CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

May 16, 2007

DOCKET
06-AFC-9
DATE MAY 16 2007
RECD. MAY 16 2007

Mr. Andy Welch, Vice President
Competitive Power Ventures
8403 Colesville Road, Suite 915
Silver Spring, MD 20910

Dear Mr. Welch:

PROJECT DESCRIPTION DATA REQUESTS 117 THROUGH 125 FOR THE COLUSA GENERATING STATION (06-AFC-9)

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff is asking for the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

This second set of data requests (#117-125) is being made in the area of Project Description. Written responses to the enclosed data requests are due to the Energy Commission staff on or before June 15, 2007, or at such later date as may be mutually agreeable.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, you must send a written notice to both Commissioner John L. Geesman, Presiding Committee Member for the Colusa Generating Station project, and to me, within 20 days of receipt of this notice. The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 653-0062, or email at jcaswell@energy.state.ca.us.

Sincerely,

Jack Caswell, Project Manager
California Energy Commission

Enclosure
cc: Dockets 06-AFC-9

PROOF OF SERVICE (REVISED 5/16/07) FILED WITH
MAILED FROM SACRAMENTO ON 5/16/07

COLUSA GENERATING STATION
(06-AFC-9)
DATA REQUESTS

Technical Area: Project Description
Author: Jack W. Caswell

WESTERN AREA POWER ADMINISTRATION RECONDUCTORING

BACKGROUND

As a result of discussions with the Western Area Power Administration (Western) regarding the need for upgrading Western's Shasta-Flanagan-Keswick transmission line, staff needs additional information for analyzing the entire project. Our request for information will allow staff to fully understand the impacts of the Colusa Generating Station (CGS) to Western's transmission system, which may occur as an indirect result of the Energy Commission's approval of the CGS project.

Staff has provided preliminary information requests to URS related to the Western transmission system upgrade which will require line reconductoring. On April 24, 2007, URS responded with some partial information and informed staff that additional information is required on the reconductoring of the Shasta-Flanagan-Keswick 230 kV transmission line. URS has proposed to provide this information prior to publication of the Final Staff Assessment. To assist URS in the identification of the additional information needed, staff has prepared the following data requests.

117. Please provide recent aerial photographs (less than 5 years old) and topographic maps of the applicable line segments (i.e., the segments that would be replaced) with the transmission towers plotted on the photographs.

118. Please identify any sensitive habitats along the route by examining aerial photographs, conducting site visits, searching available databases (such as the California Natural Diversity Database) and literature searches, and other available information.

119. Please provide legible map(s) depicting biological resources (habitat, nesting areas, etc.) within 500 feet of the outside edges of the right-of-way for the transmission line route.

120. Please identify known cultural resource sites within ½ mile of the route based on a California Historic Resource Information System literature search and contact with the Native American Heritage Commission. This information should be provided as a legible map depicting the cultural sites and must be submitted under confidential cover.

121. If any portion of the line is more than 45 years old:

    a. Please describe any modifications/upgrades made previously.

    b. Provide any information indicative of the historic significance of the existing transmission line segment to be reconductored.

122. If an existing substation is more than 45 years old and needs to be modified as a result of the proposed project:

a. Please describe any modifications/upgrades made previously.

b. Provide any information indicative of the historic significance of the existing substation.

123. Please provide legible map(s) showing existing land uses within 500 feet of the outside edges of the right-of-way, including identification of any school, hospital, daycare center, other sensitive receptors, and residential and commercial areas.

124. Please identify any agency or other interested party with jurisdiction or permit approval authority over any part of the reconductoring project.

125. In general, please provide facts to support conclusions about the potential for impacts and feasible mitigation, including impact avoidance measures.

Additionally, staff is providing an example of data responses from a previous project with potential reconductoring impacts. This example is intended to help URS with respect to the level of information needed in their data responses for staff to fully understand the potential impacts from the proposed reconductoring.

August 22, 2002

Mr. Matthew Trask
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814

RE: Data Response, Set 3
San Joaquin Valley Energy Center (01-AFC-22)

On behalf of the San Joaquin Valley Energy Center, LLC, please find attached 12 copies and one original of the Data Responses, Set 3, in response to Staff's letter dated May 7, 2002, requesting additional information regarding transmission system engineering and the potential for reconductoring three transmission line segments.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Principal Project Manager

c: Mike Argentine/WRO
Tom Lagerquist/Peregrine

SAN JOAQUIN VALLEY ENERGY CENTER (01-AFC-22)

DATA RESPONSE, Set 3

(Transmission System Engineering Reconductoring Analysis)

Submitted by

San Joaquin Valley Energy Center, LLC

August 22, 2002

CH2MHILL

2485 Natomas Park Drive, Suite 600
Sacramento, California 95833-2937

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Figures

1.0 Introduction

This document presents a general assessment of the potential environmental effects of reconductoring the Helm-Panoche and Helm-Kearney 230 kV transmission lines. It has been prepared in support of the Application for Certification (AFC, 01-AFC-22) for the San Joaquin Valley Energy Center (SJVEC) before the California Energy Commission (CEC). The AFC for the SJVEC analyzed the potential environmental effects of the project up to the first point of interconnection with the electrical transmission system, at the Pacific Gas & Electric Company (PG&E) Helm Substation near the City of San Joaquin, California. The scope of the AFC analysis was consistent with the CEC's licensing jurisdiction extending, under Public Resource Code Section 25107, to the first point of interconnection between an electrical generating project and the electrical transmission system.

The three lines of concern are the Project to Panoche line, the Helm to Panoche line, and the Project to McMullin to Kearney line, all of which are rated at 230 kV. The Helm-Panoche transmission line extends westward and northwestward from the Helm Substation to the Panoche Substation (see Biological Resources and Land Use, Tiles 1 through 4, all figures are at the end of this report)

This document presents a general assessment of the potential environmental effects of reconductoring a portion of the 230-kV electrical transmission lines that run from the Panoche substation to the Helm substation (adjacent to the proposed San Joaquin Valley Energy Center site); and from the Helm substation to the Kearney substation (see Tiles 4 through 7).

This analysis was prepared to assist the CEC Staff in their independent analysis of the potential effects of SJVEC. The CEC Staff has indicated that the reconductoring of the Helm-Panoche and Helm-Kearney transmission lines are a reasonably foreseeable indirect consequence of constructing the SJVEC. Therefore, this environmental analysis has been prepared as an addendum to the SJVEC AFC to satisfy the requirements of the California Environmental Quality Act (CEQA).

The level of analysis presented in this document is more generalized and programmatic than found in an AFC or Environmental Impact Statement, and focuses only on environmental issues that are a likely consequence of reconductoring. This analysis is intended to apprise decision-makers of the nature and scope of the probable impacts of the reconductoring, should it occur, and the currently anticipated measures for mitigating these effects.

This analysis describes the process of reconductoring and the types of environmental impacts that might occur as a result of reconductoring. Project-specific details regarding the locations of the pull and tensioning sites and marshalling yards and the specific techniques that will be used for each span, however, will not be available until a project to reconductor is determined necessary and is designed. The reconductoring project, if it takes place, could be accomplished with no significant environmental impacts. However, standard measures to lessen or completely avoid impacts are suggested where warranted.

2.0 Project Description

The Helm to Panoche transmission line carries a single 230 kV electrical circuit between the Helm Substation, located near the City of San Joaquin, Fresno County and the Panoche Substation, located in Panoche, Fresno County, California, a distance of 19.6 miles (Tiles 1 to 7). This line begins at the Helm Substation, and runs westward across intensively cultivated fields parallel to Manning Avenue, before crossing the San Luis Canal of the California Aqueduct. Approximately 2.5 miles west of the California Aqueduct, the line turns northwestward and continues across orchard lands and agricultural fields for approximately4.6miles before reaching the Panoche substation. The total length of the line Panoche - Helm 230 kV line is approximately 25 miles.

The Helm-Kearney transmission line carries a single 230 kV. It runs directly east for 15.8 miles, crossing intensively cultivated agricultural fields, as well as the James Bypass just past Raisin City before turning north 7.0 miles and east 0.8 miles. The final 2 miles crosses the wastewater treatment plant ponds for the Fresno Wastewater Plan.

2.1 General Installation Methods and Procedures

The following sections provide a general description of the construction methods employed for a typical reconductoring project. The purpose of the description is to establish a basis from which the range of potential environmental impacts of the project can be determined.

Reconductoring involves the replacement of existing electrical transmission wire (conductor) with new wire. To make this replacement, the old conductor must be pulled back through the existing transmission towers supports to a take-up reel. If the existing wire is in good condition, then it is also used to pull in the new conductor, by attaching the two together. Otherwise, the existing wire is used to pull a carrier cable, or sock line onto the tower sheaves. The new conductor is then pulled back through the same supports in the opposite direction from a pull and tensioning site at the other end of the stringing segment. In order for the old line to be reeled off of the towers, it must be first disconnected from its insulator clamps and placed on sheaves blocks (pulleys) or travelers that hang from the towers spars. The new line is pulled back through the sheave blocks. Workers then remove the new conductor from the sheaves and attach it to the structure. Typically, conductor is pulled for about two to three miles at a time.

Due to limits in the size of conductor reels, the reconductoring must be staged between tower sites that are called deadends. Deadends are towers where the line running in each direction is securely attached to, rather than passing through, the tower support. If deadends are too far apart or terrain interferes, shorter line segments may be chosen. Deadends are often placed at angle towers, where the lines change direction. If the inside angle formed by the transmission lines at an angle tower is large (generally larger than 30 degrees for a single suspension, 60 for a double suspension), the lateral tension of pulling the conductor or sock line on the sheave will be too high for safe and efficient reconductoring. The following generic description of a typical reconductoring process was

prepared for Calpine Corporation by Power Engineers, Inc. for the Gilroy Energy Center Phase II Project. It has been modified slightly to reflect the circumstances of the reconductoring anticipated for the San Joaquin Valley Energy Center Project.

2.1.1 Pull and Tensioning Sites

Because the potential for environmental impact is very low between the places where conductor pulling and tensioning takes place (pull and tensioning sites), this environmental analysis focuses particularly on the most likely places to be used for pulling and tensioning.

Activities between the pull and tensioning sites are generally restricted to: 1) accessing the towers (manually by climbing or using a truck-mounted aerial bucket) to place the pulleys, or sheaves blocks, through which the conductor is pulled once it is disconnected and to remove the conductor from the sheave blocks and refasten it once stringing is completed; and 2) work on the tower structure itself to repair or replace spars that are damaged. Under some circumstances, it is necessary to replace towers with stronger towers to accommodate heavier conductor or to raise the height of the towers to allow for greater conductor sag. For the subject reconductoring project, it will not be known whether or not towers will require raising or repair until the project is in the final design stages.

Though it is not possible to determine at this point precisely where the pull and tensioning sites would be located for a particular reconductoring effort, these are generally sited at angle towers, which are towers located where the line makes a change in direction of more than 10 degrees. Pulling old conductor off of the transmission line and reeling new conductor onto the line is easier at these locations because the pulling and tensioning equipment can be arranged in line with the transmission line in places where the line turns. Furthermore, pull and tensioning sites are necessary where there are high-angle turns because the conductor cannot be efficiently pulled through such an angle. However, since relatively few angle towers occur on the affected routes, pull stations may also need to be established between towers on straight runs. In that case, pull station sites will be established based on their convenient accessibility and lack of environmental or agricultural resources.

2.1.2 Temporary Staging Areas

Temporary staging areas for equipment and materials storage are required for any reconductoring project. The Helm-Panoche and Helm-Kearney lines, will each require a staging yard of about one acre in size at each of their terminal ends, plus an additional staging area located at the SJVEC site near the Helm substation. Marshalling yards would likely be located on agricultural fields next to the Panoche and Kearney Substations, and would be rented or leased for the four- to five-month construction period.

Concentrated work will be most likely to occur at some of the transmission tower deadend locations, many of these at angle towers. Conductor pulling, payout, and sagging/tensioning equipment will be stationed at some these locations. Each work area will be approximately 100 by 200 feet in size (0.46 acre). Work areas will avoid sensitive biological and cultural resources.

2.1.3 Pre-Marking / Environmental Survey of Right-of-Way

Environmentally sensitive areas in the right-of-way will be identified through agency consultation, existing data or field surveys. Areas requiring avoidance or special mitigation measures to be taken during reconductoring are located and marked on engineering drawings and in the field as appropriate.

2.1.4 Access

The project area consists of primarily of agricultural land uses. There are no cities along the transmission line, but the number of proximate farm houses, residences and landscape habitat types increases east of McMullin substation. Similarly the line crosses through an extensive area of industrial development on the south side of Kearney substation, as it crosses the Fresno Wastewater Treatment Plant Ponds. The transmission line routes are easily accessible via agricultural roads that are generally perpendicular to main paved roads such as Manning Avenue.

2.1.5 Installation and Tension Stringing

The "tension stringing" method is used most often to install new conductor. Following is a step-by-step description of reconductoring using tension stringing. The steps using other methods such as stringing without tension are similar.

- Splice locations will be determined before installation. The reel length then can be calculated to allow enough conductor for stringing and splicing.
- An approved line outage schedule will be developed before reconductoring activities commence. The outage schedule will provide periods when lines are de-energized to safely and efficiently perform the reconductor work.
- Equipment set-up locations would be established in advance of fieldwork. These locations are generally chosen for their ease of access, site suitability, and existing line configuration. Tension stringing is generally performed in the following steps:

    1. Install conductor support sheaves (pulleys) on towers
    2. Attach pulling line to old conductor
    3. Take up old conductor on reel
    4. Attach pulling line to new conductor
    5. Pull new conductor sections
    6. Sag new conductor and adjust to correct tension
    7. Attach new conductor to deadend tower
    8. Remove stringing sheaves and attach new conductor to insulators
    9. Restore right-of-way

2.1.6 Install Conductor Stringing Sheaves

Sheave blocks are installed on each structure. Linemen climb the structures or are lifted in aerial bucket trucks to attach the sheaves using the necessary hand tools and hardware. The existing conductor is removed from its clamps and placed into the stringing sheaves. If required, existing insulators would be removed and replaced as part of this operation.

On angle structures where one or two sheave assemblies are being used, care is taken to see that the sheave assembly is installed properly so the conductor will not jump out of its groove in the sheave and be damaged.

2.1.7 Attach Pulling Line to Old Conductor

The conductor is attached with Kellem grips of the appropriate size and firmly fastened to the pulling cable with screw type or punch clamps. The Kellem grip then is attached to a dummy swivel, which is, in turn, attached to a running board. The leading edge of the running board is attached to the pulling line with a full swivel.

2.1.8 Take Up Old Conductor

Pulling equipment generally includes a motorized puller, snubs (anchors), reel trailer, splicing equipment, and support equipment. The pulling site would be approximately 100 x 200 feet. A motorized retrieval unit with take-up reel is used to pull the old conductor off of the towers. Constant tension is applied to the conductor by the pulling equipment at each end. Either the new conductor or the sock line is used to supply back tension so that the old conductor does not sag or drop to the ground as it is pulled. Sheave blocks support the conductor until take up is complete.

At inclines or low points in a section, uplift rollers (which attach to the installation sheave wheel) or hold-down blocks (which are separate blocks) are used to counter the potential for the pulling line to lift up from the sheave at low points due to the pulling tension. These devices may also have a breakaway feature in the event of fouling or incorrect installation.

2.1.9 Attach Pulling Line to New Conductor

If the sock line (pulling line) was used, it is now attached to the new conductor (otherwise, the old conductor serves as the pulling line). To do so, a Kellem grip is attached to a dummy swivel, which then is attached to a running board. The leading edge of the running board is attached to the pulling line with a full swivel.

2.1.10 Pull New Conductor Sections

The new conductor is strung onto the towers using powered pulling equipment at one end and powered tensioning equipment at the other end. The tensioner in concert with the puller maintains proper tension on the conductor. Tension maintains clearance above any potential obstacles. Temporary structures may be installed at major road crossings and other locations requiring an extra measure of safety. These structures would help to ensure that proper clearance is maintained thus enhancing safety. Clearance is necessary to avoid potential damage to the conductor and any objects below the stringing operation.

Tensioning sites will be approximately 100 x 300 feet in size. Tensioner station equipment generally includes a take-up reel, bull wheel (tensioner), reel trailers, cranes, splicing equipment, trucks, tractors, and support equipment.

2.1.11 Sag New Conductor

After installation, the new conductor must be properly tensioned to reach the correct amount of sag between towers. Sag checks will be made at predetermined intervals to

assure proper sags and tensions between deadend towers. The correct sag and tension is dependent on a number of factors including span length, clearance requirements, and temperature.

Sagging is generally done with a tractor-mounted sagging winch. The winch is used to sag the line to approximate specifications. Hand-operated equipment, such as a sagging hoist, is then attached and the final sagging accomplished.

2.1.12 Attach New Conductor to Deadend

Deadends are installed at the first and last tower of any stringing section and on vertical or horizontal angles that are too great for suspension clamp. Suspensions or double suspensions are used at all other towers. The maximum angles for single and double suspensions are 30 degrees and 60 degrees, respectively.

2.1.13 Remove Stringing Sheaves, Attach New Conductor to Insulators

Linemen remove the sheave blocks from each structure. The new conductor is then attached to the insulators using appropriate hardware. Linemen climb the structures or are lifted in aerial bucket trucks to remove the sheaves using the necessary hand tools.

2.1.14 Restore Right-of-way

Right-of-way cleanup would occur after reconductoring activities are complete. Project-related debris would be removed from the right-of-way and disposed of at an appropriately licensed facility. The appropriate land management agency and landowner(s) would approve these locations. Ruts and other similar disturbances would be smoothed. Any areas requiring revegetation would be seeded with a weed-free seed mix approved by the appropriate land management agency and landowner(s).

2.1.15 Splicing

Consecutive stringing sections must be spliced together to form an uninterrupted electrical path. Several methods are available to splice the conductor. Allowance must be made for splicing when selecting reel lengths in advance of installation considering access and when cutting the conductor after pulling.

2.1.16 Typical Equipment

The equipment used in reconductoring includes a tensioner and cable puller. These vehicles are large, 10-wheel trucks designed for heavy loads. Tensioners also may be mounted on a trailer. A conductor-cable reel trailer will be used with each tensioner setup location. Reels may also be mounted on a boom truck. Aerial bucket trucks can be effective support vehicles.

Depending on the nature of the project, a helicopter can be used to string the sock line and transport workers and materials to the structures. Helicopter reconductoring methods have proven highly effective where access is difficult or in areas where impacts from access create concern.

Vehicles used for the proposed project will be similar to the types currently used to build and maintain similar existing lines.

2.1.17 Fences, Other Improvements, and Existing Land Uses

Reconductoring crews must protect all fences and other improvements and all public survey monuments found within or adjacent to the right-of-way. Survey monuments include but are not limited to General Land Office and Cadastral Survey Corners; reference corners; witness points; U.S. Coastal and Geodetic benchmarks and triangulation stations; military control monuments; and recognizable civil (both public and private) survey monuments. Where monuments or references are obliterated during operations, reconductoring crews must secure the service of a registered land surveyor or a staff cadastral surveyor to restore the disturbed monument according to procedures found in the latest edition of the Manual of Surveying Instructions for the Survey of the Public Lands of the United States.

2.1.18 Work Force

Typical conductor stringing crews require 15 to 20 workers, which include foremen, equipment operators, general laborers, environmental monitors and inspectors. Each cable stringing operation requires three to five pieces of equipment and support vehicles. The entire reconductoring project will take approximately 4 to 5 months, overall. The project would probably be undertaken during times of relatively low electrical demand to protect system reliability while the lines are taken out of commission. This may mean that the project would take two seasons to accomplish.

2.2 Typical Mitigation Measures

Reasonable measures will be taken to reduce impacts to the environment. Vegetation clearing and trimming will be kept to the minimum necessary for safe construction, operation and maintenance of the line. Dragging and whipping of conductors and sock lines will be avoided to further minimize vegetation and ground disturbance. Use of materials labeled as potential pollutants will be minimized to the extent practicable. Where possible, use of potential pollutants that could ooze, drip, flake, or crumble will be avoided in and around wetland areas.

Table 1 is a list of typical mitigation measures. Thoughtful application of these measures, singly or in combination, will help to minimize or eliminate impacts associated with the project. Other mitigation measures (in addition to those listed in the AFC) either generic or site/species specific, may be identified as more specific engineering and environmental information is developed and analyzed.

TABLE 1
Typical Reconductoring Environmental Mitigation Measures

1. All project-related vehicle movement outside the right-of-way normally will be restricted to pre-designated access, contractor-acquired access, or public roads. Should unforeseeable circumstances occur during reconductoring that requires more areas than initially requested, the landowner must grant permission.
2. The areal limits of reconductoring activities normally will be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents will be applied to rocks or vegetation to indicate limits of survey or reconductoring activity.
3. Vegetation will be left in place wherever possible and original contour will be maintained to avoid root damage and allow for re-sprouting of existing vegetation.
4. If ground disturbance is necessary or where re-contouring is required, surface restoration will occur as required by the landowner or land management agency. The method of restoration normally will consist of removing and stockpiling topsoil and large rocks from disturbed areas to return temporarily disturbed areas back to original contours. Other methods include reseeding (if required), installing cross drains for erosion control, placing water bars in the road, and filling ditches.
5. Existing improvements will be repaired or replaced if they are damaged or destroyed by reconductoring activities to their condition prior to disturbance as agreed to by the parties involved.
6. Towers and/or ground wire will be marked with highly visible devices where required by governmental agencies (e.g., Federal Aviation Administration).
7. Prior to reconductoring, all supervisory personnel will be instructed on the protection of cultural, paleontological, and ecological resources. To assist in this effort, appropriate contracts will address: (a) federal, state, and tribal laws regarding antiquities, fossils, plants and wildlife, including collection and removal; (b) the importance of these resources and the purpose and necessity of protecting them.
8. Cultural resources will continue to be considered during project implementation. If necessary, pedestrian surveys will be performed to inventory and evaluate cultural resources within the project area and any appurtenant impact zones beyond the corridor, such as access roads and equipment yards. In consultation with appropriate land managing agencies and state historic preservation officers, specific mitigation measures will be developed and implemented to mitigate any identified adverse impacts. These may include plan modifications to avoid adverse impacts, monitoring of activities, and data recovery studies.
9. The project sponsors will respond to complaints of radio or television interference generated by the transmission line by investigating the complaints and implementing appropriate mitigation measures. The transmission line will be patrolled on a regular basis, so that damaged insulators or other transmission line materials, which could cause interference, are repaired or replaced.
10. The project sponsors will apply mitigation needed to eliminate problems of induced currents and voltages onto conductive objects sharing a right-of-way to the mutual satisfaction of the parties involved.
11. All activities will be conducted in a manner that will minimize disturbance to vegetation and drainage channels. All existing roads will be left in a condition equal to or better than their condition prior to reconductoring of the transmission line.
12. All requirements of those entities having jurisdiction over air quality matters will be adhered to and any permits needed for reconductoring activities will be obtained.
13. Fences and gates will be repaired or replaced to their original condition prior to plan disturbance as required by the landowner or the land management agency if they are damaged or destroyed by reconductoring activities. Temporary gates will be installed only with the permission of the landowner or the land management agency and will be restored to original condition prior to plan disturbance following reconductoring.

TABLE 1
Typical Reconductoring Environmental Mitigation Measures

14. A bundle configuration of conductors will be used to limit the audible noise, radio interference, and television interference due to corona. Tension will be maintained on all insulator assemblies to assure positive contact between insulators, thereby avoiding sparking. Caution will be exercised during reconductoring to avoid scratching or nicking the conductor surface, which may provide points for corona to occur.
15. No non-biodegradable debris will be deposited in the right-of-way.
16. Hazardous materials will not be drained onto the ground or into streams or drainage areas. Totally enclosed containment will be provided for all trash. All waste including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials will be removed to a disposal facility authorized to accept such materials.
17. Non-specular conductors will be used to reduce visual impacts.
18. The contractor will use weed-free, seed mixes for revegetation. No species on the "state noxious weed list" will be included in the revegetation seed mixes. Weed control agencies located within the project area will be consulted and a weed control plan will be developed and implemented as required.
19. All heavy equipment brought in from out of state or county will go through high pressure washing before use on site.
20. Dust will be controlled by applying water or chemicals as required during reconductoring.

3.0 Environmental Analysis

This Section contains an assessment of potential environmental impacts resulting from reconductoring the transmission lines. Mitigation measures are included, if necessary, to reduce the level of impacts below the level of significance.

3.1 Air Quality

Reconductoring of the transmission lines will result in a very minor temporary and finite increase in the production of criteria and non-criteria air pollutants in the form of fugitive dust and tailpipe emissions from construction equipment. As these elements of the project construction are expected to span 4 to 5 months in total, the associated additional air emissions would not be significant due to the limited nature of the construction. Fugitive dust emissions will be minimized by employing dust suppression measures. Tail-pipe emissions will be minimized by limiting the amount of engine idling, maintaining construction equipment within manufacturer's specifications, and limiting the number of construction machines used.

The reconductoring will use some of the same basic equipment and construction practices used to construct the power plant, will result in less ground disturbance, and will be spread out along the rights-of-way. Air quality impacts are not expected to differ significantly from those described in the AFC. No additional mitigation beyond that already identified in the AFC is necessary.

3.2 Biological Resources

3.2.1 Affected Environment

The transmission lines cover the same areas and areas that are biologically similar to those crossed by the proposed water pipeline to serve the SJVEC. For this reason, the description of habitats and sensitive resources potentially affected are consistent with and even congruent with the descriptions provided in Section 8.2.3 of the AFC.

The habitats crossed by the transmission line corridors are dominated by agricultural uses (see Tiles 1 through 7). The transmission lines cross 20 major canal, irrigation ditch or open water features, and 3 riparian or riparian scrub features. They also cross one annual grassland area (James Bypass) that could contain some salt scrub features. There are 55 urban and landscape features within the corridor, including a few that are farms or industrial features (Fresno WWTP). A description of these habitat types is provided in Section 8.2.3.2 of the AFC.

3.2.1.1 Agricultural

Agricultural uses dominate both the project site and habitat along linear corridors. Most of the linear corridors are miles of uniform fields of cotton, tomatoes, sorghum, alfalfa, or

melons. North of McMullin substation, the alignment becomes progressively more dominated by walnuts, citrus and vineyards. Farming is intensive, resulting in the removal of all native vegetation, and farm fields are plowed or graded up to the edge of rural roads and highways. Irrigation ditches are generally shallow, temporary structures formed by a tractor-mounted plow and rarely support any vegetation.

Vegetation species present are almost exclusively agricultural crop, maintained in a weed-free state. The wildlife species that commonly use cotton, alfalfa, tomato and melon fields are generally wide-ranging species that are highly adaptable. American crows, ravens, Brewers, and red-wing blackbirds are common. Large soaring raptors such as red-tail hawks, and occasionally Swainson's hawks, forage in alfalfa fields. California hare, coyote, and striped skunks are also relatively common. Mallard ducks, American coot and pied-billed grebes use tailwater ponds and slow-moving irrigation ditches. This habitat type is regionally abundant and the species that occur there are generally widely distributed and common.

3.2.1.2 Saltbush Scrub

In the affected project area, saltbush scrub habitat occurs only in small patches along the James Bypass. This is the most similar to the native habitat that dominated this area prior to agricultural conversion, and in its natural state supports a wide abundance of native species. The ability of this area to support native species however, is affected by the size of the habitat patch and its interconnection to other natural habitats. As it occurs in discontinuous and remnant patches along James Bypass it functions as a narrow corridor for some native species. Maintaining saltbush scrub in a near natural condition is desirable to support these remnant areas.

3.2.1.3 Irrigation Ditches

Irrigation ditches vary in size—from the 100-foot-wide California Aqueduct to 3-foot-wide ditches cut by the farmer's plow. The ditches are generally kept clear of aquatic and riparian vegetation, and rarely support fishes because they are seasonally dry. Some of the irrigation ditches (Fresno Slough and James Bypass) could be considered jurisdictional wetlands, but, in general, they are excavated in upland soils (lack hydric characteristics), lack vegetation (no hydrophytic vegetation), and are maintained solely by manmade water supplies (i.e., no natural hydrology). Most of the irrigation ditches would not qualify as jurisdictional wetlands.

There is one tower located in a mixed annual grassland area with scattered patches of saltbush scrub. Reconductoring construction activities in this area would not develop or convert this habitat.

3.2.1.4 Riparian Communities

The California Aqueduct is exceptional among irrigation ditches in that it is bordered for its entire length on both sides by a dense (but narrow) strip of tall mesquite and willow trees. This vegetation grows along the toe of the aqueduct, adjacent to the berm forming the outer walls of the canal. Similar vegetation springs up in discontinuous patches along parts of the James Bypass, on the proposed water line route. The reconductoring project will span the California Aqueduct, thereby avoiding any potential affects to riparian communities.

3.2.1.5 Landscape and Urban Communities

There are no cities along the transmission line, but the number of farm houses, residences and landscape habitat types increases near McMullin substation and north. Similarly the line crosses through an extensive area of industrial development on the south side of Kearney substation, as it crossed the Fresno Wastewater Treatment Plant Ponds. Most of the land surface is covered with packed earth, housing, buildings, or asphalt (e.g., roads). The availability of water, shady cover, and insects makes the yards and landscaping around urban areas attractive to certain adaptable species, but these tend not to include many native species. Reconductoring activities in landscape and urban communities would have essentially no affect on wildlife or sensitive species.

3.2.1.6 Special-Status Species

Special-status plant and animal species evaluated here were determined from the California Natural Diversity Data Base (CNDDB) (Appendix 8.2A of AFC), consultations with agency personnel (Appendix 8.2B of AFC), and field surveys.

Special-Status Plants

The CNDDB lists three special-status plants species that are recorded in the transmission line corridor. Of these, none is expected to occur on the project site or on most of the water and gas lines. Brittlescale, lesser saltscale, and Munz' tidy-tips are typical of the chenopod scrub and alkaline flats that formerly dominated the landscape of the San Joaquin Valley. Unfortunately, with the exception of small outcrops along the California Aqueduct, Fresno Slough and James Bypass this habitat has been entirely replaced by intensive row crops and irrigated agriculture. The habitat modification, weed control and irrigation have forced these species to marginal areas, including outside of the project area. For those species that once were recorded along the corridor, the most recent recorded notation is generally that the area has been converted and no longer supports the species.

Special-Status Animals

One special-status animal was listed in the CNDDB as recorded from the proposed transmission line corridor. As noted in the AFC, the giant garter snake (GGS) (federal threatened species) is known to occur in Fresno Slough, which is crossed by the transmission line. Burrowing owls, California horned lark, and mountain plover (Species of Special Concern) would be expected to forage over the agricultural fields in the region. Maintenance for intensive agriculture makes the habitat marginally suitable for nesting (burrowing owls). Small rodents such as Fresno or giant kangaroo rats, San Joaquin antelope squirrels, San Joaquin kit foxes, blunt-nosed leopard lizards, California horned lizards, and the two beetles listed in the AFC probably occur only west of I-5, where undisturbed habitat exists.

3.2.1.7 Biological Resources Impact Evaluation

Potential impacts to biological resources were evaluated to determine any permanent or temporary effects of the reconductoring.

Reconductoring the transmission lines would require no permanent conversion of habitat, as the new lines would either be placed on existing poles or on new poles replacing existing poles. There would be no permanent habitat loss as a result of reconductoring.

Potential habitat for special status species is probably limited to areas that are not developed extensively for agriculture, generally lining the California Aqueduct, Fresno Slough or James Bypass. If there are poles within 150 feet of these features that require replacement, the site can be surveyed prior to construction and if necessary, construction scheduled for a time that is not sensitive for special status species.

There are three irrigation ditches that support substantial bulrush and cattail that could seasonally support bird nesting. Construction within 150 feet of these areas could cause adverse impacts to nesting birds that are protected under the Migratory Bird Treaty Act.

Bird collision with new electric transmission lines and towers are expected to be rare because the new wires would replace existing transmission lines. Transmission lines are generally considered a significant collision hazard if they are near dense congregations of migratory waterfowl or in constrained migratory corridors. Neither describes the transmission corridor. The potential for collision is considered less-than-significant.

Large raptors can be electrocuted by transmission lines when a bird simultaneously contacts two conductors of different phases, or a conductor and a ground. All electrical transmission lines for the present project are constructed with sufficient clearance between conductors and ground to protect large birds from electrocution. Installation of transmission lines and towers according to "raptor-proof" guidelines (*Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996*, APLIC, 1996) would reduce potential impacts to less-than-significant.

General mitigation measures are proposed in Section 8.2.5.1 of the AFC that are intended to avoid, minimize or compensate for potential adverse effects of the reconductoring project, and to monitor and document the effectiveness of mitigation. . Those measures include such things as Worker Environmental Awareness Training, preparation of a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and pre-construction surveys and monitoring, as appropriate. These measures would apply to the reconductoring portion of the project and would effectively reduce potential impacts.

For reconductoring, the most effective mitigation measures will be to identify potentially sensitive sites, survey them prior to construction and adjust construction schedules or work locations to avoid sensitive sites, consistent with the measures outlined in Table 1.

3.3 Cultural Resources

CH2M HILL commissioned the cultural resource staff at the Southern San Joaquin Valley Archaeological Information Center in Bakersfield, California to review their cultural resource files for information on known/recorded archaeological and historical sites, inventory and excavation reports, and properties listed on the National Register of Historic Places and/or the California Register of Historical Places. Properties included in the list of California Historic Landmarks, the California Inventory of Historic Resources, and the California Points of Historical Interest (lying within a one-half mile radius of the existing electrical transmission line) were also checked.

California Historical Resources Information System (CHRIS) reported that ten cultural resource surveys were previously conducted within a one-half mile radius of the existing

electrical transmission lines. Fourteen sites are recorded within a one-half mile radius with only two archaeological sites, P-10-000559 and 3081, recorded within the project area. Furthermore, no cultural resources within the project area are listed in the National Register of Historic Places, the California Register, California Inventory of Historic Resources, California Points of Historic Interest, or the California Sate Historic Landmarks. A copy of the materials provided by CHRIS will be provided to the CEC under a request for confidentiality.

Portions of the electrical transmission line, approximately 25 miles, from the Panoche to the Helm Substations was surveyed by CH2M HILL cultural resource staff in October, 2001. No cultural resources were identified during the survey. According to CHRIS, the existing electrical transmission line from the Helm to the Kearney Substations, approximately 22 miles, remains mostly unsurveyed.

CH2M HILL contacted the Native American Heritage Commission for a records search of the Sacred Lands file for information on cultural resources in the project area. The records search determined that no known cultural resources exist in the project area.

3.3.1 Cultural Resources Site P-10-000559

Archaeological site P-10-000559 is a prehistoric site located along the existing electrical transmission line route. The site was recorded in 1975 and although the site form contains limited information it appears that the site consists of three, 4- to -5-meter diameter house pits, three small bone mortar fragments, a core, flakes, shell, and bird bone.

3.3.2 Cultural Resources Site P-10-0003081

Archaeological site P-10-0003081 is also along the existing electrical transmission line route. The site was recorded in 1996 and contains historic debris from the 1930s and 1940s with some more recent debris intermixed. The site contains glass bottle fragments, ceramic, brick and concrete debris.

3.3.3 Cultural Resources Findings and Summary

The existing electrical transmission line from the Panoche to Helm Substations has been surveyed for cultural resources. No cultural resources were observed. The CHRIS record search and the Native American Heritage Commission indicates there are no cultural resources recorded along this segment of the project route.

The electrical transmission line from the Helm to Kearney substations remains mostly unsurveyed. The CHRIS records search indicates that two archaeological sites are recorded along the route. The Native American Heritage Commission indicates there are no cultural resources recorded along the project route.

No additional cultural resource work is necessary along the electrical transmission line from the Panoche to the Helm Substations. However, approximately 22 miles of the electrical transmission line from the Helm to Kearney Substations will need to be surveyed prior to the startup of field operations for the reconductoring project. At the present time there are

two archaeological sites recorded along this segment of the route. Both sites will need to be revisited to determine any possible effects the project may have on these locations.

The transmission system in the vicinity of the Helm substation was installed in the mid-late 1950s, making it older than 45 years. However, the transmission towers and lines have no unique features that would warrant consideration for listing on the National Register of Historic Places. Furthermore, removing and replacing conductors is not likely to change the setting or appearance of the transmission system.

3.4 Land Use

Potential impacts to land uses remain the same as those described in the AFC. The proposed reconductoring would not physically divide an established community, nor would it result in any changes to existing or future land uses since the existing transmission line will only be reconductored. Existing land uses are shown in Tiles 1 through 7. Therefore, the project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project. In addition, the SJVEC Project includes mitigation measures to reduce any potentially significant land use compatibility impacts, such as visual and noise impacts

3.5 Noise

Potential impacts on noise sources remain the same as those described in the AFC. All relevant construction noise mitigation measures would be applicable to the proposed project. Noise would be of short duration and limited to daytime construction hours.

3.6 Public Health

Since there would be no additional air quality impacts, except for some minor short-term construction impacts, the reconductoring of the transmission lines would not create a significant adverse public health impact.

3.7 Worker Health and Safety

The AFC addresses worker health and safety. The plans described in the AFC would include safety issues for reconductoring transmission lines. Therefore, the proposed reconductoring would not result in any adverse worker health and safety impacts.

3.8 Socioeconomics

Potential impacts on socioeconomic resources were described in the AFC. The reconductoring would require some additional construction work. However, due to the small size of the construction labor force (15 to 20 workers for a 4 to 5 month period) required for reconductoring, construction of these improvements would not substantially change socioeconomic impacts from those described previously.

3.9 Agriculture and Soils

Potential impacts to agriculture and soils were described in the AFC. Reconductoring would not result in any permanent impacts to agriculture and soils. Temporary impacts to agricultural operations, if any, would be addressed through negotiation with the affected landowners. Implementation of the proposed reconductoring project would not change agriculture and soils impacts from those described previously in the AFC.

3.10 Traffic and Transportation

Potential impacts of the SJVEC on traffic and transportation were described in the AFC. The SJVEC project is in compliance with all applicable LORS. The incremental traffic trips resulting from the proposed reconductoring would not result in any changes in traffic impacts beyond those evaluated in the AFC. Lines crossing roadways will be done in such a manner as to avoid have to stop traffic.

3.11 Visual Resources

Reconductoring of the transmission lines would cause temporary visual impacts due to the presence of equipment, materials, and construction personnel. As discussed in Section 8.11 of the AFC, construction activities would occur for only a short period in any given location. Due to the short-term nature of the project construction no substantial visual degradation of the areas surrounding the transmission lines would occur. Potential visual impacts associated with reconductoring are considered less than significant.
The significance of the long-term impact on visual resources from the presence of project facilities depends on the degree to which the viewshed is altered or the facility contrasts substantially with the landscape. Reconductoring will not substantially alter the existing viewshed since the towers already exist and activities would be limited to replacing a conductor with a slightly larger one or stringing another conductor on existing towers. Therefore, visual impacts are not considered significant.

3.12 Hazardous Materials Handling

Reconductoring of the transmission lines would not result in a significant increase in the use of hazardous materials during construction. Due to the small size of this construction effort, there would not be a need for equipment refueling and maintenance at the staging areas or pull sites; thereby, eliminating the possibility that hazardous materials generated during construction would come from that source. Thus, there would not be the potential for material spills and the resulting impacts on the environment would not result in a significant hazardous materials handling impact.

3.13 Waste Management

Reconductoring of the transmission lines would not generate significant quantities of solid or liquid waste. Small amounts of lubricating oils and oil filters will be generated during routine maintenance activities of construction vehicles. The old conductor will be collected

by PG&E and retained for reuse or recycled. Therefore, there would not be a significant impact to waste management from this activity.

3.14 Water Resources

Reconductoring of the transmission lines would not require the substantial use of water, water is not required for their operation, and construction would not obstruct any flood way or waterway. Therefore, there would not be a significant impact to water resources from this activity.

3.15 Geologic Hazards and Resources

Reconductoring of the transmission lines would primarily involve replacing one conductor with another. However, under some circumstances, it may be necessary to replace towers with stronger towers to accommodate a heavier conductor or to raise the height of the towers to allow for greater conductor sag. In these circumstances, the stronger towers will meet UBC seismic requirements. Since tower replacement will not be common, excavations into the soils will be limited. No significant impact to geologic resources (if present) are anticipated. All structures must be constructed to International Building Codes standards for seismic acceleration from 0.2g to 0.6g (Mualchin, 1996), depending on its location in the valley. (See section 8.15.3.4.2 of the AFC). Any liquefiable or expansive soils identified during construction can be mitigated, if necessary, by over- excavating and replacing with non-expansive and liquefiable soil mixtures. Therefore, this action would not result in a significant adverse geologic impact.

3.16 Paleontological Resources

Potential impacts to Paleontological Resources from the SJVEC were described in the AFC. The reconductoring would not cause any additional impacts to those previously described.

4.0 SUMMARY

The AFC determined that the SJVEC complies with all applicable LORS. The proposed reconductoring project will not result in any inconsistencies with LORS, and is consistent with the environmental setting and impact analysis contained in the AFC. The proposed reconductoring would not increase any potential environmental impacts of the project. No new environmental issues, beyond those already addressed in the AFC are raised by the proposed reconductoring. The mitigation measures developed for the power plant and pipeline construction could be readily applied to the proposed reconductoring. Additionally, the measures outlined in Table 1 above would also ensure that no significant impacts occur as a result of the proposed reconductoring.

[Insert Tiles 1 through 7]

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE *COLUSA GENERATING STATION PROJECT*

Docket No. 06-AFC-9
PROOF OF SERVICE
(REVISED 5/16/2007)

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

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DECLARATION OF SERVICE

I, Dora Gomez, declare that on May 16, 2007, I deposited copies of the attached Project Description Data Requests 117 through 125 for The Colusa Generating Station (06-AFC-9) in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

DORA GOMEZ