F-149
FAX NO. 559 777 9750 P. 9
Apr-18-2001 05:44pm From-DUKE LEGAL

Option Agreement dated 1 May 2001
Exhibit A & B Redacted

EXHIBIT "C"

WATER PURCHASE AGREEMENT

This Water Purchase Agreement (this "Agreement") is made and entered into this ____ day of _____ (the "Effective Date"), by and among John A. Kochergen Properties, Inc. and Mike J. Kochergen, on the one hand (collectively, "Seller"), and Duke Energy Avenal, LLC, on the other ("Purchaser") (Seller and Purchaser hereinafter sometimes referred to collectively, as the "Parties," and individually, as a "Party").

WITNESSETH:

WHEREAS, Seller owns certain real property and associated water wells in Kings County, California, and contiguous property in Fresno County, California, all as more fully described in Exhibit "A" attached hereto (the "Property"); and

WHEREAS, Seller and Purchaser have executed an Option Agreement dated as of May 1, 2001, related to said property of Seller; and

WHEREAS, Seller, as the owner of such real property, owns and operates water wells with total production capacity of at least 3,000 gallons per minute, 4824 acre-feet per year (the "Supply"), which wells have been used for beneficial uses on such properties in Kings and Fresno Counties (collectively, the "Wells"); and

WHEREAS, Purchaser wishes to purchase the Water Supply from Seller, pursuant to the terms and conditions of this Agreement, for use in connection with a proposed electric generating facility under development by Purchaser in the City of Avenal, California (the "Facility"); and

WHEREAS, Purchaser currently contemplates that the development of the Facility will be accomplished in two phases of development, with the first phase being the development, construction and operation of a simple cycle facility ("Phase I"), and the second phase being the development, construction and operation of a combined cycle facility ("Phase II"); and

WHEREAS, Purchaser's water supply needs for Phase I will be different from those required in connection with Phase II; and

WHEREAS, Seller wishes to sell to Purchaser the Water Supply for both Phase I and Phase II pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the mutual promises contained herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. Purchase of Water Supply. Seller shall sell to Purchaser, and Purchaser shall purchase from Seller, a Water Supply of up to 3,000 gallons per minute, 4824 acre-feet per year, together with all rights of ingress and egress reasonable or necessary for Purchaser to capture, remove or otherwise use or enjoy such Water Supply in connection with the operation of the Facility.

2. Term. Unless earlier terminated by Purchaser as provided in Paragraph 4 below, the term of this Agreement shall commence on the Effective Date and shall expire on the thirty-fifth (35th) anniversary thereof (the "Term"). This Agreement shall constitute a covenant running with the land for the duration of the Term hereof.

3. Purchase Price.

5. Purchaser's Right to Connect to the Wells. Purchaser shall have the right to construct, maintain and operate a pipeline (the "Pipeline") from the Wells to the Facility, as well as any other facilities required to enable water to be delivered from the Wells to the Facility. At the point at which the Pipeline is connected to each of the Wells, which point shall be mutually agreed upon by Purchaser and Seller, Purchaser shall install a meter capable of accurately measuring the quantity of water accepted into the Pipeline (the "Meter"). Purchaser shall install,

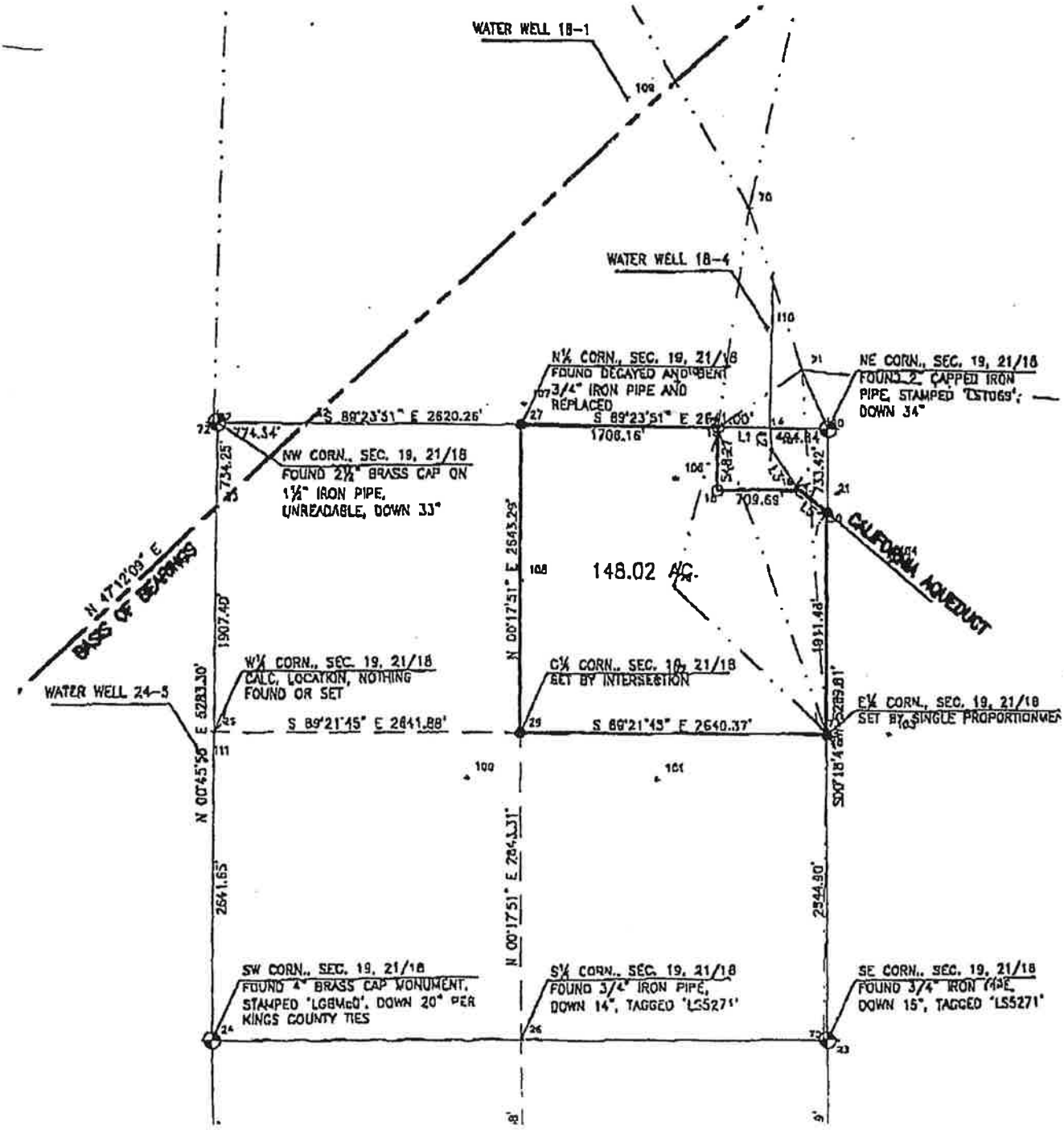
Option Agreement dated 1 May 2001
Exhibit C page 16 Redacted

10. Use. During the Term of this Agreement, Seller shall refrain from further conveying, leasing or encumbering the Water Rights or any interest therein, or otherwise altering the existing condition of title to the Water Rights, without the prior written consent of Purchaser. Seller agrees that Purchaser's use of the Wells and the Water Rights shall have priority over any other use thereof by Seller, and to the extent that Seller supplies groundwater to Purchaser, Seller will, through conservation measures or otherwise, reduce its use of groundwater in connection with the Property accordingly.

[redacted]

Option Agreement dated 1 May 2001
Exhibit C page 18-22 Redacted

Water Purchase Agreement
Exhibit A (page 1)



Water Purchase Agreement
Exhibit A (page 2)

LEGAL DESCRIPTION
DUKE ENERGY NORTH AMERICA – AVENAL ENERGY SITE
April 9, 2001
Page 3

WATER WELL COORDINATES DESCRIPTIONS

WELL	STATE PLANE COORDINATES NORTHING	EASTING	ELEVATION	RIGHT ANGLE DISTANCE FROM SEC. CORNER
18-1	588207.807	1902967.111	321.34	SE SEC18, 21/18 1750.37' W & 2833.74'N
18-4	586238.883	1904162.226	319.16	SE SEC18, 21/18 534.60' W & 875.49' N
24-5	582516.992	1899314.659	397.93	E1/4 SEC24, 21/17 253.74' S & 73.25' W

Federal Power Avenal, LLC
2116 Watts Road
Houston, TX 77030

December 14, 2006

John A. Kochergen Properties, Inc.
8163 West McKinley
Fresno, CA 93722

Mike J. and Tanya A. Kochergen
8163 West McKinley
Fresno, CA 93722

RE: Option Agreement dated May 1, 2001 (as amended) between Mike J. Kochergen and Tanya A. Kochergen and Duke Energy Avenal, LLC

Gentlemen:

Federal Power Avenal, LLC hereby gives written notice of Federal Power Avenal's election of notice to exercise pursuant to article nine of the Option Agreement dated May 1, 2001 (as amended) by and between Mike J. Kochergen and Tanya A. Kochergen and Duke Energy Avenal, LLC.

Closing shall take place at the offices of Downey Brand, Sacramento, CA, once all necessary documents (including survey, lien release, deed, title insurance, affidavits and other legal documents) have been completed or prepared for signature at closing, as the case may be. We estimate that the closing will take place on or about January 15, 2007.

If you have any questions, please do not hesitate to call me at (713) 857-4633 or (403) 451-4560.

Thank you.

Sincerely,

Steven F. Gilliland
President & Chief Executive Officer

FEDERAL POWER AVENAL, LLC

P=403 514 8128

2116 Watts Road
Houston, TX 77030

December __, 2007

Mike J. and Tanya A. Kochergen
8163 West McKinley
Fresno, CA 93722

Re: **Option Agreement dated May 1, 2001 (as amended the "Agreement") between Mike J. Kochergen and Tonya A. Kochergen (collectively "Seller") and Federal Power Avenal, LLC ("Purchaser").**

Dear Mr. and Mrs. Kochergen:

On December 14, 2006, Purchaser exercised the "Option" as defined in the Agreement. Pursuant to Section 9 of the Agreement, "Closing" was to take place within 30 days of the Option Expiration Date. Purchaser and Seller have verbally agreed to extend the "Closing" but now desire to memorialize this extension in writing.

Purchaser and Seller hereby agree that Closing under the Agreement shall occur on date to be mutually approved (such approved not to be unreasonably withheld, conditioned or delayed).

If the foregoing accurately reflects your understanding of the agreement of the parties to amend the Agreement, please so indicate by signing in the space provided and returning a letter to me at the above address.

Very truly yours,

FEDERAL POWER AVENAL, LLC

By: _____
Name: STEVEN F. GILLILAND
Title: PRESIDENT

ACCEPTED AND AGREED TO THIS
___ DAY OF DECEMBER, 2007:

SELLER:

_____
Mike J. Kochergen, Individually

_____
Tanya A. Kochergen, Individually

JOHN A. KOCHERGEN PROPERTIES, INC.

By: _____
John A. Kochergen, President

ATTACHMENT W.6

CONCEPTUAL SANITARY SEWER SYSTEM
LEACHING FIELD/SEPTIC SYSTEM

ATTACHMENT W.6

CONCEPTUAL SANITARY SEWER SYSTEM
LEACHING FIELD/SEPTIC SYSTEM

Avenal Energy
Avenal, California

March 2008

The Avenal Energy facility septic system location and layout are shown in design drawings in the Application for Certification (AFC) including AFC Figures 2.1-4, 2.3-3, 2.3-4, 2.3-9, 2.3-10 and 2.3-11. The following pages provide the conceptual design.

SEWAGE DISPOSAL

Prepared By: Jon Davis

ASSUME:

FIXTURE UNITS =	123		
SOIL =	CLAY WITH A SMALL AMOUNT OF SAND OR GRAVEL		

THEREFORE:

SEPTIC TANK SIZE =	3575	GAL	PER UPC, TABLE I-2
(MAX. SIZE ALLOWED FOR SOIL TYPE =0	3000	GAL	PER UPC, TABLE I-2
REQUIRED AREA OF LEACHING PER 100 GAL SEPTIC TANK CAPACITY =	120	SF	PER UPC, TABLE I-5
DISPOSAL FIELD AREA =	4290	SF	
DISPOSAL FIELD SIZE =	65	FT	SQUARE
NUMBER OF DISPOSAL FIELDS =	2		PER UPC, PARA. I1(d) (1 IS TO BE INSTALLED LATER IF THE FIRST ONE CANNOT HANDLE THE FLOW)

ALTERNATE DESIGN

ASSUME:

TOTAL NUMBER OF PEOPLE PER 24 HOURS =	25	(ESTIMATE)	
TYPE OF OCCUPANCY =	FACTORY WITH SHOWERS WITH CAFETERIA		
SOIL =	CLAY WITH A SMALL AMOUNT OF SAND OR GRAVEL		

THEREFORE:

FLOW PER PERSON PER DAY:

FACTORY, WITH SHOWERS =	35	GAL	PER UPC, TABLE I-3
CAFETERIA =	5	GAL	PER UPC, TABLE I-3
TOTAL =	40	GAL	
TOTAL DAILY FLOW =	1000	GAL	
SEPTIC TANK SIZE =	1.5	X	TOTAL DAILY FLOW, PER UPC, TABLE I-3
=	1500	GAL	
REQUIRED AREA OF LEACHING PER 100 GAL SEPTIC TANK CAPACITY =	120	SF	PER UPC, TABLE I-5
DISPOSAL FIELD AREA =	1800	SF	
DISPOSAL FIELD SIZE =	42	FT	SQUARE
NUMBER OF DISPOSAL FIELDS =	2		PER UPC, PARA. I1(d) (1 IS TO BE INSTALLED LATER IF THE FIRST ONE CANNOT HANDLE THE FLOW)

ESTIMATE OF FIXTURE UNITS

FIXTURE	LOCATION	FU EACH	COUNT	TOTAL FU
TOILETS	MEN'S ROOM, C&AB	10	1	10
TOILETS	WOMEN'S ROOM, C&AB	10	2	20
TOILETS	MEN'S ROOM, WAREHOUSE	10	2	20
TOILETS	WOMEN'S ROOM, WAREHOUSE	10	1	10
URINALS	MEN'S ROOM, C&AB	5	1	5
URINALS	MEN'S ROOM, WAREHOUSE	5	2	10
LAVATORIES	MEN'S ROOM, C&AB	2	1	2
LAVATORIES	WOMEN'S ROOM, C&AB	2	1	2
LAVATORIES	MEN'S ROOM, WAREHOUSE	2	2	4
LAVATORIES	WOMEN'S ROOM, WAREHOUSE	2	2	4
SHOWERS	MEN'S LOCKER, WAREHOUSE	4	2	8
SHOWERS	WOMEN'S LOCKER, WAREHOUSE	4	2	8
JANITOR'S SINK	C&AB	4	1	4
JANITOR'S SINK	WAREHOUSE	4	1	4
DRINKING FOUNTAIN	C&AB	2	2	4
DRINKING FOUNTAIN	WAREHOUSE	2	2	4
KITCHEN SINK	C&AB	4	1	4
				123

Prepared By; Jon Davis

Q (CFS) = 1.486*(R^(2/3))*(S^0.5)*A/n

SOIL TYPE	REQUIRED SQ FT OF LEACHING AREA/ 100 GAL TANK CAPACITY	MAXIMUM SEPTIC TANK SIZE ALLOWABLE
1	20	7500
2	25	7500
3	40	5000
4	90	3500
5	120	3000

PIPE SIZE INCHES	FIXTURE UNITS FOR HORIZONTAL DRAINAGE @ 2%	FIXTURE UNITS FOR HORIZONTAL DRAINAGE @ 1%	n	R (FULL) = DIA(FT)/4	R^(2/3)	S FT/FT	S^.5	A FT	Q FULL CFS	Q FULL GPM	GPM/ FU	V (FULL) =Q/A FPS
4	216	172.8	0.013	0.083333	0.190786	0.01	0.1	0.087266	0.190313	85.35542	0.493955	2.180827
6	720	576	0.013	0.125	0.25	0.01	0.1	0.19635	0.561107	251.6563	0.436903	2.857692
8	2640	2112	0.013	0.166667	0.302853	0.01	0.1	0.349066	1.208413	541.9731	0.256616	3.461848

PIPE SIZE INCHES	FIXTURE UNITS FOR HORIZONTAL DRAINAGE @ 2%	n	R (FULL) = DIA(FT)/4	R^(2/3)	S FT/FT	S^.5	A FT	Q FULL CFS	Q FULL GPM	GPM/ FU	V (FULL) =Q/A FPS
4	216	0.013	0.083333	0.190786	0.02	0.141421	0.087266	0.269143	120.7108	0.558846	3.084156
6	720	0.013	0.125	0.25	0.02	0.141421	0.19635	0.793525	355.8957	0.4943	4.041387
8	2640	0.013	0.166667	0.302853	0.02	0.141421	0.349066	1.708954	766.4658	0.290328	4.895792

ATTACHMENT W.7

GROUND WATER DRAWDOWN MODELING REPORT

AQUIFER DRAWDOWN ESTIMATE
AVENAL ENERGY

Avenal, California

Supervising Hydrogeologist:

Dennis Maslonkowski, CEG, CHG
CHG No. 277

1.0 Background and Purpose

The Avenal Energy project is described in detail in Section 2.0 of the Avenal Energy Application for Certification (AFC) dated February 2008. Water resources in the project vicinity are described in detail in Section 6.5 of the AFC. Table 2.3-1 in the AFC identifies the average annual project water use as 20 acre-feet per year (AFY), and the maximum use year as 104 AFY. As described in Section 2.0 and Section 6.5 of the AFC, the project will obtain its water supply from the City of Avenal, which uses surface water from the State Water Project. Ground water would only be used as a back-up water supply.

Any water used from ground water wells would be fully offset by altered farm practices for an equivalent reduction in agricultural water use, so the project will not result in an increase in net ground water pumping [AFC page 6.5-11 in the 2nd paragraph; page 6.5-15 in the 2nd (full) paragraph; page 6.5-17 in the second bullet]. This is a key aspect of the back-up water supply proposal. As stated in the referenced pages, the agricultural water use offset would be achieved through measures that would reduce agricultural water consumption such as crop changes or increased irrigation management (e.g., change sprinklers to drip irrigation) such that there is no increase in water use compared to pre-project conditions. Kochergen farms owns the property optioned for the plant and the surrounding farmland and uses ground water from the wells proposed for back up project water supply for agricultural needs for their contiguous 2,000+ acres of crops. Water saving measures have already been implemented on Kochergen Farms to offset the project back-up water supply use, and during use of ground water annual reports will be provided to CEC to assure that agricultural ground water pumping conservation measures continue to be used. Because the project will not result in any increase in ground water pumping, the project will not have any incremental ground water drawdown impact. However, a computer model was used to demonstrate that the project would not have a significant impact on the closest non-project wells even if the full offset of backup water supply pumping is not considered. The following sections summarize key ground water conditions in the area and the results of drawdown modeling.

2.0 Setting

When ground water is used for the backup water supply, it would be pumped from one or more of three existing large-capacity water supply wells that occur on the contiguous property. The locations of the wells that would be used are shown in Figure 2.1-3A of the AFC, and general characteristics of these wells are provided in Table 6.5-2 of the AFC. As described in the AFC, the wells that may be used are completed to depths of 1,140 to 1,176 feet below the ground surface. Beneath the site, the regional aquifer tapped by the wells is unconfined and the water table is approximately 220 to 250 feet below the ground so the thickness of saturated sediments in the wells is on the order of 900 feet. These are large wells with capacities ranging from 1,100 to 2,320 gpm (AFC Table 6.5-2) that are routinely pumped at high capacities for agricultural needs. For comparison, the average use rate for the power plant will be about 12 gpm (See Table 2.3-1 in AFC Chapter 2.0, Project Description and Engineering) and the maximum water use year would be 104 acre-feet, which is an average pumping rate of 65 gpm. These rates are pumping rates that are negligible compared to the typical agricultural pumping rates for these wells.

As described in Section 6.5.1.3 of the AFC, the site is in the Westside Basin, which is part of the San Joaquin Valley alluvial basin, the largest ground water basin in California. Since the completion of the State Water Project, the overall water balance in the Westside Basin has been one of net recharge, and ground water levels are rising. As described in AFC Section 6.5.1.3 the California Department of Water Resources estimates ground water extraction in the Westside Basin at 193,000 AFY, while ground water recharge estimates range from 200,000 to 270,000 AFY.

Ground water use in the Westside Basin is almost exclusively agricultural. Well yields typically range between 800 and 1,500 gpm. Figure 1 provides the locations of wells within 0.50 mile of the proposed backup water supply wells. The only wells shown in Figure 1 not owned by Kochergen farms are the six wells located in Sections 17 and 20, which border Kochergen Farms to the east. Other wells shown in Figure 1 are within the Kochergen Farms property.

Of the nearby wells that are not owned by Kochergen Farms, the ones closest to any of the wells proposed for backup water supply are 21S18EN001, 21S18EN002, and 21S18EN003, located approximately 1,000 feet southwest of backup supply well 18-4.

3.0 Computer Modeling Summary and Results

For purposes of developing a conservative drawdown model, the following assumptions were used that result in the model overestimating the actual amount of drawdown that would be expected if the offset of ground water pumping for back up supply were to be ignored:

- The modeled pumping rate is based on the worst-case water use year, for a total annual usage of 104 AFY (equivalent to a continuous year-round pumping rate of 65 gpm).
- The worst-case year occurs coincident with a full interruption of the project's primary water supply, so that the water is taken solely from the backup supply wells.
- All of the water extracted is taken from the single well that is closest to any well outside the Kochergen Farms property (i.e., 1,000 feet from the pumping well).

The combination of the three assumptions above is an unrealistically conservative scenario, but is used to demonstrate that even with this combined set of extremely conservative parameters, the backup water supply ground water pumping could not materially affect or adversely impact surrounding wells.

To estimate the drawdown 1,000 feet from backup supply well 18-4 under the above scenario, a two-dimensional, single-layer model was developed with MODFLOW, a widely-used, finite-difference algorithm for ground water flow (McDonald and Harbaugh, 1984). Pumping data (Clovis, 2001) from nearby well 24-5, which is of the same depth and diameter as 18-4, was used to calibrate the model hydraulic conductivity. The following assumptions and parameters were employed:

- Ground water flow is unconfined
- The total well depth (1,140 feet) was used as the aquifer depth

- A general head boundary condition, with limits at 5,000 feet from the well, was employed
- The hydraulic conductivity in the aquifer was calibrated to 4.2 feet/day, using a pumping rate of 900 gpm and an approximate average yield of 6.5 gpm/foot (Clovis, 2001). This value, which enabled a good match between the actual well drawdown and the modeled drawdown, corresponds well with the hydraulic conductivity values used for the project vicinity in regional modeling performed by USGS (Williamson et al., 1989)
- The unpumped potentiometric surface in the vicinity of well is approximately 220 feet below grade (see AFC Section 6.5.1.3). (Note that, for calibration to determine the hydraulic conductivity, an undisturbed potentiometric surface 350 feet below grade was used, for consistency with conditions recorded during the pump test.)
- Pumping was modeled at 65 gpm under steady state conditions

Under these conditions, the model predicted a drawdown of 9 feet in well 18-4, and a drawdown of 5.2 feet at the wells (wells 21S18EN001, 21S18EN002, and 21S18EN003) 1,000 feet away. Figure 2 provides a graphical representation of the model results. It is concluded that backup pumping at the site would have little effect on nearby wells, even if the full offset of water pumping is ignored. The approximately five feet of drawdown conservatively estimated at wells 1,000 feet from the pumping well is not material considering the nature of the large prolific aquifer that occurs in the site region and the large capacity wells typical for the area. This small amount of drawdown would not significantly affect well performance or capacity.

4.0 Conclusions

In summary, the potential backup water supply needs for the project will be negligible compared to existing agricultural pumping, and the project proposal includes full offset of backup water supply use so there will be no increase in pumping compared to existing conditions. Documentation of full offset will be submitted to CEC on an annual basis during project operations utilizing ground water. The back-up water supply proposal is designed to assure that there is no impact on ground water use or ground water drawdown as a result of the project. Furthermore, modeling based on conservative assumptions demonstrates that nearby wells would not be significantly affected, even if the committed offset of ground water pumping is ignored.

5.0 References

Clovis Water Well Drilling, Pump Test Data Sheet, Well 24-5, June 19, 2001.

McDonald, M.G., and Harbaugh, A.W., A modular three-dimensional finite-difference groundwater flow model, U.S.G.S. Open-File Report No. 83-875, 1984.

Williamson, Prudic and Swain, USGS Professional Paper 1401-D, 1989.

Theim, G., G. Hydrologische Methoden, Gebhardt, Leipzig, 1906.

Attachments:
Figure 1
Figure 2
Curriculum Vitae for Dennis Maslonkowski, CEG, CHG

LEGEND

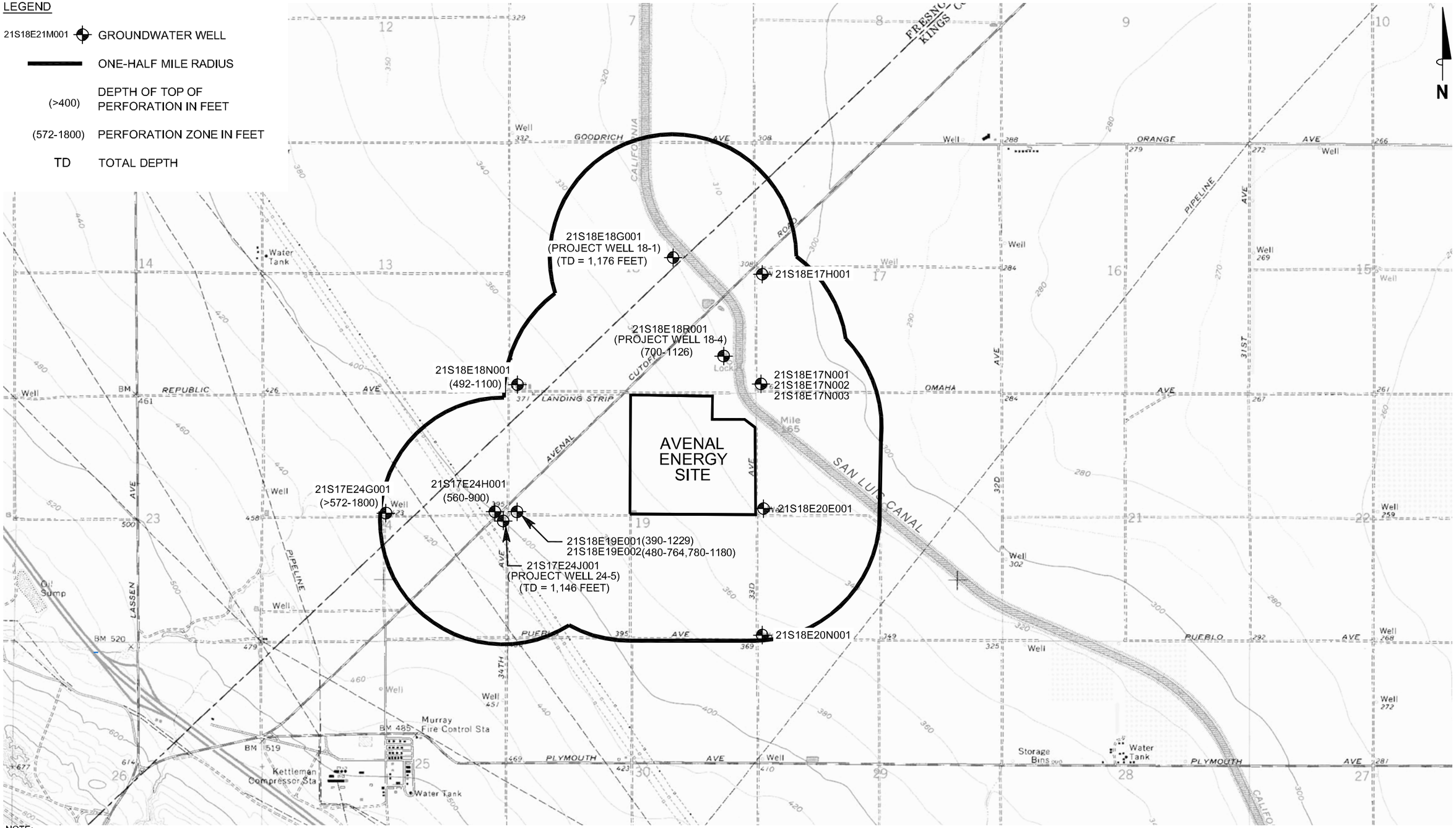
21S18E21M001 GROUNDWATER WELL

ONE-HALF MILE RADIUS

(>400) DEPTH OF TOP OF PERFORATION IN FEET

(572-1800) PERFORATION ZONE IN FEET

TD TOTAL DEPTH



NOTE:

PERFORATED INTERVAL INDICATED IN PARENTHESIS WHERE AVAILABLE. TOTAL DEPTH (TD) INDICATED IN PARENTHESIS WHERE AVAILABLE AND SCREENED INTERVAL DATA IS NOT AVAILABLE.

REFERENCE:

U.S.G.S 7.5 MINUTE TOPOGRAPHIC SERIES MAPS OF LA CIMA, CALIFORNIA, DATED 1978.

0 2,000 4,000 FEET

SCALE

TRC

PROJECT: 158156

FACILITY:

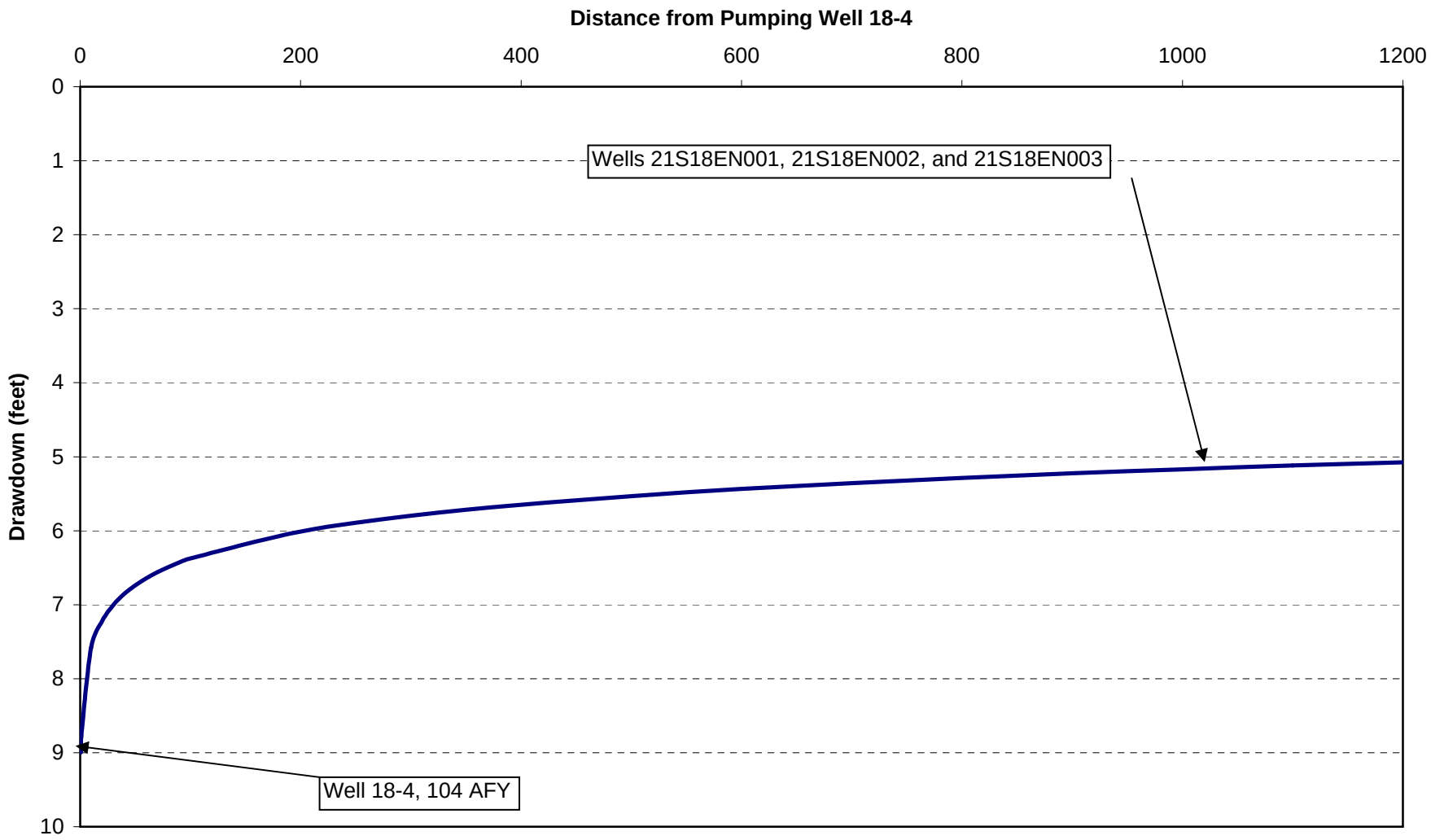
AVENAL POWER CENTER, LLC

EXISTING GROUNDWATER WELLS WITHIN ONE HALF MILE

FIGURE 1

MS=1:1 I:\DUKE\158156-AVENAL\AVENAL-GW WELLS.dwg Mar 26, 2008 - 12:04pm Rcollins

Figure 2
Modeled Drawdown Results



DENNIS MASLONKOWSKI, PG, CEG, CHG

EDUCATION

M.S., Geology (Hydrogeology emphasis), San Jose State University, 1988
B.S., Geology/Computer Science, California State University, Hayward, 1980

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Geologist, California, (#5299), 1992
Professional Geologist, Oregon, (#1578), 1994
Certified Engineering Geologist, California, (#1978), 1995
Certified Hydrogeologist, California (#277), 1995
Certified Environmental Manager, Nevada, (#1319), 1993

AREAS OF EXPERTISE

Mr. Dennis Maslonkowski has program management and technical experience encompassing:

- Soil and Groundwater Remediation
- In-Situ Remediation
- Remedial Investigations and Site Characterization
- Litigation Support and Water Rights
- Groundwater Resources Evaluation
- Groundwater Flow and Transport Modeling
- Landfill Monitoring and Remediation

REPRESENTATIVE EXPERIENCE

Mr. Maslonkowski has over 25 years of experience in a wide variety of hydrogeologic and geologic investigations at industrial sites throughout the Western United States including power plants and natural gas compressor stations, chemical plants, electronic and manufacturing facilities, lumber mills, aerospace facilities, petroleum refineries and bulk fuel terminals, and DOD facilities. He has managed numerous large scale projects regulated under CERCLA, RCRA, and regulatory agencies including EPA Region 9, RWQCB, and DTSC. Mr. Maslonkowski has spent the last ten years focusing on innovative in-situ remediation approaches to treating recalcitrant compounds including CVOCs, DNAPL, hexavalent chromium, perchlorate, and MTBE.

PROJECT EXPERIENCE

Soil and Groundwater Remediation

Pacific Gas & Electric, Groundwater Remediation – Hinkley Gas Compressor Station, CA (Principal Hydrogeologist: 2001 – 2006)
Served as the Principal Hydrogeologist in charge of oversight and management of hydrogeologic investigations associated with the remediation of a large

hexavalent chromium plume. Responsibilities included oversight and direction of feasibility studies, groundwater extraction system design and hydrogeologic testing (aquifer testing, groundwater modeling), remediation system pilot testing, and optimization of a groundwater pump and treat system, monitoring well and water supply well installation, and vadose zone investigations, as well as regulatory negotiations with RWQCB.

Pacific Gas & Electric, Groundwater Remediation, Dutch Slough Dehydrator Station - Oakley, CA (Principal Hydrogeologist: 2002)
Served as the Principal Hydrogeologist in charge of peer review for groundwater remediation optimization and system design at the Dutch Slough Dehydrator Station and Oakley Road Metering Station. The groundwater remediation systems at these two sites included VES, air sparging, and enhanced bioremediation.

US Army Facility, Guaranteed Fixed Price Remediation and Site Closure – Rio Vista, CA (Senior Project Manager: 1999 – 2001)
Served as the Project Manager for the guaranteed fixed price (GFP) remediation and site closure of a former Army Reserve Center along the Sacramento River under BRAC and CERCLA guidelines. This was the first successful GFP completed for the US Army in California. Shallow soil, river sediments, and groundwater at the site were impacted by heavy metals and petroleum hydrocarbons. Directed the preparation of soil and river sediment management plans, traffic plans, remedial investigations, interim removal actions, an ecological risk assessment, and a background groundwater study. Managed a team of engineers and geologist during the remediation efforts at the 28-acre site that included the demolition and removal of numerous structures (a battery shop, an incinerator, numerous sumps and waste oil trenches, and a hazardous waste storage area) the removal of a fuel pipeline and storm sewers and the excavation and disposal of over 5,000 cubic yards of hydrocarbon-impacted soil. Directed technical presentations and regulatory negotiations and meetings with the Rio Vista City Council and local reuse authority and regulatory meetings with DTSC, CVRWQCB, and USEPA Region 9.

US Navy Crows Landing Facility, Groundwater Remediation – Crows Landing, CA (Principal Hydrogeologist: 2000 – 2001)
Assisted in developing a feasibility study for groundwater remediation at a former Navy airfield in Central California under BRAC guidelines. Groundwater at the site was impacted by various chemicals including TCE, JP-4, and petroleum hydrocarbons. Evaluated ERD, chemical oxidation, SVE, and groundwater extraction alternatives.

American Micro Devices, Groundwater Remediation – Sunnyvale, CA (Project Director: 2000 – 2001)
Supervised all groundwater remediation and environmental activities at five electronics facilities in Sunnyvale and Santa Clara, including three Federal

Superfund sites. Groundwater at these sites was impacted by VOCs (primarily TCE); cleanup is overseen by SF-RWQCB. Activities included regulatory negotiations, oversight of groundwater remediation and monitoring and technical presentations to the client and outside legal counsel. Assisted legal counsel in evaluating options to get the sites removed from the NPL including evaluation of technical impracticability, containment zone policy, and monitored natural attenuation. Supervised the completion of a fate and transport modeling project to evaluate monitored natural attenuation of TCE plume following extraction well curtailment.

IT Corporation Panoche Facility, Groundwater Remediation – Benicia, CA (Project Manager and Senior Hydrogeologist: 1992 – 1996)
Served as the Project Manager for remediation of VOC-impacted groundwater; conducted field investigations to evaluate the lateral and vertical extent of a VOC plume (chemicals included PCE, TCE, and ketones) emanating from leaking drums in a drum burial area at a Class I hazardous waste landfill (site cleanup was overseen by DTSC). The evaluation was complicated because the site overlies fractured sandstone and shale bedrock aquifer system, the site is traversed by numerous faults, and a DNAPL source exists within the burial trenches. The study consisted of the completion of over 20 exploratory borings drilled by an air rotary method with 94-mm core recovery, installation of 12 deep monitoring wells in fractured bedrock, acoustic televiewer and borehole geophysical logging, aquifer testing, and contaminant transport modeling. Based on this investigation, an evaluation of remedial alternatives was completed to remediate the plume including the use of an in-situ reactive wall using zero-valent iron and various pump and treat alternatives. Designed and directed installation of a groundwater extraction system to collect impacted groundwater in the bedrock down gradient of the drum burial area.

Intersil/GE, Groundwater Remediation – Cupertino, CA (Project Hydrogeologist: 1990)
Maintained and operated a groundwater pump and treat systems at two electronics facilities in Cupertino and Sunnyvale to remediate a TCE plume. Supervised the replacement of air stripper packing, carbon canisters, and submersible pumps. Analyzed water quality data and system performance and recommended changes to remediation system, and wrote monthly monitoring reports.

Aervoe Pacific, Soil Vapor Extraction System – San Leandro, CA (Project Hydrogeologist: 1990)
Supervised site crew in the remediation of solvent-contaminated soil (TCE, xylenes) at a paint factory in San Leandro. Directed subcontractors to excavate 8,000 cubic yards of contaminated soil and supervised the design and construction of soil beds and vacuum extraction system. Reviewed analytical data and wrote technical reports describing work at site. Tracked all costs for the project.

Treasure Island Naval Facility, Soil Remediation – San Francisco, CA (Project Hydrogeologist: 1990)
Managed a soil remediation project that involved passive soil aeration of excavated soil impacted with diesel from numerous USTs. Supervised periodic monitoring of the site and evaluated effectiveness of remediation.

ARCO Refinery, Groundwater Remediation Alternatives Evaluation – Carson, CA (Project Hydrogeologist: 1991)
Reviewed consultant's reports and hydrogeologic data to evaluate remedial alternatives at a Southern California Refinery. Assisted in writing a groundwater remediation work plan for the removal of both liquid and dissolved hydrocarbons at the site in response to a CAO from RWQCB.

In-situ Remediation

Pacific Gas & Electric, In-situ Remediation of Chromium – Hinkley Gas Compressor Station, CA (Principal Hydrogeologist: 2001 – 2006)
Served as the Prinicipal Hydrogeologist in charge of oversight and management for an investigation to evaluate and pilot test various in-situ remediation approaches to treat hexavalent chromium in groundwater. A bench scale test was conducted to evaluate biological substrates and chemical reductants for treatment and two in-situ pilot studies were conducted to evaluate the use of lactate and emulsified vegetable oil as subtracted for bioremediation.

Pacific Gas & Electric, In-situ Remediation of Hexavalent Chromium – Topock Gas Compressor Station, CA (Principal Hydrogeologist: 2001 – 2002)
Served as the Principal Hydrogeologist in charge of evaluating the feasibility of in-situ remedial approaches to remediate a hexavalent chromium plume. Presented alternative in-situ approaches to DTSC and RWQCB staff, peer reviewed bench scale and pilot scale data.

Union Pacific Railroad, In-situ Bioremediation – Santa Rosa, CA (Principal Hydrogeologist: 2001 – 2006)
Evaluated the feasibility of enhanced reductive de-chlorination for treating VOCs (primarily TCE, Freon 113, and 1,4-Dioxane) in groundwater at the former West Coast Metals facility. Designed and implemented a successful in-situ pilot study using a passive bio-barrier approach and the injection of an electron donor, cheese whey, to treat the VOCs.

GTE, In-situ Bioremediation – Mountain View, CA (Principal Hydrogeologist: 2005 – 2006)
Served as Principal Hydrogeologist in charge of peer review for a bench scale test and investigation to evaluate various in-situ remediation approaches for a TCE plume beneath a high-end condominium complex. The investigation

included microcosm testing to evaluate the presence of VOC-degrading bacteria and the effectiveness of substrate addition and bioaugmentation.

Honeywell, In-situ Bioremediation – Belmont, Newark, CA (Principal Hydrogeologist: 2005 – 2006)
Provided senior peer review for an in-situ bioremediation pilot study at the Honeywell Belmont site and for a feasibility study for in-situ remediation methods including chemical oxidation (using persulfate) to be used at the Honeywell Newark site.

Beale Air Force Base, In-situ Bioremediation and Chemical Oxidation – Sacramento, CA (Principal Hydrogeologist: 2005 – 2006)
Provided senior peer review for an ongoing in-situ bioremediation pilot study being conducted at Site 10; the pilot study involving a groundwater recirculation system using lactate as the in-situ reagent. Also provided peer review for an in-situ chemical oxidation pilot study using potassium permanganate conducted at Site 32.

Romic Chemical, In-situ Bioremediation – Palo Alto, CA (Senior Project Manager: 2000 – 2001)
Managed all groundwater remediation and environmental activities at the Romic solvent recycling facility which is impacted by various chemicals (TCE, acetone, MEK, and petroleum hydrocarbons). Evaluated the ongoing pump-and-treat remediation of chlorinated VOCs in a low permeability aquifer along the San Francisco Bay margin. Designed and implemented an in-situ bioremediation pilot study to evaluate the feasibility of enhanced reductive de-chlorination using passive bio-barriers at two different locations including an area with high sulfate (concentrations greater than 2,000 mg/L). Oversaw the construction and startup of the pilot study which consisted of eight injections wells used for multiple injections of electron donor, including molasses and cheese whey. This was the first in-situ project in California to compare molasses and whey as electronic donors. Evaluated pilot study monitoring results and recommended modifications during the pilot study. Presented pilot study results to the EPA, SF-RWQCB, and local public reuse authority.

Nestle USA, In-situ Bioremediation – San Leandro, CA (Project Director: 2000 –2001)
Provided technical oversight and direction for a groundwater remediation project at a former manufacturing facility in San Leandro, California. Environmental cleanup activities at the site were overseen by the SF-RWQCB. Environmental activities at the site included a pilot study to evaluate the effectiveness of enhanced bioremediation to treat groundwater impacted with VOCs (primarily TCE). Molasses was used as an electron donor and was injected into the shallow aquifer at two locations at the site. Full scale site remediation has since commenced at the site.

Electro-Coatings, In-situ Remediation of Hexavalent Chromium – Emeryville, CA (Project Director: 2000 – 2001)
Provided senior peer review for in-situ remediation of hexavalent chromium and TCE in groundwater at a former plating facility. In-situ enhanced bioremediation was implemented using molasses as an electron donor. The site received regulatory closure from SF-RWQCB within two years of implementation of in-situ treatment.

Nestle USA, In-situ Chemical Oxidation – Ripon, CA (Senior Hydrogeologist: 1996 – 1998)
Completed a feasibility study to evaluate long-term alternatives to remediate a TCE plume associated with a former manufacturing facility. Designed and supervised a field investigation using CPT and grab groundwater sampling to evaluate options for an in-situ pilot study using a chemical oxidant. Prepared a work plan for a pilot study to evaluate the injection of potassium permanganate to treat dissolved phase TCE.

American Micro Devices, In-situ Remedial Alternatives Analysis – Sunnyvale, CA (Project Director: 2000 – 2001)
Evaluated the implementation of in-situ technologies including enhanced reductive dechlorination and chemical oxidation to remediate VOCs (primarily TCE) at a Federal Superfund site in Sunnyvale, California. Determined that in-situ bioremediation was the preferred alternative. Prepared a work plan for a pilot study to demonstrate the feasibility of ERD at the site using injection of an electron donor (either HRC or lactate) and presented recommendations to the client and the outside counsel.

<u>Remedial Investigations and Site Characterization</u>

Pacific Gas & Electric, Hunters Point Power Plant Remedial Investigations – Northern CA (Principal Hydrogeologist: 1996 – 1997)
Served as the hydrogeological discipline manager in charge of oversight of hydrogeological investigations at the Hunters Point Power Plant. Directed the hydrogeologic portion of the Phase II Site Assessment conducted for the PG&E Law Department. The purpose of the assessment and investigations was to evaluate future environmental liability and establish ball-park remediation costs associated with the divestiture of the power plants. Duties included peer review and oversight management of site characterization, soil and groundwater sampling, well installation, procurement of drilling and lab services, work plan preparation, QA/QC coordination, field activities, aquifer testing, and groundwater and fate and transport modeling of site data for risk assessment and remediation cost estimates and analysis. Worked closely with the principal remediation engineer and principal risk assessor to develop and evaluate the feasibility of various remediation alternatives. Served as the hydrogeological expert in meetings with PG&E's senior staff and outside legal counsel to discuss groundwater related issues associated with the divestiture of the power plants.

Pacific Gas & Electric, Oakland Power Plant, Moss Landing Power Plant, Morro Bay Power Plant Remedial Investigations – Northern CA (Principal Hydrogeologist: 1996 – 1997)
Served as the hydrogeological discipline manager in charge of oversight of hydrogeological investigations at the Oakland Power Plant, Moss Landing Power Plant, and Morro Bay Power Plant in Northern California. Directed the hydrogeologic portion of the Phase II Site Assessment conducted for the PG&E Law Department. The purpose of the assessment and investigations was to evaluate future environmental liability and establish ball-park remediation costs associated with the divestiture of the power plants. Duties included peer review and oversight management of site characterization, soil and groundwater sampling, well installation, data analysis work plan preparation, QA/QC coordination, field activities, aquifer testing, water supply studies, and groundwater and fate and transport modeling of site data for risk assessment and remediation cost estimates and analysis. Served as the hydrogeological expert in meetings with power plant's senior staff and outside legal counsel to discuss groundwater related issues associated with the divestiture of the power plants.

Pacific Gas & Electric, Contra Costa Power Plant, Pittsburg Power Plant, Potrero Power Plant, and Geysers Power Plant Remedial Investigations – Northern CA (Principal Hydrogeologist: 1997 – 1998)
Provided senior peer review, direction, and oversight of hydrogeological investigations (site characterization, fate and transport modeling, aquifer testing) during the Phase II Site Assessments conducted at the Potrero Power Plant, Contra Costa Power Plant, Pittsburg Power Plant, and Geysers Power Plant. The purpose of the assessment and investigations was to evaluate future environmental liability and establish ball-park remediation costs associated with the divestiture of the power plants. Duties included peer review and oversight of site characterization investigations at the four power plants and coordination with the principal remediation engineer and risk assessor to evaluate the feasibility of various remediation approaches.

GTE, Soil Gas and Indoor Air Intrusion Investigation – Mountain View, CA (Principal Hydrogeologist: 2004 – 2006)
Served as the Project Manager for a subsurface investigation to evaluate the potential threat of indoor air intrusion from VOC vapors from a TCE plume in groundwater. Developed a work plan to investigate and characterize the extent of the groundwater plume and threat of indoor vapor intrusion. Over 120 soil gas samples were collected from permanent and temporary soil gas probes and correlated to indoor air samples and groundwater samples. Vapor intrusion modeling was completed to evaluate the potential for vapor migration to the residences. Presented the findings to staff from EPA Region 9 and the local homeowner's association and the community.

Santa Clara County, Monitored Natural Attenuation Study – Santa Clara, CA

(Principal Hydrogeologist: 2003 – 2005)
Served as the principal hydrogeologist for the Oakmead Parkway project in Santa Clara. Groundwater at the site was impacted by VOCs (primarily TCE and DCE). He provided peer review and technical direction for a study to evaluate and provide evidence of natural attenuation of the VOC plume. The findings of the study were presented to SF-RWQCB staff with a recommendation to reduce the groundwater monitoring program; the regional board staff accepted the recommendation and approved no further action for the site other than long-term monitoring.

Pacific Gas & Electric, Oakland Power Plant, Site Characterization – Oakland, CA (Senior Hydrogeologist: 1997)
Conducted aquifer tests and evaluated hydrogeological data, and evaluated status of former deep production wells. He completed fate and transport modeling to determine remedial alternatives and cost estimates prior to power plant divestiture.

ITT, Remedial Investigation – San Diego, CA (Project Manager: 1999)
Served as the project manager at a former manufacturing facility in the Port of San Diego. Shallow groundwater at the site was impacted with TCE. He supervised a field investigation utilizing the Waterloo Profiler to delineate the lateral and vertical extent of the TCE plume. Using direct push technology, samples were collected every three feet at varying depths and immediately analyzed for VOCs with a mobile lab. Within a three-week period, the TCE plume was delineated. Prepared a work plan to implement in-situ chemical oxidation to remediate the plume.

Walden Center Dry Cleaner, Remedial Investigation – Walnut Creek, CA (Senior Hydrogeologist: 1999)
Evaluated site conditions and indicators of monitored natural attenuation at a former dry cleaner site that had PCE-impacted groundwater. He completed a fate and transport model to determine PCE plume migration under MNA conditions.

Honeywell, Groundwater Monitoring and Remediation – Santa Clara, CA (Senior Hydrogeologist: 1996 – 1998)
Provided technical oversight and peer review for groundwater monitoring program at a Federal Superfund site in Santa Clara. The site was impacted by VOCs (primarily TCE). Current groundwater remediation includes groundwater extraction and treatment with air strippers.

Borden Chemical Facility, Groundwater Monitoring and Remediation – Fremont, CA (Senior Hydrogeologist: 1997 – 1998)
Provided the technical oversight and peer review for groundwater monitoring and remediation programs at site in Fremont with groundwater impacted with VOCs including review of groundwater monitoring program, quarterly reports, and corrective action reporting.

Ozol Defense Fuel Supply Depot, Remedial Investigation and Aquifer Testing – Martinez, CA (Senior Hydrogeologist: 1996 – 1997)
Provided technical oversight and peer review for groundwater monitoring and remediation program at a fuel storage site in Martinez. He completed aquifer tests in order to evaluate plume migration and expand the remediation system.

Multiple Clients, Phase 1 Environmental Site Assessments – Multiple Northern CA Locations (Project Manager: 1996 – 1999)
Supervised staff level personnel in the completion of over 30 Phase 1 environmental site assessments in Northern California for TriNet Corporation, Federal Realty Trust, Jiffy Lube, and General Motors Corporation. He oversaw the quality control of the site assessment reports to maintain requirements of ASTM standards.

Laidlaw Transit, Remedial Investigation – San Francisco, CA (Project Hydrogeologist: 1997)
Characterized subsurface petroleum hydrocarbon contamination at a Laidlaw Company maintenance yard in San Francisco. He evaluated analytical data to determine the extent of the plume and completed a RBCA analysis to determine feasibility of achieving risk-based closure for the site.

Shell Oil, California UST Compliance Auditing – Multiple CA Locations (Senior Hydrogeologist: 1996)
Developed a strategy for meeting California State and County regulatory requirements for Shell Oil retail service stations. He researched and prepared a summary of statewide regulations for monitoring and closure of UST facilities.

Mobil, Southland Oil, Soil and Groundwater Remediation – Multiple CA Locations (Project Manager: 1992)
Managed the characterization and remediation of impacted soil and groundwater at eight Mobil and Southland Oil retail petroleum sites in Northern California. He provided technical management and oversight of subsurface investigations, monitoring well installation, slug testing, groundwater monitoring, and site remediation using SVE and groundwater extraction and treatment through the use of carbon adsorption or air strippers.

J.H. Baxter, Groundwater Monitoring and Remediation – Weed, CA (Senior Hydrogeologist: 1991 – 1992)
Provided technical oversight and peer review for groundwater monitoring and remediation program at a Federal Superfund site in Weed under the guidance of EPA Region IX. The wood treatment facility was impacted by creosote, pentachlorophenol, arsenic, and chromium. His responsibilities included technical review of groundwater monitoring and remediation systems and evaluation of long term remedial alternatives. Responsibilities also involved senior peer review of consultant's reports for EPA under TES contract; he reviewed remedial design

reports and recommended remedial actions for groundwater cleanup to EPA.

Williams Air Force Base, Aquifer Testing – Phoenix, AZ (Project Hydrogeologist: 1992)
Conducted two 72-hour aquifer tests, analyzed the aquifer test data, and reported data results for a HAZWRAP remediation project at Williams Air Force Base in Phoenix, Arizona. Results of the aquifer testing were used to design horizontal well remediation system for jet fuel remediation.

Penn Mine, Aquifer Testing and Water Quality Assessment – Calaveras County, CA (Project Hydrogeologist: 1992)
Managed a hydrogeologic investigation at a former copper mine in Calaveras County to evaluate acid mine drainage and the potential for plume migration. The investigation included the collection of groundwater samples and completion of aquifer testing and data interpretation.

Castle Air Force Base, Remedial Investigation – Merced, CA (Project Manager and Senior Hydrogeologist: 1991)
Managed groundwater investigations to characterize and remediate TCE plume. He designed and supervised the long-term groundwater monitoring program, groundwater modeling studies, landfill monitoring, QA/QC programs, and other related groundwater investigations. Mr. Maslonkowski reviewed and approved subcontractor work plans and staff reports including Hydrogeological Assessment Reports, sampling plans and waste management plans. He also led monthly discussions with the Air Force, EPA, DTSC, and CVRWQCB.

Lockheed, Remedial Investigation and Remediation – Palo Alto, CA (Project Hydrogeologist: 1991)
Managed groundwater monitoring and remediation program at the Librascope site, a state Superfund site in Palo Alto in order to evaluate, characterize, and remediate a TCE plume. He conducted two 72-hour aquifer tests, analyzed data, and reported results. Mr. Maslonkowski reviewed groundwater sampling practices and recommended data acquisition, data analysis and quality control procedures. He evaluated existing groundwater data and assessed the need for further action, and assisted in the writing of RI/FS report for the site.

La Gloria Refinery, Site Characterization – Tyler, TX (Project Hydrogeologist: 1991)
Completed a technical peer review of consultant's reports related to site investigation and a petroleum hydrocarbon remediation system at an oil refinery in eastern Texas. He reviewed boring logs, geologic cross sections, isopach maps, water level and water quality data. He made recommendations for further work to be conducted.

Port of Richmond, Monitoring Well System Design - Richmond, CA (Project Hydrogeologist: 1991)
Designed and installed a monitoring well system at the Port of Richmond. He directed subcontractors using hollow-stem auger and air rotary-casing hammer drilling rigs to install eight monitoring wells at a former ship scrapping yard to determine groundwater contamination by heavy metals, PCBs, and hydrocarbons. Mr. Maslonkowski supervised all geologic logging and health and safety operations (level C) at the site. He also reviewed and interpreted the project data and wrote a technical report.

NASA-Ames Facility, Moffett Field Air Base, Remedial Investigation – Mountain View, CA (Project Hydrogeologist: 1991)
Completed a remedial investigation to characterize impacted soil and to define the extent of a dissolved-phase TCE plume in groundwater at the NASA Ames Research Facility and the adjacent Moffett Field Air Base. The field investigations included installation of 14 monitoring wells, a soil gas survey, and aquifer testing.

Chevron USA, Injection Well Rehabilitation – El Segundo, CA (Project Hydrogeologist: 1990)
Supervised a drilling contractor in the completion of an injection well rehabilitation program at the Chevron El Segundo Refinery. Rehabilitation included acidification of over five injection wells; work was completed under Level B conditions.

Litigation Support and Water Rights

Latham & Watkins LLP, Due Diligence Evaluation – Multiple CA Locations (Principal Hydrogeologist: 2006)
Reviewed historical documents and completed an assessment of environmental liabilities and future remediation costs for five laboratory testing facilities in California and the Midwest, as part of a potential real estate property transfer.

Union Pacific Railroad, Litigation Support/Cost Recovery – Former West Coast Metals Site, Santa Rosa, CA (Principal Hydrogeologist: 2005 – 2006)
Hired as an un-retained hydrogeology expert during a motion for summary judgment associated with a multi-plaintiff lawsuit and provided a deposition during the litigation process. In addition, he supported legal counsel with data analysis and review. Mr. Maslonkowski also supported attorneys with cost recovery efforts by an outside law firm against the former site operators.

Mountain View Power Company, Litigation Support/Water Rights/CEQA Permitting – San Bernardino, CA (Senior Project Manager and Principal Hydrogeologist: 1999 –2005)
Served as the expert hydrogeologist for groundwater supply issues and was a consultant to Thermo Ecotek, AES, and Southern California Edison (from 1999 through 2005) during the licensing and expansion of the 1,056-megawatt Mountain View Power Plant. Served as the groundwater expert during the application for certification (AFC) hearing process with the California Energy Commission for power plant approval and supported power plant attorneys during the licensing and evaluation process.

Groundwater Resources Evaluations

Mountain View Power Company, Groundwater Supply Study – San Bernardino, CA (Project Manager: 1999 – 2005)
Conducted an investigation to examine the future groundwater demand for two power generation plants and evaluated the potential source of water needed for power plant startup. The investigation included an evaluation of on-site deep well production capabilities, use of water from a local water agency, completion of a well canvass, review of other regional groundwater production wells. He also conducted a long-term aquifer test on individual production wells to determine sustained well yield and long-term impact to municipal wells in the vicinity of the plant.

Groundwater Basin Study – Byron, CA (Project Hydrogeologist: 1998)
Coordinated the completion of a study for a groundwater sub basin in the Brentwood area to evaluate the beneficial use of groundwater for municipal, domestic, and agricultural supply. He evaluated groundwater quality data, hydrogeologic data, water use, and completed a water budget for the basin.

Weyerhaeuser, Groundwater Supply Assessment – Coos Bay, OR (Project Hydrogeologist: 1997)
Completed a groundwater availability study for a Weyerhaeuser Paper Company mill near Coos Bay, Oregon to determine the location of a 3.5-mgd industrial water well field. He evaluated existing hydrogeologic data, water level data, water quality data, and geophysical logs and recommended locations for new wells. Mr. Maslonkowski developed a work plan and cost estimates for test well construction and design, and aquifer testing.

Oakley Water District, Municipal Well field Feasibility – Oakley, CA (Project Hydrogeologist: 1992)
Completed a feasibility study for the Oakley Water District to evaluate various locations and production well designs for a new municipal production well. He evaluated hydrogeology, groundwater quality, and existing well yield data and made recommendations for well field location.

Private Party, Groundwater Supply Assessment – Napa, CA (Project Hydrogeologist: 1990)
Completed a preliminary assessment of groundwater availability for domestic water well near a golf course in Napa, California. He evaluated regional groundwater elevation and water quality data, production well information, and hydrogeological data. Mr. Maslonkowski developed a site conceptual hydrogeologic model of the area and provided estimates of well production and aquifer yield for domestic water supply.

Alameda County Flood Control District, Stream Recharge Study – Alameda County, CA (Project Hydrogeologist: 1984 – 1989)
Managed the operations of a stream recharge program to augment water supply through the percolation of surface water released from a local reservoir into a number of stream channels. He oversaw a staff that monitored the recharge program and estimated monthly volumes of recharged water. In addition, Mr. Maslonkowski managed surface water rights issues for county water agency.

Groundwater Flow, Fate & Transport Modeling

Stanley Works Tool Facility, Flow and Transport Model – Milwaukie, OR (Senior Hydrogeologist: 2001)
Provided senior peer review of a fate and transport model for a former manufacturing facility with TCE-impacted groundwater. He reviewed the WinTran and ASM model output, and made recommendations for additional modeling.

American Microsystems, Flow and Transport Model – Santa Clara, CA (Senior Hydrogeologist: 2000)
Developed and managed a three-dimensional groundwater flow and transport modeling project using MODFLOW/MT3D to determine optimal extraction well placement to remediate a TCE plume at a semiconductor facility in Santa Clara, California. He evaluated the potential for natural attenuation and incorporated the results into the model. Mr. Maslonkowski developed and calibrated the model, and completed predictive simulations to evaluate various pumping scenarios and well field design.

Boeing, Groundwater Modeling – Neosho, MO (Modeler: 1997 – 1998)
Developed a two-dimensional groundwater flow model using FLOWPATH for a former Boeing rocket engine testing facility in Neosho, Missouri to evaluate the design of an interceptor trench and groundwater extraction system. The site overlies a karst bedrock aquifer impacted by TCE. He also provided peer review for aquifer test design and monitoring well design.

Chevron USA, Natural Attenuation Modeling – Ventura, CA (Modeler: 1998)
Completed fate and transport modeling using BIOSCREEN model to evaluate the potential for natural attenuation of benzene in groundwater at a former service station in Ventura.

Nestle USA, Flow and Transport Model – Ripon, CA (Senior Hydrogeologist: 1998)
Developed and managed a large three-dimensional fate and transport modeling project using MODFLOW/MT3D to evaluate the impact to municipal wells from a TCE plume at an industrial facility near Ripon, California. He constructed and calibrated the model to simulate current pumping conditions and completed predictive simulations to optimize the current extraction system and evaluate proposed extraction wells, treated water re-injection and municipal well impact.

Quaker Oats, Natural Attenuation Modeling in Support of Site Closure – Manteca, CA (Project Manager: 1997)
As the project manager for a groundwater remediation project for Quaker Oats, completed fate and transport modeling using BIOPLUME II model to evaluate the potential for natural attenuation of petroleum hydrocarbons (benzene) at a former manufacturing facility in Manteca. He presented findings to regulatory agency and received closure of the site.

Federal Realty Trust, Natural Attenuation Modeling – San Jose, CA (Modeler: 1997)
Completed fate and transport modeling using BIOSCREEN and SESOIL models to evaluate the potential for natural attenuation of a PCE plume in the vadose zone and groundwater at a former dry cleaner site in San Jose.

IT Corporation Vine Hill Complex, Flow Modeling for Remediation System – Martinez, CA (Senior Hydrogeologist: 1995)
Developed a groundwater flow modeling using MODFLOW to evaluate remedial design scenarios for an interceptor trench and slurry wall surrounding an engineered landfill proposed for a former hazardous waste landfill.

IT Corporation Panoche Class I Landfill, Flow Modeling for Remediation Design – Benicia, CA (Senior Hydrogeologist: 1995)
Developed a groundwater flow model to evaluate the effectiveness of a 60-foot soil and bentonite slurry cutoff wall installed down gradient of the facility and to evaluate future operations of the groundwater recovery system upgradient of the cutoff wall.

Landfill Monitoring and Remediation

IT Corporation, Panoche Class I Landfill – Benicia, CA (Project Manager: 1992 –1996)
Managed hydrogeologic investigations and groundwater remediation at the Panoche facility in Benicia, California. The Panoche facility is regulated under RCRA, and is one of the largest RCRA facilities in California consisting of two landfills, four waste piles, 46 surface impoundments, and five drum burial areas. He also provided technical direction for managing hydrogeologic issues related to the facility's landfill closure, EIR process and regulatory negotiations for landfill

closure plan and post-closure monitoring programs with State agencies. Mr. Maslonkowski conducted additional investigations at this site including a surface geophysical survey consisting of two electromagnetic ground conductivity surveys to better define structural control of bedrock unit and effects of faulting on plume migration. He addressed concerns of the state related to seismic issues and landfill stability at the facility.

Managed the facility's evaluation monitoring and corrective action monitoring program that involved monitoring and sampling of over 120 wells, surface water monitoring, and leachate collection systems. He supervised statistical analysis to evaluate trends in groundwater quality and evaluate corrective measures. Mr. Maslonkowski evaluated landfill stability by monitoring data from a series of inclinometers and piezometers. He supervised the design of an interceptor drain system to collect impacted groundwater from toe of landfill.

IT Corporation, Vine Hill Complex Class I Landfill – Martinez, CA (Project Manager: 1992 – 1996)
Managed all aspects of groundwater and surface water investigations and remedial investigations for the Vine Hill Complex in Martinez, California. The 40-acre Class I facility recently received state approval for closure as the first major facility in California to close operations under RCRA guidelines. The site consisted of surface impoundments and unlined landfills containing industrial and municipal wastes overlying bay muds and a few bedrock outcrops. He directed bedrock characterization investigation that consisted of exploratory borings, monitoring well installation, borehole geophysical surveys (heat pulse flowmeter, caliper, and spontaneous potential), packer testing, and contaminant transport modeling. Mr. Maslonkowski developed detection monitoring and evaluation monitoring plans for the facility and negotiated reduction in monitoring wells and sampling frequency for post-closure monitoring program. He responded to Notice of Violations and Comprehensive Groundwater Monitoring Evaluation brought on by DTSC. Mr. Maslonkowski evaluated options for dewatering during landfill construction and design of landfill cap and evaporation basin. He prepared and reviewed hydrogeologic portion of the site's RFI work plan and CMS reports.

IT Corporation, Benson Ridge Class II Landfill – Lake County, CA (Project Manager: 1992 – 1996)
Managed groundwater investigations and remediation for the 25-acre Benson Ridge facility and landfill in Lake County, California. The facility, regulated under RCRA, is underlain by perched groundwater overlying fractured volcanic bedrock. The perched zone is impacted by dissolved metals from landfill operations and is isolated from the regional aquifer by over 200 feet of unsaturated bedrock. He supervised the drilling of three deep monitoring wells to characterize water quality in the perched aquifer. Mr. Maslonkowski evaluated the effectiveness of leachate collection system, vadose zone monitoring system, and designed groundwater extraction well. He managed the detection monitoring program for the regional aquifer and corrective-action monitoring program for the

perched water-bearing zone. Mr. Maslonkowski also negotiated with state regulatory agencies to get reductions in monitoring frequency and parameters.

IT Corporation, Montezuma Hills Class II Landfill – Rio Vista, CA (Project Manager: 1992 – 1996)
Managed hydrogeologic investigations, groundwater remediation, and post-closure monitoring programs for the Montezuma Hills Facility in Rio Vista, California. The 55-acre Class II hazardous waste landfill regulated under RCRA was closed in 1990 and is monitored by a system of over 120 wells and piezometers. He also negotiated post-closure monitoring programs consisting of corrective action monitoring with Central Valley RWQCB. Mr. Maslonkowski managed and evaluated groundwater control and water management system consisting of a slurry wall, seven interceptor trenches, two LCRS systems, and evaporation basins.

City of Portland, Statistical Analysis of Landfill Data – Portland, OR (Project Hydrogeologist: 1990)
Conducted a study to evaluate groundwater quality data for an inactive municipal landfill in Portland. He used statistical analysis of water quality data to show that the landfill had not impacted shallow aquifer beneath the landfill.

Municipal Landfill, Landfill Cap Design – Eagar, AZ (Senior Hydrogeologist: 1998)
Oversaw the modeling of a landfill cap design for a small solid waste landfill near Eagar, Arizona. Various landfill caps were simulated using the HELP model to determine leachate production through the cap and to evaluate landfill closure scenarios.

SPECIALIZED TRAINING

- Supervisor Training, December 2006
- Business Development Training, 2002 and 2004
- Project Team Leader Training, 1998
- Intermediate Contaminant Hydrogeology Course, February 1995
- Project Management Training, 1994
- Managing Government Contracts Training, March 1994
- Total Quality Management Training, September 1992
- Groundwater Plume Management Seminar, March 1992
- UC Berkeley Extension Certificate in Hazardous Materials Management (included 240 hours of training in risk assessment, toxicology, environmental law, groundwater modeling, and remediation systems), 1992
- Aquifer Testing Seminar, May 1990
- Forty-Hour OSHA Health and Safety Training, April 1990
- NWWA Corrective Actions for Containing and Controlling Groundwater Contamination Course, September 1989

- NWWA Groundwater Treatment Technologies Course, June 1989

PROFESSIONAL AFFILIATIONS

- Association of Groundwater Scientists and Engineers
- Association of Engineering Geologists
- International Association of Hydrogeologists
- California Groundwater Resources Association

SELECTED PUBLICATIONS AND PRESENTATIONS

Maslonkowski, D., B. Tossell (primary author), G. Ng et al, "*Successful In-Situ Bioremediation of Hexavalent Chromium in the Mojave Desert*", *Battelle In-Situ Conference*, May 2006; also served as moderator for the chromium remediation session at the conference.

Maslonkowski, D., B. Tossell (primary author), B., G. Hickman, "*Comparative Results of In-Situ Chemical and Biological Reduction of Hexavalent Chromium*", *Battelle In-Situ Conference,* May 2005.

Maslonkowski, D. "*Criteria for Evaluating the Effectiveness of Enhanced Reductive Dechlorination at Sites in the San Francisco Bay Area*", presented at the California Groundwater Resources Association Symposium on Characterization and Remediation of Recalcitrant and Emerging Contaminants, San Jose, CA, June 2001.

Maslonkowski, D. "*Internet and PC Applications for Consultants*", Instructor for 1-day short course presented to the Southwest Section of the Association of Engineering Geologists, Las Vegas, NV, March 1999.

Maslonkowski, D. "*Internet Applications for Geologists and Geotechnical Engineers*", Instructor for 1-day short course presented to the San Francisco Section of the Association of Engineering Geologists, Martinez, CA, January 1998.

Maslonkowski D., N. Spycher, P. Kelsall, and M. Unruh. "*Bedrock Characterization and Potential for Migration of DNAPL at IT's Vine Hill Facility*", Proceedings, IT Technology Exchange Symposium. Presented paper at IT Symposium in Scottsdale, AZ, 1995.

Maslonkowski, D. "*Personal Computers in Hydrology*", Instructor for short course presented to the San Francisco Section of the Association of Engineering Geologists 29th Annual Meeting, San Francisco, CA, 1986.

Maslonkowski, D. *Hydrogeology of the East Bay Plain Groundwater Basin*, Alameda County, Master's Thesis, San Jose State University, 1986.

Maslonkowski, D. *Groundwater in the San Leandro and San Lorenzo Alluvial Cones of the East Bay Plain*, Alameda County, Alameda County Flood Control & Water Conservation District, June 1984.

HONORS AND AWARDS

- International Technology Corporation, "National Quality Award for Outstanding Achievement and Contribution to Quality – 1994", received for remediation and cleanup activities at four Class I landfill sites, 1994
- Groundwater Resources Association of California, "Tribute of Appreciation for Outstanding Dedication to the GRA", 2000