

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Air Quality**

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

**Construction Emission Calculations**

**Background**

The SPPE Application includes a comprehensive review of emissions that could occur during construction (Appendix 5.1-4). Staff believes that this demonstrates a rigorous effort by KCRD to characterize the emissions accurately, while reflecting the reductions that would occur with measures that would likely be recommended by staff. Staff has technical questions regarding some of the steps of these calculations. In these cases, staff is concerned that there may be errors that would bias the results toward underestimating the PM10 impacts. PM10 is a serious concern because of the non-attainment status of the region and the proximity of sensitive receptors to the site. We have specific questions about an adjustment factor related to use of ultra-low sulfur fuel and an emission factor for wind-blown dust. Without a better understanding of these details, staff may need to revise portions of the emission calculations.

***REQUEST:***

1. Please provide an example calculation for the "Adjusted PM10 Emission Factor" shown in Table CE1 of Appendix 5.1-4. Staff needs to verify proper use of the sulfur adjustment factor that is used in deriving the PM10 factor. Upon reviewing the references supplied in the footnotes of the table, it is not clear how the sulfur adjustment factor is calculated and then used in the applicant's calculation for the PM10 factor.
2. Please reevaluate emission factor for fugitive wind-blown dust. Staff needs to verify proper use of control factors for this term. Staff believes that the original PM10 emission factor of 0.011 ton/acre-month (p. 6 of 7 of notes attached to Appendix 5.1-4) already reflects the reductions that would occur with vigilant dust control. Staff believes that it would be inappropriate to apply an additional 90 percent control factor (as shown in Tables CE5 and CE6 of Appendix 5.1-4).

***RESPONSE:***

**DR 1**

A response will be provided on or before February 13, 2004.

**DR 2**

A response will be provided on or before February 13, 2004.

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**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Air Quality**

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

**Construction Impacts Modeling  
Background**

Staff has conducted a preliminary review of the construction impacts analysis (provided in Appendix 5.1-4 of the application and on electronic CD-Rom) for the proposed project and has the following requests.

Review of the file "*CONNO1.INP*" reveals that an hourly emission rate of 5.68 lb/hour NO<sub>x</sub> was used for construction equipment exhaust. This emission rate would be appropriate for emissions occurring over 24 hours, but it is not appropriate for emissions that occur only during the 8-hour workday. Because the calculations in Appendix 5.1-4 show that no equipment would operate more than 8 hours per day, staff believes that the hourly NO<sub>x</sub> emission rate in this file should be approximately 17.06 lb/hour for 8 hours per day (basis: 136.44 lb/day divided by 8). This would require rerunning the ISC3\_OLM analysis, using the "*HROFDY*" feature to confine the NO<sub>x</sub> emissions to daytime hours. The analysis for hourly CO and SO<sub>2</sub> impacts also would need to be similarly revised because the emission rates in the files "*CONCO.INP*" and "*CONSO.INP*" are based on 24-hour averages.

**REQUEST:**

3. Please revise the construction impacts analysis for NO<sub>x</sub> by modeling equipment emissions during only the workday, using an 8-hour average emission rate and the "*HROFDY*" feature. This should result in one revised run of ISC3\_OLM for comparison of project impacts with the 1-hour California Ambient Air Quality Standard for NO<sub>2</sub>.
4. Please revise the construction impacts analysis for CO and SO<sub>2</sub> by modeling equipment emissions during only the workday, using an 8-hour average emission rate and the "*HROFDY*" feature. This should result in two revised runs of ISCST3 for comparison of project impacts with short-term California Ambient Air Quality Standards for CO and SO<sub>2</sub>.

## **RESPONSE:**

### **DR 3**

A revised ISC3\_OLM modeling run was performed for nitrogen dioxide (NO<sub>2</sub>) and an electronic version (on compact disk) is included as Attachment Air Quality DR-3. The hourly oxides of nitrogen (NO<sub>x</sub>) emissions rate, which was used previously, was multiplied by a factor of three to simulate daily NO<sub>x</sub> emissions being emitted within an 8-hour work period rather than over a 24-hour period. The results of this additional modeling indicate that the KRCDPP's 1-hour NO<sub>2</sub> impact increases from 177 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) (+ 169 background = 346  $\mu\text{g}/\text{m}^3$  total) to 280  $\mu\text{g}/\text{m}^3$  (+ 169 = 449  $\mu\text{g}/\text{m}^3$  total).

As the 1-hour standard for NO<sub>2</sub> is 470  $\mu\text{g}/\text{m}^3$ , the KRCDPP will not result in an exceedence of this Ambient Air Quality Standard (AAQS), based on the higher emissions rate assumed for the 8-hour interval.

### **DR 4**

Rather than re-model construction emissions impacts for carbon monoxide (CO) and sulfur dioxide (SO<sub>2</sub>), an alternative approach is to assume the impacts are three times greater than those which resulted from the modeling of impacts based on emissions being averaged over a 24-hour period. Tripling the emissions rates (and resulting impacts) accounts for the emissions being released within an 8-hour rather than a 24-hour period. This approach provides an additional level of margin because the maximum concentrations that were presented in the earlier modeling for CO and SO<sub>2</sub> occurred during non-operational hours.

When the estimated KRCDPP impacts for CO and SO<sub>2</sub> in Table 6 of Appendix 5.1.4 of the KRCDPP Small Power Plant Exemption (SPPE) application are tripled, the total impacts are still well below both the federal and state AAQS. Included as Attachment Air Quality DR-4, is a revised version (in redline/strikeout format) of Table 6 from KRCDPP SPPE Appendix 5.1-4, which shows the recalculated total impacts.

**ATTACHMENT  
AIR QUALITY DR-3**

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Five electronic copies (on compact disk) of Attachment Air Quality DR-3 have been provided.

**ATTACHMENT  
AIR QUALITY DR-4**

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Table 6 of KRCDPP SPPE Appendix 5.1.4 with revised impacts for NO<sub>2</sub> (1-hour), SO<sub>2</sub> (1-hour & 3-hour) and CO (1-hour & 8-hour)

**Table 6 - REVISED**  
**Modeled Maximum Construction Impacts**  
**KRCDPP**

| Pollutant  | Averaging Time      | Maximum Construction Impacts (µg/m <sup>3</sup> ) | Background (µg/m <sup>3</sup> ) | Total Impact (µg/m <sup>3</sup> ) | State Standard (µg/m <sup>3</sup> ) | Federal Standard (µg/m <sup>3</sup> ) |
|--|---------------------|---|---------------------------------|-----------------------------------|-------------------------------------|---------------------------------------|
| NO <sub>2</sub> <sup>a</sup>   | 1-Hour              | <del>280</del> 177                                | 169                             | <del>449</del> 346                | 470                                 | --                                    |
|  | Annual              | 13  | 43                              | 56                                | --                                  | 100                                   |
| SO <sub>2</sub>  | 1-Hour              | <del>2.10</del> 7                                 | 78                              | <del>807</del> 9                  | 650                                 | --                                    |
|  | 3-Hour              | <del>0.90</del> 3                                 | 78                              | <del>797</del> 8                  | --                                  | 1300                                  |
|  | 24-Hour             | 0.2   | 16                              | 16                                | 105                                 | 365                                   |
|  | Annual              | 0.01  | 8                               | 8                                 | --                                  | 80                                    |
| CO   | 1-Hour              | <del>1032</del> 344                               | 10285                           | <del>11317</del> 10629            | 23,000                              | 40,000                                |
|  | 8-Hour              | <del>459</del> 153                                | 4880                            | <del>5339</del> 5033              | 10,000                              | 10,000                                |
| PM <sub>10</sub>   | 24-Hour             | 44  | 186                             | 230                               | 50                                  | 150                                   |
|  | Annual <sup>b</sup> | 3   | 52                              | 55                                | 20                                  | 50                                    |
| Notes: a. OLM_ISC used for 1-hr average impact .<br>b. Annual Arithmetic Mean. |                     |   |                                 |                                   |                                     |                                       |

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Air Quality**

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

**Emission Calculations**

**Background**

Table 5.1-12 (p. 5.1-25) of the application shows emission rates for startup/shutdown. This table indicates that CO emissions during startup/shutdown would be similar as those for steady-state operation. Staff is concerned that the oxidation catalyst may not operate effectively at the low temperatures experienced during startup, and that until the catalyst reaches some minimum operating temperature, CO emissions may exceed the steady-state estimates.

**REQUEST:**

5. Please provide an explanation of the anticipated oxidation catalyst design. This should include a brief description of catalyst material and minimum operating temperature. This may also warrant an explanation of the expected response time during startup or the steps that would be taken to ensure that catalyst performance is stable over all operating conditions.

**RESPONSE:**

**DR 5**

As a vendor for the oxidation catalyst has not been selected, only conceptual rather than detailed design information is available regarding this piece of KRCDPP equipment. The design specifications for the oxidation catalyst will be developed to ensure that carbon monoxide (CO) emissions from the combustion turbines do not exceed either 6.0 parts per million by dry volume (ppmdv) (@ 15% oxygen) or 6.2 pounds per hour (lbs/hr) under the various KRCDPP operating scenarios, including startup.

The LM6000's startup sequence, which is relatively rapid in simple cycle mode, can be described as follows: initiate start sequence at t = 0; start turbine enclosure fans at t = 20 seconds; perform turbine and stack purge from t = 20 to t = 80 seconds; commence light-off (fuel flow) at t = 80 seconds and ramp up for two minutes to t = 200 seconds; perform turbine warm up for two additional minutes from t = 200 to t = 320 seconds; sync & close breaker from t = 320 to t = 335 seconds; (linear) ramp from zero to full load from t = 335 to t = 575 seconds (10 minute start sequence). Slower ramps zero to full load are allowed depending on auxiliary system requirements, electric grid constraints and operator preferences.

Depending on the catalyst chosen, the minimum temperature for the catalyst's normal operating range is anticipated to be 450-600 degrees Fahrenheit (°F). During the starting sequence the turbine exhaust temperature will rapidly reach 600°F. During the ramp up period the CO emissions are assumed to be below permit levels. By the time the unit reaches a 10% load level (t = 359 seconds), the pre-catalyst CO emissions rate is estimated to be 4 lbs/hr and the turbine exhaust temperature is approximately 637 °F. At this load the oxidation catalyst would be functioning at its near normal operating efficiency. Based on an oxidation catalyst removal efficiency for CO of 87-88%, the post-catalyst CO emissions rate through the 10% load point will be approximately 0.49 lbs/hr, well below the allowable ceiling of 6.2 lbs/hr. For slower ramping conditions, the catalyst will be fully functioning. In the case of a failed start, subsequent re-starting sequences would be performed with the catalyst already heated.

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Air Quality**

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

**Emission Calculations**

**Background**

The application does not include information necessary for staff to verify the PM<sub>10</sub> emission calculations for the inlet air cooling towers and the zero liquid discharge system (ZLD) evaporation tower. Staff could not locate information on the anticipated total dissolved solids (TDS) for the water in the cooling towers.

**REQUEST:**

6. Please provide an emission calculation for PM<sub>10</sub> from the inlet air chiller cooling towers. This should include the maximum anticipated TDS for the water in the cooling towers and the expected drift rate.
7. Please provide an emission calculation or emission factor for the anticipated ZLD dryer baghouse. This should include percentage of control that would be provided by the fabric filter or a maximum outlet grain-loading factor (PM<sub>10</sub> mass per unit of air volume) and information on the volumetric flow rate.

**RESPONSE:**

**DR 6**

Table 5.8-6 of the KRCDPP SPPE shows emissions rates in pounds per hour (lbs/hr) of approximately 0.017 and 0.069 for one cooling tower cell and four cells, respectively. These emissions were assumed as the particulate matter (10 microns in diameter and smaller) PM<sub>10</sub> emissions rates for the KRCDPP's cooling towers. As the KRCDPP has two inlet air cooling towers (one for each of the two combustion turbines) and each of these cooling towers has two cells, the PM<sub>10</sub> emissions rates for each of the cooling towers was estimated as 0.035 lbs/hr.

The Total Dissolved Solids (TDS) concentration in the cooling tower makeup water is anticipated as 360 milligrams per liter (mg/l). Based on four cycles of concentration in the cooling towers, the ultimate TDS concentration will be 1,440 mg/l. Each cooling tower will have a circulating water rate of 4,000 gallons per minute (gpm) and an anticipated drift rate of no more than 0.001%. Therefore, based on these parameters and assuming TDS as the source of PM<sub>10</sub> emissions from the cooling towers, the PM<sub>10</sub> emissions rate from each tower would be approximately 0.029 lbs/hr.

The KRCDPP chose to use the higher PM<sub>10</sub> emissions rate in Table 5.8-6, as it provides a margin of approximately 20% over the TDS emissions rate.

#### **DR 7**

Table 5.8-7 of the KRCDPP SPPE shows a solids emissions rate of approximately 0.06 pounds per hour (lbs/hr) for the Zero Liquid Discharge (ZLD) evaporative spray dryer. These emissions were assumed as 100% PM<sub>10</sub>, and a PM<sub>10</sub> emissions control device, a filter baghouse, will be included as part of the ZLD system (if the spray dryer option is used) to limit PM<sub>10</sub> emissions to no more than 0.06 lbs/hr. The design of the ZLD system, including the evaporative spray dryer, is in the conceptual rather than the detailed design phase, and therefore, precise calculations as to the PM<sub>10</sub> control efficiency and system flow rates are not currently available. In developing the 0.06 lbs/hr PM<sub>10</sub> emissions rate the assumptions below can be used to characterize the ZLD spray dryer. However, while the emissions limit of 0.06 lbs/hr will not change, the following design information, which is provided as typical for this application, is subject to change, based on requirements of the final KRCDPP design.

- Baghouse inlet loading (lbs/hr) – 83.3
- Baghouse efficiency (%) – 99.94
- PM<sub>10</sub> emissions rate (lbs/hr) – 0.05
- Exhaust flow actual cubic feet per minute (acfm) – 1,240
- Exhaust temperature (degrees Fahrenheit) – 375
- Humidity ratio (lbs water/lb dry gas) – 0.128
- Solids loading (grains/dry standard cubic feet (dscf)) – 0.0091.

The KRCDPP used the higher PM<sub>10</sub> emissions rate in Table 5.8-7, as it provides a margin of approximately 15-20% over the 0.05 lbs/hr emissions rate.

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Air Quality**

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

**Offsets for Mitigation**

**Background**

Staff encourages mitigating project emissions and impacts through the use of emission reduction credits (ERCs), and KRCD recognizes this (p. 5.1-37). However, the application does not provide any detail on how the minimum offset ratio of 1:1 for all non-attainment pollutants and their precursors would occur. Staff may need to investigate the origins of certain ERCs for validity. Additionally, staff would need to verify any inter-pollutant trading schemes, if proposed by KRCD. To provide staff sufficient time to review the mitigation package, staff needs identification of the ERCs as soon as possible.

***REQUEST:***

8. Please provide the Certificate numbers for the ERCs dedicated to the KRCD project. This information should demonstrate that the ERCs would provide a minimum 1:1 offset ratio for the project's NO<sub>x</sub>, PM<sub>10</sub>, VOC and SO<sub>2</sub> emissions.

***RESPONSE:***

**DR 8**

A contract has been executed for the procurement of the required 10.91 tons of PM<sub>10</sub> ERCs. The San Joaquin Valley Air Pollution Control District (SJVAPCD) ERC certificate numbers are C-460-4 and C-479-4. Contracts for the necessary VOC, NO<sub>x</sub> and SO<sub>2</sub> ERCs are currently being negotiated. Once these contracts have been executed and the ERC certificate information is available, the certificate numbers will be supplied. We anticipate the remaining ERC certificate information will be obtained by mid-February 2004.

|   |                    |
|---|--------------------|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |                    |
| <b>Technical Area</b>   | <b>Air Quality</b> |

Technical Area: Air Quality

Author: Brewster Birdsall, Matthew Layton

### **Cumulative Impacts Analysis**

#### **Background**

In the application (p. 5.1-38), KRCD indicates that because of minor project-related impacts, no separate cumulative analysis would be necessary to determine that the impacts would not be cumulatively considerable. Staff needs to verify whether other new sources may cumulatively impact the project vicinity. To accomplish this, other new stationary emission sources located near the KRCDPP should be identified.

#### ***REQUEST:***

- |  |
|--|
| <ol style="list-style-type: none"><li>9. Please coordinate with the SJVAPCD to identify any new or modified stationary sources within 10 kilometers (6.2 miles) of the KRCDPP site. This should include sources that either began operation after January 1, 2003 or received an Authority to Construct (ATC) permit after January 1, 2000 but are not yet operational, and sources that have submitted complete ATC applications to the District. Please also include the location (in terms of UTM coordinates) of the identified sources and the net emission increase of NO<sub>x</sub>, CO, SO<sub>x</sub>, or PM<sub>10</sub>.</li><li>10. Please provide an analysis of the cumulative impacts that may result from the proposed project and other reasonably foreseeable projects.</li></ol> |
|--|

#### ***RESPONSE:***

##### **DR 9**

A response will be provided on or before February 13, 2004.

##### **DR 10**

A response will be provided on or before February 13, 2004.

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Biological Resources**

**Technical Area: Biological Resources**  
**Author: Melinda Dorin**

**BACKGROUND**

The SPPE application contains information about the proposed transmission line in several locations: Chapter 2, Section 2.8.4 and Figure 2.8-1; Chapter 3, Section 3.11.3; and Section 5.15 pages 11-12. Section 5.15 pages 2 and 10 states red-tailed hawks, peregrine falcons and Swainson's hawks are known from the area. Raptors that are protected by the LORS identified in Section 5.15-3 can be adversely affected by colliding with transmission lines or by getting electrocuted while perching on power poles.

**REQUEST:**

11. Please provide the proposed transmission line spacing and the bonding, and grounding measures that the KRCD is implementing. The information can be provided in writing and/or in a figure. Measures should be consistent with the Avian Power Line Interaction Committee *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996* (1996).

**RESPONSE:**

**DR 11**

Included as Attachment Biology DR-11, is a modified version of KRCDPP SPPE Figure 2.8-1, which shows the typical pole configuration for proposed transmission line, including dimensions and clearances. The transmission line for the KRCDPP will be constructed, owned and operated by Pacific Gas and Electric Company (PG&E). All transmission poles will consider, use and follow PG&E's Raptor-Safe Construction and Wildlife Protection" guidelines (Guideline 061149), also included Attachment Biology DR-11. The transmission conductors in this design meet the spacing requirement for raptor protection as specified by the Avian Power Line Interactive Committee. Perch deterrents will be installed on distribution cross arms as necessary. This design is consistent with the "Suggest Practices for Raptor Protection on Power Lines" as recommended in this data request.

## **BACKGROUND**

Section 5.15.5 of the SPPE application states that preconstruction surveys for burrowing owls will be completed. KRCD will conduct surveys, and removal as necessary, in accordance with the CDFG (1994) guidelines. No other mitigation measures are proposed.

### ***REQUEST:***

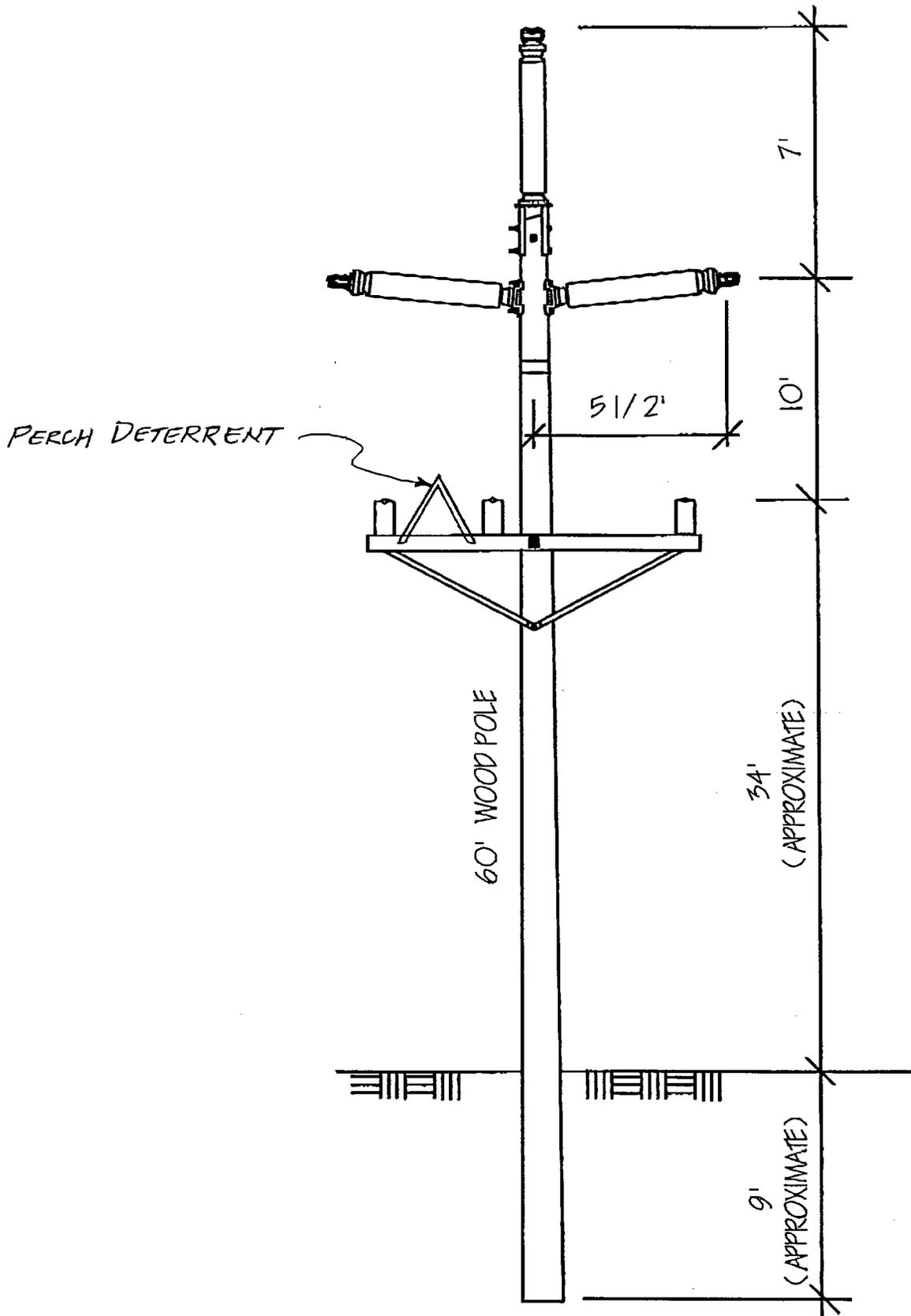
12. Please provide information on habitat compensation that would meet the CDFG guidelines, and a draft proposal for monitoring relocated owls. The information to be provided should ensure that any potential impacts to burrowing owls are fully mitigated.

### **DR 12**

The approximately 19-acre KRCDPP project area (which includes the project site, temporary construction staging and parking area and existing storm water basin) is located within an industrial area of the Community of Malaga. No Burrowing Owls reside on or adjacent to the KRCDPP project area. Disking of the area for fire prevention has reduced the suitability of the site for owls and this practice will be continued in the future. The Burrowing Owl is not expected to colonize the project area; however, a preconstruction survey was proposed to ensure that owls do not inhabit the site prior to construction.

If Burrowing Owl were to inhabit the project site, it would most likely be a winter migrant that is moving through the area or moving elsewhere off-site to breed in spring. Since no resident owls occur on-site and no impacts are expected, no habitat compensation is proposed for the Burrowing Owl. Disking of the project site in winter and spring – prior to the nesting season – will again render the site unsuitable for owls. If owl removal were necessary, California Department of Fish and Game's (1994) "active relocation" technique of one-way doors in burrow entrances would be used. However, no artificial owl burrows would be created on-site or off-site for the owl's use. Thus, the owl would be forced off-site to find suitable habitat on adjacent lands or lands elsewhere. Visual-field monitoring would occur to ensure that the owl was excluded from its burrow prior to its filling or disking.

**ATTACHMENT  
BIOLOGY DR-11**



SINGLE CIRCUIT  
WOOD POLE CONSTRUCTION



## RAPTOR-SAFE CONSTRUCTION AND WILDLIFE PROTECTION

061149

Department: Electric T&amp;D

Section: T&amp;D Engineering and Technical Support

Approved by: C. C. Damianakes (CCD3)

Date: 05-30-03

Rev. #03: This document replaces PG&E Document 061149, Rev. #02. For a description of the changes, see Page 27.

### Purpose and Scope

Bird and raptor protection shall be a primary consideration in the design of new and reconstructed distribution facilities within Raptor Concentration Zones (RCZs).

RCZs consist of federal and state wildlife refuges and those areas incorporated within the RCZ maps in accordance with UO Standard S2321 and Document 068181. Note: Most cities and urban areas are not included within the RCZs.

This document specifies methods of constructing or modifying primary distribution circuits on wood poles in configurations that will provide 60 inches of phase separation. This reduces the electrocution risk to golden eagles and other large raptors. This document also provides information on materials available to increase the level of protection for all wildlife.

In general, for city or other RCZ boundaries, high risk poles/structures consist of:

- Locations where raptors are known to perch or nest.
- Lines that traverse open fields, farmland, orchards, or rolling hills with a high prey base or near a body of water.
- Poles/structures that are higher than the surrounding terrain providing a vantage point from which raptors may hunt.
- Equipment, riser, tap, and corner poles.

There are two main principles used to protect bird facilities.

- Provide birds with a safe place to land, or:
- Prevent birds from landing or perching between closely spaced phases.
- Where feasible, a combination of construction, covers, and perch deterrents should be employed as described below.

### Application

1. New or replaced pole installations within RCZs: Construction framing and/or equipment cover-up, or guards shown in this document, shall be used to reduce the potential electrocution risk to raptors and other migrating birds.
2. Retrofits, Reconstruction, Bird Incident Response, and Maintenance: Rather than reframing a pole, most poles can cost effectively be made bird-safe by using one or more of the protective materials shown on Pages 17 through 24. For existing poles requiring corrective action in response to bird-related incidents, to obtain necessary separation, consider the following:
  - A. Installing a pole top extension or 48-inch king pin/insulator bracket.
  - B. Installing an insulator/conductor cover (Figure 27 on Page 20 or Figure 29 on Page 22).
  - C. Using a 10' 6" crossarm.
  - D. Lowering crossarms.
3. Equipment Poles: Poles with equipment such as transformers, reclosers, sectionalizers, cutouts, regulators, arrestors, capacitors, etc., have the highest likelihood of electrocuting birds and animals. Protective bushing covers, covered wire, jumper lead wire covers, or perch deterrents shall be installed on new, replaced, or retrofit equipment and line and buck poles in RCZs.
4. Underbuild or Double Circuits: Use insulator line covers, Table 3 on Page 20, on the center phase of tangent underbuild where bird activity is known to be relatively high (e.g., flatlands with few alternate perch locations, near water, high prey base, etc.) and use perch deterrents (Figure 31 on Page 23) where the concentration of raptors is likely to be lower, where there are other preferred perch locations (e.g., trees higher than the surrounding terrain, tall buildings, raptor constructed poles with safe landing areas, etc.), or where deterrents are the best option to protect cutouts, buckarms, or other equipment.

Also, if there are equipment taps or dampers that would require cutting the insulator line cover to fit, use a deterrent instead.

### Raptor-Safe Construction and Wildlife Protection

5. Upon completion of work above the secondary level within the RCZ, verify the following conditions:
  - A. Bushing covers are properly sized and installed on equipment. **Note:** The modified cover shown in Figure 20 and Note 1 on Page 18 should be used on Part 44 cutouts.
  - B. All leads/jumpers above and below cutouts are covered/insulated along the entire length of the lead.
  - C. Potential second points of bird contact, above the secondary level, are protected by covers/guards or 60 inches of air separation.

#### General

6. The conductor arrangements shown in this document are in accordance with raptor-safe construction guidelines published for the Edison Electric Institute by the Avian Power Line Interaction Committee to provide sufficient minimum separation of primary wires to prevent skin-to-skin contact by golden eagles.
7. Use 60-mil covered wire for jumpers whenever possible (see Note 2B on Page 16). In lieu of covered wire, on some installations, it may be possible to reduce exposure by placing jumpers under or around the end of the arm instead of placing the jumper on top of the arm (see Figure 14 on Page 15).
  - A. To avoid potential TVI concerns when using 60 mil covered conductor for primary leads or jumpers, use polyethylene type insulators (Document 022088) and covered tie wire (Code 290299 - #4 soft drawn aluminum). See Document 059626 for more information.
8. Where it is necessary to have flat construction at a deadend, extend the middle phase farther from the pole by using a 14-inch extension link (Code 340356 or Code 182205) or by adding a second dead-end insulator.
9. High voltage signs shall be installed in accordance with the requirements of Document 022168.
10. For a wood crossarm attachment on a pole, install a plastic gain as specified in Document 058778.
11. Use insulator/conductor cover or perch deterrents as alternatives to increased phase separation with flat, underbuild, or line and buck construction.

#### Climbing Space

12. Where a circuit is installed at the top of the pole in wood-crossarm triangular primary construction, maintain the climbing space to the top conductor of that circuit on the climbing side of the pole.

#### Riser Poles

13. The brackets of porcelain potheads should not be left ungrounded; doing so exposes the cable to failure as there is no longer a ground reference for stress relief. If there are only potheads on the bracket, bushing and jumper covers should be sufficient. If there are cutouts, a modified bushing cover (Figure 20 and Detail A on Page 18) can provide protection.

#### Nests

14. Contact the Avian Program manager and refer to UO Standard S2321 for information regarding removal/relocation of active nests or installation of nest platforms.

**Note:** When trees are within 15 feet of the pole/structure in the RCZ, notify the local Vegetation Management contact before installing new poles or reframing poles to achieve 60-inch phase separation.

#### References

|   | Document |
|---|----------|
| Bonding Details for Wood Pole Lines .....                                 | 06667    |
| Brackets and Metal Crossarms for Overhead Line Construction .....         | 015190   |
| Conductors for Overhead Lines .....                                       | 059626   |
| Crossarm Braces for Distribution Pole Lines .....                         | 022560   |
| Fired Wedge Connectors for Primary and Secondary Distribution Lines ..... | 066194   |
| Formed Insulator Ties for ACSR and Aluminum Conductors .....              | 052990   |
| Marking, Numbering, and Identification of Line Structures .....           | 022168   |
| UO Standard S2321, "Migratory Bird Protection" .....                      | S2321    |
| Miscellaneous Hardware for Overhead Line Construction .....               | 058778   |
| Overhead Transformer Installation .....                                   | 056425   |
| Packaged Crossarm Hardware Kits .....                                     | 015077   |
| Pin, Post, and Dead-End Insulators for Distribution Lines .....           | 022088   |
| Raptor Concentration Zones for Overhead Lines .....                       | 068181   |
| Slack Span Construction for Distribution Lines .....                      | 061112   |
| Standard Framing for Tangent Construction Distribution Pole Lines .....   | 066196   |
| Strength Requirements for Wood Crossarms .....                            | 015202   |
| Triangular Primary Construction Wood Pole Distribution Lines .....        | 041541   |

Raptor-Safe Construction and Wildlife Protection

Protective Material Details (continued)

Perch and Perch Deterrents

Notes

1. The triangular perch deterrent may be installed to discourage perching between closely spaced phases or cutouts and can be used in lieu of moving or replacing arms in retrofit applications. The perch guard has adjustable legs for 6-inch to 24-inch spacing. Use 1/4" x 2-1/2" washer-head lag screws (Code 196212) for fastening to the crossarm. Use two deterrents (one for each arm) with double crossarm construction.
2. Elevated perches may be used to provide birds with an alternate perching site. However, because raptors may still try to perch below an elevated perch, perch guards must also be used in combination with the elevated perch. Attach the perch to poles with 5/8-inch bolts. Attach the perch to crossarms with a U-bolt, Code 188133.
3. Plastic spike-type perch deterrents (Code 560963) may be used to discourage perching between closely spaced cutouts or steel brackets. These come in 24-inch lengths and must be cut to fit as indicated in Figure 36 on Page 24. Attach the plastic perch deterrents by using plastic ties or lag screws. Note: These spikes shall not be used where nests have been found as they can provide an attractive basis upon which to build a nest, and that could become a problem. Spikes also shall not be used on poles which do not provide a safe place to land (such as on a crossarm with adequate space or cover-up).

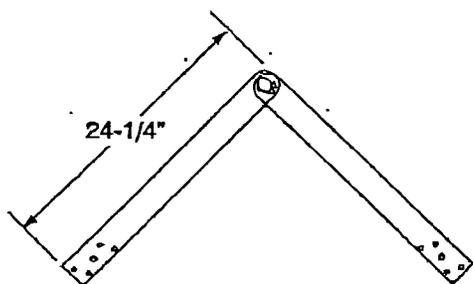


Figure 31  
Perch Deterrent  
Code 560312

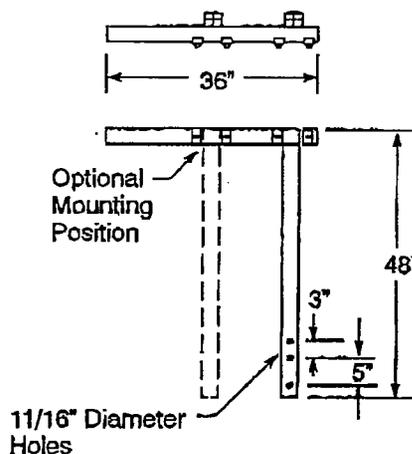


Figure 32  
Elevated Perch  
Code 560311

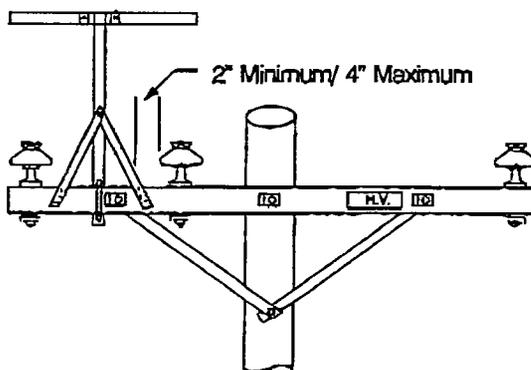


Figure 33  
Perch and Perch Guard Combination  
Use One or More Sets as Required by Conductor Spacing

|   |                           |
|---|---------------------------|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |                           |
| <b>Technical Area</b>   | <b>Cultural Resources</b> |

**Technical Area: Cultural Resources**

**Author: Dorothy Torres**

**If a response reveals archaeological site locations, please submit it under confidential cover.**

**BACKGROUND**

The applicant sent letters describing the project to Native Americans on October 10, 2003. The NAHC provided the applicant with a list of Native American contacts in the area. Letters were sent to all the individuals and groups on the list provided by the NAHC. The letter from the NAHC states, "If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received." The SPPE indicated that no responses had been received.

***REQUEST:***

- |     |   |
|-----|---|
| 13. | Please provide a copy of the map that was included as an attachment to the letters Native Americans.  |
| 14. | Please provide copies of any responses from Native Americans received in writing.   |
| 15. | If responses were not received by October 30, 2003, please provide telephone logs of the NAHC requested follow-up telephone calls or other evidence that the materials were received. |

***RESPONSE:***

**DR 13**

A copy of the letter and map provided to the Native American Heritage Commission is included as Attachment Cultural DR-13.

**DR 14**

Included, as Attachment Cultural DR-14, is a copy of the September 24, 2003 letter received from the Native American Heritage Commission. No other correspondence was received from any Native American groups.

## **DR 15**

No responses from the Native Americans have been received as of January 14, 2004. A copy of the letter sent to the Native American groups and an updated telephone log are included as Attachment Cultural DR-15.

## **BACKGROUND**

To conduct an analysis, staff needs to identify all built environment resources that are older than 45 years that could be impacted by the project.

## **REQUEST:**

16. Please provide a characterization of the project vicinity completed by an architectural historian or an historian with a background in industrial, architectural, or public history that meets the Secretary of Interior's Professional Standards.
  - a. Describe buildings, features and structures around the project area that could be affected (directly or indirectly) by the proposed project (whether residential or industrial). The discussion may be limited to an area one property deep, bordering on the project site (or across a road), new access roads or laydown areas; unless there is an obvious potential historic resource that may be impacted that is not within the specified one property limit.
  - b. Identify all buildings or structures that are 45 years or more old.
  - c. Specifically include a discussion regarding potential impacts to the setting of historic built environment resources. If the setting of an historic resource will be impacted by the project, please provide a Department of Parks and Recreation form (DPR 523) form including an evaluation.
  - d. If the transmission line that will be replaced is more than 45 years old, please provide a DPR 523 form including an evaluation.
  - e. If the Malaga Substation is more than 45 years old, please provide a DPR 523 form including an evaluation.
  - f. Canals were important to the development of the Fresno area. Please provide DPR 523 forms for The Central Canal and Fresno Colony Canal, if they are more than 45 years old. If it appears that they will be impacted by the project, please also provide an evaluation form.
  - g. Railroads were also important to the development of the Fresno area. Please record railroads, adjacent to the project, older than 45 years of age a DPR 523 form. If a railroad segment will be impacted by the project, please provide an evaluation form.

**RESPONSE:**

**DR 16**

A response will be provided on or before February 13, 2004.

**BACKGROUND**

At times local historical or archaeological societies may have knowledge of cultural resources that have not been recorded.

**REQUEST:**

17. Please contact local historic and archaeological associations or societies and request information regarding any cultural resources within ½ mile of the project. Please provide copies or summaries of any information obtained from these sources.
18. If any such resources are identified that could be impacted by the project or could have their immediate surroundings altered (change in the integrity of the setting) by this project in such a manner that the significance of the historical resource would be materially impaired, please provide the following:
  - a. If it has not been recorded on a Department of Parks and Recreation (DPR) 523 form, then please record the cultural resources on the DPR 523 form and provide a copy of the form.
  - b. A discussion of the significance of the resources under CEQA Section 15064.5(a), (3), (A)(B)(C) and (D) and provide staff with a copy of the assessment and the specialist's conclusions regarding the significance.

**RESPONSE:**

**DR 17&18**

The only local historic and archaeological association or society identified within one-half mile of the KRCDDP is the Fresno City and County Historical Society. A letter was sent on December 29, 2003 to request any information on possible cultural resources within the area. A copy of the letter is included as Attachment Cultural DR-17. As a follow-up Ms. Sharon Hiigel, Museum Curator was contacted by phone on January 5, 2004. Although Ms. Hiigel has not been able to conduct a thorough research, she is not aware of any historical resources in the area. She has notified other members of the society for their comments and will contact the project if any are received.

**BACKGROUND**

To clarify the locations of potential cultural resources over the age of 45 years it is necessary to identify the cultural resources in relation to the proposed project.

***REQUEST:***

19. On a figure similar to Figure 1.2-3 in the cultural section of the SPPE, please identify the location of archaeological or built environment (buildings, structures etc.) that are 45 years or more old. Please limit the identification to cultural resources that are adjacent to or may be impacted by the project. (Note: If the map contains archeological site location information please file it under confidential cover.)

***RESPONSE:***

**DR 19**

A response will be provided on or before February 13, 2004.

**ATTACHMENT  
CULTURAL DR-13**



Native American Heritage Commission  
915 Capitol Mall, Room 364  
Sacramento, CA 95814  
(916) 653-4082; Fax (916) 657-5390

September 8, 2003

*RE: CULTURAL RESOURCES INVENTORY OF PROPOSED 18-ACRE ELECTRICAL PEAKER FACILITY PROJECT LOCATED ON NORTH AVENUE, COMMUNITY OF MALAGA, FRESNO, FRESNO COUNTY, CALIFORNIA*

Dear Native American Heritage Commission:

William Self Associates has recently been contracted to conduct a record search and archaeological survey of a proposed electrical Peaker facility an 18-acre parcel located on North Avenue, ½-mile west of the intersection with Willow Avenue, Malaga, Fresno, Fresno County (see attached maps). The project area is located in Township 14 South, Range 20 East, Section 25 of the Malaga (1964 PR 1981), USGS topographic quadrangle.

We bring this project to the attention of the Native American Heritage Commission with the desire to obtain, from your office, pertinent information regarding prehistoric, historic and/or ethnographic land use and sites of Native American traditional or cultural value that might be known to exist within the project vicinity, as depicted in the Sacred Lands database or other files. We would also appreciate obtaining a list of interested Native American tribal entities or individuals for the project area. We have contacted the Northwest Information Center at Sonoma State University to review their files as part of the background research on the project.

We would appreciate a response, at your earliest convenience, should you have information relative to this request. Should you have any questions, I can be reached at (925) 253-9070.

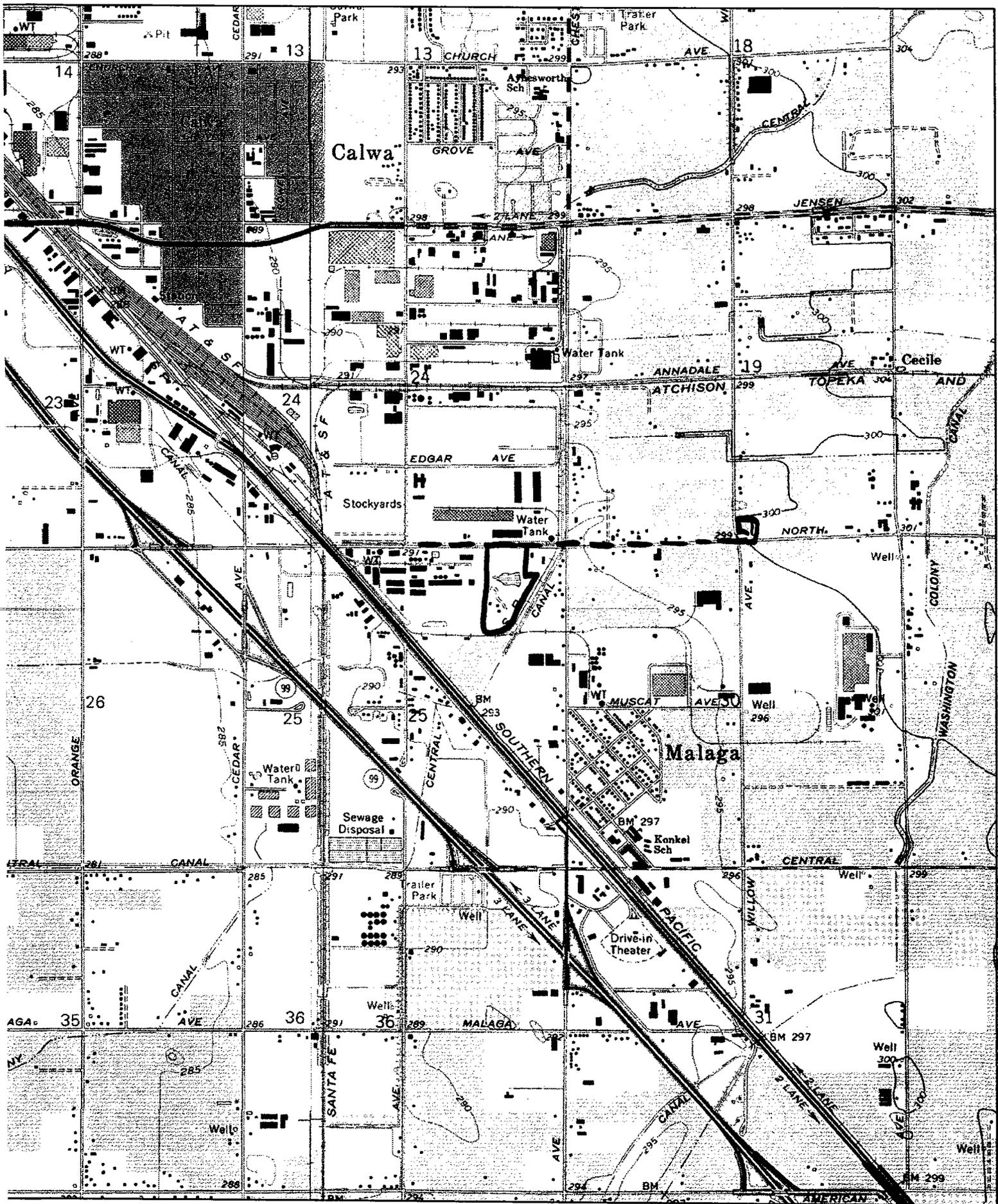
Thanks again for your assistance.

Sincerely,

**WILLIAM SELF ASSOCIATES**

Leigh Martin  
Senior Archaeologist

Attachment



Name: MALAGA  
 Date: 12/29/2003  
 Scale: 1 inch equals 2000 feet

Location: 036° 41' 23.6" N 119° 44' 22.1" W

**ATTACHMENT  
CULTURAL DR-14**

STATE OF CALIFORNIAGray Davis, Governor**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-4082  
Fax (916) 657-5390  
Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)



September 24, 2003

Leigh Martin  
WSA Inc  
PO Box 2192  
61d Avenida de Orinda  
Orinda CA 94563

Sent By Fax: 925-254-3553  
No. of Pages: 2

**RE: Proposed 18-acre Electrical Peaker Facility Project on North Avenue, Community of Malaga, Fresno County.**

Dear Mr. Martin:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4040.

Sincerely,

A handwritten signature in black ink, appearing to read "Rob Wood".

Rob Wood  
Environmental Specialist III

**ATTACHMENT  
CULTURAL DR-15**



October 2, 2003

To All Addressees on Attached List

Re: Proposed 18-acre Kings River Conservation District (KRCD) Electrical Peaking Plant on North Avenue, community of Malaga, Fresno County

Dear NAHC Fresno County Native American Contacts:

William Self Associates, Inc. (WSA) has been contracted by the KRCD to assess potential impacts to cultural resources as part of their proposed 18-acre electrical peaking plant located on North Avenue between south Maple Avenue and Chestnut Avenue. The project area is located in Township 14 South, Range 20 East, Section 25 of the Malaga (1964 PR 1981), USGS topographic quadrangle.

In accordance with CEC Guidelines, each Native American contact on the Heritage Commission list will be notified and their comments sought as part of the project environmental review process. A record search at the Northwest Information Center and a field survey of the project location did not indicate the presence of recorded or observable Native American sites or resources in the immediate project area, or within a ¼-mile radius. The attached map illustrates the location of the project area.

WSA, on behalf of the County of Fresno, would appreciate receiving any comments you may have regarding cultural resources or sacred sites issues within the immediate project area. If you could provide your comments in writing to the address below, or call me, we will make sure the comments are provided to the City of Fresno as part of the environmental assessment of the project.

We look forward to your response before October 17, 2003, if possible. Thank you for your assistance.

Sincerely,

Leigh A. Martin  
Senior Archaeologist

Attachment

**NATIVE AMERICAN CONTACTS**  
Fresno County  
September 24, 2003

Santa Rosa Rancheria  
Clarence Atwell, Chairperson  
P.O. Box 8  
Lemoore, CA 93245  
(559) 924-1278  
(559) 924-3583 Fax

|       |
|-------|
| Tache |
| Tachi |
| Yokut |

Table Mountain Rancheria  
Lee Ann Walker Grant, Chairperson  
P.O. Box 410  
Friant, CA 93626-0  
(559) 822-2587  
(559) 822-2693 FAX

|       |
|-------|
| Yokut |
|-------|

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 70501.5 of the Health and Safety Code, Section 5097.04 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed 18-acre Electrical Power Facility Project on North Avenue, Community of Meigs, Fresno County.

**Table 1. KRCD Peaking Plant Project,  
Record of Native American Contacts and Comments**

| <i>Fresno County<br/>Yokut/Tache/Tachi<br/>Native American Contacts</i> | <i>Date of<br/>Notification<br/>Letter</i> | <i>Response<br/>to Letter<br/>(Date)</i> | <i>Date of<br/>Phone<br/>Contact</i> | <i>Comments</i>   |
|---|--|--|--------------------------------------|---|
| Santa Rosa Rancheria<br>Clarence Atwell<br>Tribal Chairperson           | 10/02/03                                   | None                                     | 10/17/03<br>10/30/03<br>1/5/04       | Left message on answering machine<br>No answer.<br>No answer.   |
| Table Mountain Rancheria<br>Lee Ann Walker Grant<br>Tribal Chairperson  | 10/02/03                                   | None                                     | 10/17/03<br>10/30/03<br>1/5/04       | Left message.<br>Left message.<br>Contacted John Goodfellow<br>(Environmental Resources); no<br>comments. |

**ATTACHMENT  
CULTURAL DR-17**



December 29, 2003

Fresno City and County Historical Society  
7160 West Kearny Blvd.  
Fresno, CA 93706

Re: Proposed 18-acre Kings River Conservation District (KRCD) Electrical Peaking Plant on North Avenue, Community of Malaga, Fresno County.

Dear Fresno City and County Historical Society Contacts:

William Self Associates, Inc. (WSA) has been contracted by the KRCD to assess potential impacts to cultural resources as part of their proposed 18-acre electrical peaking plant located on North Avenue between south Maple Avenue and Chestnut Avenue. The project area is located in Township 14 South, Range 20 East, Section 25 of the Malaga (1964 PR 1981), USGS topographic quadrangle.

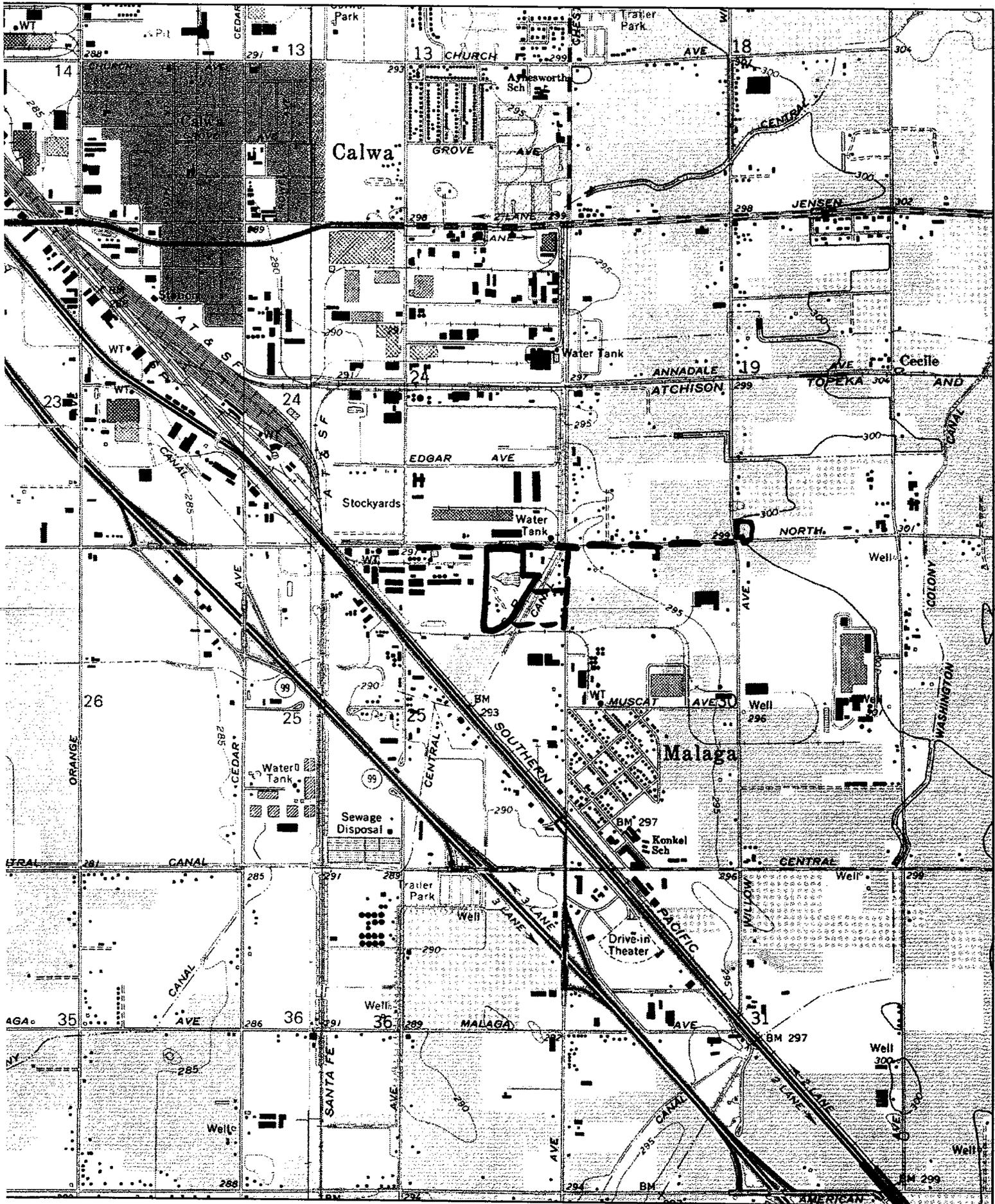
In accordance with California Energy Commission (CEC) Guidelines, local historical societies will be notified for information on any known historic resources within a ½-mile radius of the project area as part of the project environmental review process. A record search at the Southern San Joaquin Valley Information Center and a field survey of the project location did not indicate the presence of recorded historic or prehistoric sites or resources in the immediate project area, or within a one-mile radius. The attached map illustrates the location of the project area.

WSA, on behalf of the County of Fresno, would appreciate receiving any comments or information you may have regarding possible cultural resources within the immediate project area. We look forward to your response before January 17, 2004, if possible. Thank you for your assistance.

Sincerely,

Leigh A. Martin  
Senior Archaeologist

Attachment



Name: MALAGA  
 Date: 12/29/2003  
 Scale: 1 inch equals 2000 feet

Location: 036° 41' 23.6" N 119° 44' 22.1" W

|   |                         |
|---|-------------------------|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |                         |
| <b>Technical Area</b>   | <b>Energy Resources</b> |

**Technical Area: Energy Resources**

**Author: Kevin Robinson, Steve Baker**

**BACKGROUND**

As designated in the SPPE application, the applicant states that PG&E has determined that its current infrastructure is capable of delivering the required quantity of gas to the KRCDPP (PG&E, 2003) (KRCD 2003a, SPPE § 4.2).

***REQUEST:***

- |  |
|--|
| 20. Please supply the referenced letter from PG&E discussing their capability and willingness to supply natural gas to the KRCDPP. |
|--|

***RESPONSE:***

**DR 20**

A copy of the gas service letter from PG&E dated August 21, 2003 is included as Attachment Energy DR-20.

**ATTACHMENT  
ENERGY DR-20**

**Pacific Gas and Electric Company**

77 Beale Street  
San Francisco, CA 94105

*Mailing Address*

Mail Code B16A  
P.O. Box 770000  
San Francisco, CA 94177  
415/973-7000

**Via Mail and Fax**

August 21, 2003



Mr. Jack Sinor  
Kings River Conservation District  
4886 E. Jensen Avenue  
Fresno, CA 93725-1899

**Subject: Gas Service to Kings River Conservation District**

Dear Mr. Sinor:

Pursuant to Kings River Conservation District's (Applicant) application received June 5, 2003 for gas service to KRCD Peaking Project – Malaga Site, following is Pacific Gas & Electric Company's (PG&E) response to Applicant's Preliminary Application for Gas Service.

Applicant requested information on a gas service to a proposed KRCD Peaking Project – Malaga Site (Facility) located near 2611 East North Avenue, Fresno, California. PG&E has assumed a requested gas load of 1050 MMBtu/hr at a requested gas service delivery pressure of 675 psig, for a gas service date of September 1, 2004.

Any changes to Applicant's proposed volumetric needs, or to the demand on PG&E's system, could result in modifications to any comments PG&E makes herein. These pressures are based on computer models, which contain various assumptions and uncertainties and, therefore, represent our best estimate of expected pressures.

**Standard Facilities Design:** To serve the Facility with a Standard Facilities Design at prevailing gas delivery pressure, PG&E would likely install approximately 150 feet of six-inch steel pipe extension from its existing transmission pipeline to the meter set. PG&E estimates the Standard Facilities Design will be able to provide unregulated service to the plant (floating at prevailing transmission pressure) at a minimum delivery service pressure of 200 psig downstream of the meter set.

Mr. Jack Sinor  
August 21, 2003  
Page 2

**Standard Facilities Design:**

The total order-of-magnitude (plus or minus 50 percent) estimated costs follow:

| Total Estimated Costs for Standard Facilities Design at Prevailing Delivery Pressure | Costs +/- 50% |
|--|---------------|
| 1. Install ~150 feet of 6-inch steel pipe extension                                  | \$75,000      |
| 2. Install 8-inch turbine meter and regulation                                       | \$160,000     |
| 3. Sub Total:  | \$235,000     |
| 4. Income Tax Contribution of Construction (22% of 3.)                               | \$52,000      |
| 5. Total Project Costs – Standard Facilities Design                                  | \$287,000     |

Costs do not include allowances, if any.

**Special Facilities Design:**

Pursuant to Applicant's request, PG&E also provides a Special Facilities System Impact Study for elevated service delivery pressure. To serve the Facility with a Special Facilities Design at elevated service delivery pressure, PG&E would need to reinforce its existing transmission pipeline with approximately 1.5 miles of 12-inch steel pipeline. PG&E estimates that this design would provide Applicant with an estimated minimum pressure of 250 psig downstream of the meter set. The incremental cost for the Special Facilities Design and the service would be subject to Gas Rule 2, Special Facilities, and subject to Cost of Ownership and ITCC for the incremental costs.

If Applicant wishes PG&E to proceed with an order-of-magnitude cost for Special Facilities Design, please notify PG&E.

If you have any questions about this information, please call me at 415-973-2908 or Mike O'Brien at 415-973-5652.

Sincerely,



Rodney A. Boschee  
Manager, Contract Development and Management

Cc: Max Walenciak  
Navigant Consulting, Inc.

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Geology and Paleontology**

**Technical Area: Geology and Paleontology**  
**Author: Patrick A. Pilling, Ph.D., P.E.**

**BACKGROUND**

No legend for fault types is shown on Figure 5.11-2.

***REQUEST:***

21. Please provide a complete legend including fault types for Figure 5.11-2.

***RESPONSE:***

**DR 21**

A legend describing the symbols used for the faults has been added to Figure 5.11-2 from the KRCDPP SPPE. A revised version of Figure 5.11-2 is included as Attachment Geology DR-21.

**BACKGROUND**

A geologic map showing the KRCDPP site and adjacent area (to a radius of at least 2 miles) was not included in the SPPE application.

***REQUEST:***

22. Please provide a geologic map showing geologic units at and adjacent to the KRCDPP site.

***RESPONSE:***

**DR 22**

Figure 5.11-a, a geologic map with geologic units showing the KRCDPP site with a radius of least 2 miles is included as Attachment Geology DR-22.

**BACKGROUND**

The Central Valley Thrust Fault System is not shown on Figure 5.11-2 or described in the text.

**REQUEST:**

23. Please provide a discussion of the impacts to the plant site and associated linear facilities from the Central Valley Thrust Fault System.

**RESPONSE:**

**DR 23**

Figure 5.11-2 (Attachment Geology DR-21) has been modified to include the Central Valley (Great Valley) Thrust Fault System. The Great Valley Thrust Fault System consists of a series blind thrust faults with the shallowest depth occurring about 7 kilometers below the surface (U.S. Geological Survey Open File Report 96-705, Database of Potential Sources for Earthquakes Larger than Magnitude 6 in Northern California). The fault system has been detected through geophysical surveys and is located based on truncated dipping beds and earthquake activity. The fault system trends northwest-southeast and dips to the west, away from the KRCDPP facilities. The most recent seismic activity on the Great Valley Thrust Fault System, in the vicinity of the KRCDPP, was the 1983 Coalinga earthquake, which registered a 6.7 magnitude on the Richter Scale. There were no apparent surface features or ground ruptures to indicate the presence of this fault (Mualchin, 1996).

The KRCDPP facilities are located east of the Great Valley Thrust Fault System. The fault system is not expected to rupture ground surface at the facility. Effects of earthquakes on the fault system are likely to cause ground shaking at the KRCDPP facilities.

References:

Mualchin, L., 1996. A Technical Report to Accompany the CALTRANS California Seismic Hazard Map. Prepared for CALTRANS by the Office of Earthquake Engineering. July 1996.

**BACKGROUND**

Section 5.11.2.4 and Table 5.11-1 describe active and potential faults in the vicinity of the KRCDPP plant site.

**REQUEST:**

24. Please clarify this description to verify if these faults should be described as "active and potentially active" faults.

**RESPONSE:**

**DR 24**

Section 5.11.2.4, Local Seismicity, and Table 5.11-1, Active and Potential Faults, of the KRCDPP SPPE have been modified to clarify the description of these faults as presented below:

A number of active and potentially active faults occur along the eastern and western boundaries of Fresno County and have the potential of producing high-magnitude earthquakes (Fresno County, 2000). Active and potentially active faults nearest to the proposed KRCDPP are shown in Table 5.11-1. Active faults are defined as faults along which movement has occurred during the Holocene time (within the last 11,000 years). Potentially active faults are defined as faults showing evidence of displacement during Quaternary time (about 1.6 million years).

The nearest identified fault near KRCDPP is the Clovis fault. The fault is located about 14 miles northeast of the property. There has been no evidence of displacement on the fault during the Quaternary period (Jennings, 1994).

There are no active faults with the potential for ground rupture (i.e., defined Alquist-Priolo Special-Fault Study Zones) within Fresno County (Fresno County, 2000). However, these faults have the potential to produce ground shaking within the county. The KRCDPP project site is located in Seismic Zone 3 of the 1999 Uniform Building Code (UBC).

| <b>Fault System</b>                           | <b>Approximate Distance and Direction from the KRCDPP</b> | <b>Alquist-Priolo Special Study Area</b> |
|---|---|--|
| Ortogonalita                                  | 65 miles northwest  | Yes                                      |
| Great Valley Thrust Fault System <sup>1</sup> | 63 miles southwest  | No                                       |
| Nunez   | 50 miles southwest  | Yes                                      |
| San Andreas                                   | 65 miles southwest  | Yes                                      |
| White Wolf                                    | 115 miles south   | Yes                                      |
| Pond Poso Creek <sup>2</sup>                  | 72 miles south  | Yes                                      |
| Owens Valley                                  | 88 miles east   | Yes                                      |

<sup>1</sup>The 1983 Coalinga earthquake occurred on this fault system.  
<sup>2</sup>Fault creep associated with groundwater withdrawal (Jennings, 1994).

Maximum credible earthquakes and peak site acceleration for the major faults systems will be addressed in a site-specific geotechnical report, to be prepared prior to construction of the proposed KRCDDP.

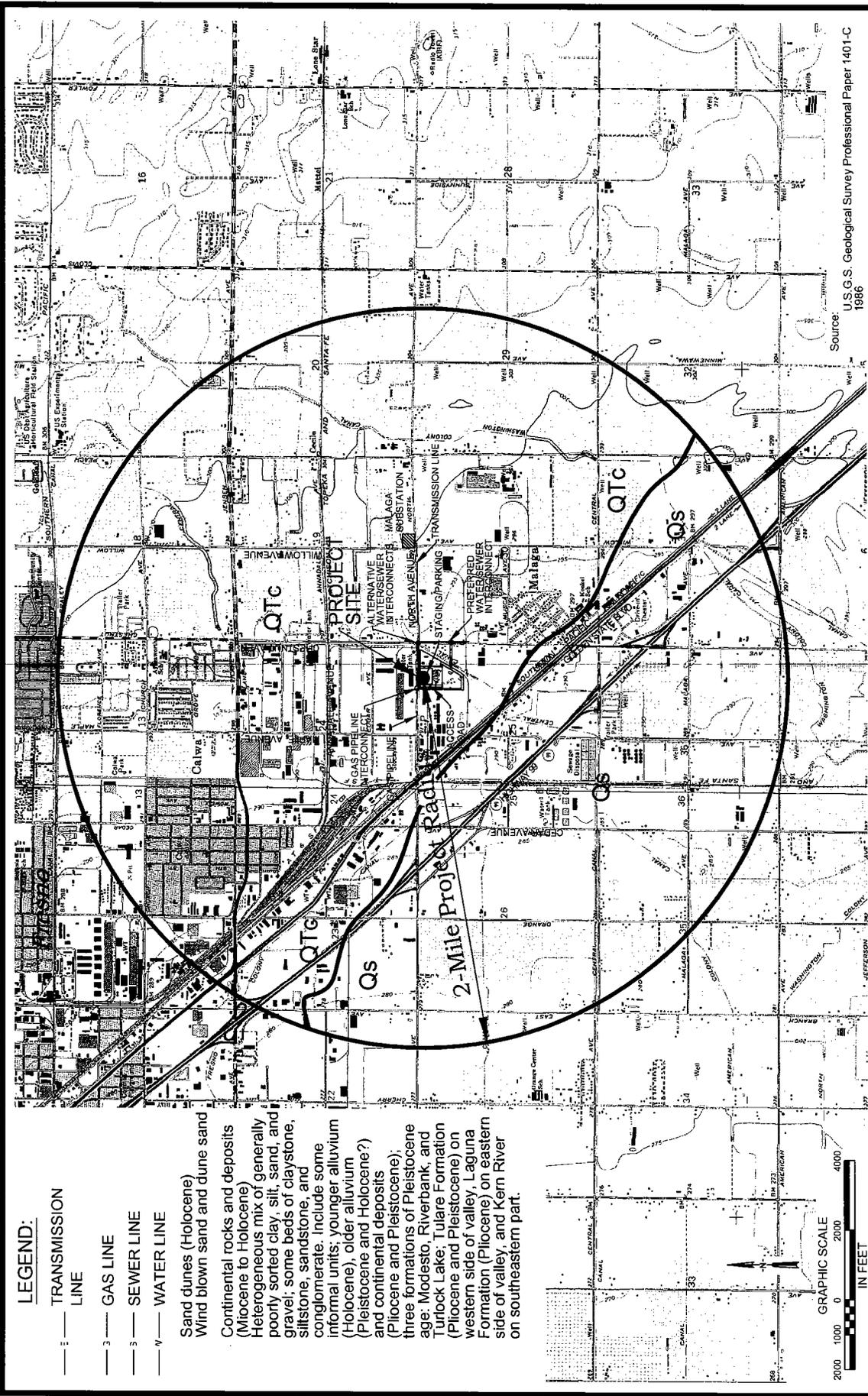
**ATTACHMENT  
GEOLOGY DR-21**

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**ATTACHMENT  
GEOLOGY DR-22**

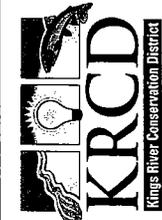
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**LEGEND:**

- TRANSMISSION LINE
- GAS LINE
- SEWER LINE
- WATER LINE

Sand dunes (Holocene)  
 Wind blown sand and dune sand  
 Continental rocks and deposits (Miocene to Holocene)  
 Heterogeneous mix of generally poorly sorted clay, silt, sand, and gravel; some beds of claystone, siltstone, sandstone, and conglomerate. Include some informal units; younger alluvium (Holocene), older alluvium (Pleistocene and Holocene?) and continental deposits (Pliocene and Pleistocene); three formations of Pleistocene age: Modesto, Riverbank, and Turlock Lake; Tulare Formation (Pliocene and Pleistocene) on western side of valley, Laguna Formation (Pliocene) on eastern side of valley, and Kern River on southeastern part.



**FIGURE 5.11-1a**  
 Area Geology Within Two Miles  
 Of KRCDDPP Site  
 KRCDDPP

Source: U.S.G.S. Geological Survey Professional Paper 1401-C  
 1986

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Land Use**

**Technical Area: Land Use**

**Author: Ken Peterson**

**BACKGROUND**

The Land Use section refers to 5 residences in the vicinity of the project site (p. 5.5-4). The Noise section refers to approximately 21 residences and a church apparently within a mile of the project site (p. 5.2-6) that are not discussed in the Land Use section or clearly marked on maps. Similarly, the Malaga Elementary School, located approximately .62 mile from the project site, is discussed in the Traffic and Transportation section (p. 5.7-6), but not in the Land Use section.

***REQUEST:***

25. Please mark the above land use features (i.e., all residences, schools, and churches that are within one mile of the project site) on a color map of the site and vicinity. We suggest a 1:24,000 scale map which is the scale used by the U.S. Geological Survey for its 7.5 minute quadrangle topographic maps.

***RESPONSE:***

**DR 25**

A land use map displaying residences, schools and churches in the KRCDPP project area in included as Attachment Land Use DR-25.

**BACKGROUND**

Figure 5.5-1, Primary Land Use Designations In The KRCDPP Project Area, does not clearly show or explain the General Plan land use designations for the area within one mile of the project site. The general plan designation for the project site is not discussed in the SPPE application.

**REQUEST:**

- |     |    |   |
|-----|----|---|
| 26. | a. | Please submit a color map (the same map produced for Data Request can be used) with clear labeling of general plan land use designations for the area within one mile of the project site, and an explanation of any acronyms found in the map legend. We suggest a 1:24,000 scale map. |
|     | b. | Please discuss the general plan designation of the project site.  |

**RESPONSE:**

**DR 26**

Figure 5.5-2 located in the KRCDPP SPPE outlines the General Plan Land Use (Zoning) designations for the area within one mile of the project site. Fresno County was contacted on December 29, 2003 to verify that there have been no changes to this map, which was previously provided to KRCDPP in June 2003. Fresno County said there may be future changes, but they have not been finalized. The changes, if any, will not be released until the General Plan is finalized and no official date has been set for the completion of the General Plan. At this time, this map is the most current information available to KRCDPP.

Fresno County has designated the project site as being located in an industrial sector of the county, intermingled with a small percentage of Commercial, Unclassified, Agriculture, Single Family and Office designations (as shown on KRCDPP SPPE Figure 5.5-2 "Zoning Designations In The KRCDPP Project Area").

References:

Garcia, Anthony. GIS Coordinator, Fresno County. Personal Contact December 29, 2003.

**BACKGROUND**

The Land Use section refers to the project site as being located in Fresno County's Roosevelt Community Planning Area, and the project as being in compliance with the Roosevelt Community Plan (p. 5.5-10). This section also states that projected development for the Community of Malaga is outlined in the Roosevelt Community Plan generated by the City of Fresno (p. 5.5-14).

**REQUEST:**

- |     |    |  |
|-----|----|--|
| 27. | a. | Please state whether both of these Roosevelt Community Plan citations refer to the same document.  |
|     | b. | Please discuss the relationship between the City and the County in planning for the area that includes the project site and the community of Malaga. |

***RESPONSE:***

**DR 27**

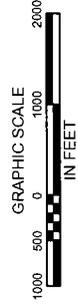
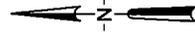
- a. Both of these Roosevelt Community Plan citations refer to the same document.
  
- b. The City of Fresno boundary is the centerline of North Avenue. The County of Fresno has jurisdiction of the project site, as shown in KRCDPP SPPE Figure 5.5-3. The project site is located in the Community of Malaga.

**ATTACHMENT  
LAND USE DR-25**



**LEGEND**

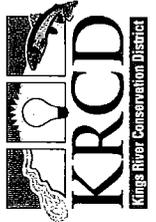
-  APARTMENTS
-  CHURCH
-  MANUFACTURED HOME PARK
-  ONLY MANUFACTURED HOMES
-  SINGLE FAMILY RESIDENTIAL
-  SCHOOL



**FIGURE 5.5-1a**

Residences, Schools, and Churches Within  
One Mile of The KRCDPP Project Area

**KRCDPP**



|   |                                 |
|---|---------------------------------|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |                                 |
| <b>Technical Area</b>   | <b>Water and Soil Resources</b> |

**Technical Area: Water and Soil Resources**

**Author: Antonio Mediati**

**BACKGROUND**

The SPPE Application for the Kings River Conservation District Peaking Plant (KRCDPP) project proposes to use the evaporation of potable water derived from groundwater for heat rejection associated with the inlet air cooling system. The potable water will be supplied by Malaga County Water District (MCWD). The groundwater basin is severely overdrafted. The KRCDPP project proposes to use approximately 75 acre-feet per year of water from this overdrafted basin contributing to the overdraft.

**REQUEST:**

- |  |
|--|
| <p>28. Please provide a detailed description of other non-potable water supplies and alternative cooling technologies and their feasibility for use at KRCDPP. In the discussion of reclaimed water, please provide a detailed description as to the availability and feasibility of the use of reclaimed water, including but not limited to, quantity, quality, pretreatment requirements, pipeline construction costs, and treatment plant reliability.</p> <p>29. If other water sources and alternative cooling technologies are determined to be infeasible, please provide a detailed description of the measures that will be employed to reduce the potential impacts of the use of groundwater from an over-drafted basin to a level that is less than significant. Impacts to the groundwater basin would be considered to be less than significant if the measures employed ensure no net increase in groundwater withdrawal as a result of the KRCDPP.</p> <p>30. Please provide the Kings River Conservation District <i>2002 Annual Groundwater Report for Kings River Service Area</i>, and any preliminary analysis for 2003 that is available.</p> |
|--|

**RESPONSE:**

**DR 28**

The only non-potable water source near the KRCDPP project site is the use of secondary or tertiary treated effluent from the Malaga Waste Water Treatment Facility (MWWTF). This alternative water supply was evaluated as a potential water source for domestic, cooling and process water demands. The MWWTF is owned and operated by the Malaga County Water District (MCWD) and is located approximately one mile south and west of the proposed

KRCDPP project site. The applicant has consulted with MCWD's Engineer and has prepared this response accordingly.

The tertiary facilities at the MWWTF do not operate on a 24 hours schedule, nor does it operate year-round. The MWWTF operates approximately 8 hours per day. It does not normally operate during holidays or weekends. The typical annual operational period for the tertiary facilities at the MWWTF is from March to October, which coincides with the normal irrigation season for the Central Valley. The MCWD has indicated that it would like to reduce the operation of the plant as much as possible, claiming that tertiary treatment is expensive compared to the cost of discharging secondary effluent into the existing disposal ponds. To provide effluent discharge reliability of the tertiary system for the applicants needs, the applicant would be responsible in keeping the tertiary plant of the MCWD in operation. The MWWTF does not have a redundant filtering system, chlorine contact chambers, pumping facility or chemical feed lines, therefore cannot guarantee that all effluent water leaving the plant will be treated to tertiary standards. This would require the KRCDPP to develop redundant treatment facilities at the MWWTF or at the KRCDPP site to meet the water quality needs of the plant and allowable water quality standards at the point of discharge from the MWWTF tertiary facility.

To use this alternative water supply, a new pipeline would have to be constructed to the KRCDPP project site. Construction of this pipeline would be difficult, given the infrastructures that exist between the KRCDPP and MWWTF. Located between the MWWTF and KRCDPP are three Union Pacific Railroad tracks, two major highways (Golden State Freeway and State Route 99), the Central Canal and also one of its diversions, North Central Canal both of which are operated and maintained by Fresno Irrigation District (FID). A preliminary cost breakdown of this interconnection as reported in a memorandum by the MCWD Engineer to the applicant indicates that total anticipated costs of the pipeline would be approximately \$1 million dollars. A copy of the MCWD memo is included as Attachment Water DR-28.

An alignment for the pipeline required has not been determined. Actual construction costs would vary based upon other factors, such as crossing the second canal, property easements, etc. Additional factors such as permitting and timing necessary to obtain permitting also play a role in the use of MWWTF effluent water. Several permits would require changes: National Pollutant Discharge Elimination System (NPDES) (4 – 6 months), Waste Discharge Requirements (4 – 6 months), NPDES Construction (6 months), County of Fresno Encroachment (6 months), CalTrans Encroachment (6 months), Railroad Crossing (6 months), permit to cross FID canal(s) (3 months). The FID permit to cross canals will also be limited by time of year. Typical allowable construction window for crossing FID canal is between November and February, conceivably, this could set construction of the canal crossing to November 2005.

In order to provide the KRCDPP with reliable fire protection and potable water, KRCDPP must connect to the MCWD existing water system. An additional cost of approximately \$370,000 would be incurred if the applicant connects to the existing MCWD water system. An alternative to connection with MCWD for fire protection for the KRCDPP would be the use of on-site storage and generators. This alternative would use effluent water from the MWWTF. In either case, the applicant will need to interconnect to MCWD for potable water supply.

Test results show the effluent from the MWWTF had a relatively high specific Electro-Conductivity (EC) of 980 mhos in September 2003. It is the understanding of the applicant through conversation with the MCWD Engineer, that this was actually a low value, in that the normal EC from the effluent is >1000 mhos. The tertiary treatment process uses Sodium Bisulfite as a dechlorinating agent. This provides 100% removal of chlorine but also increases the EC level of the effluent. Typically, the potable water supply from the MCWD system has an EC value of 350 – 400 mhos.

The MWWTF is currently permitted (NPDES) to discharge a single point effluent at a rate of 0.35 million gallons per day (mgd) (approximately 243 gallons per minute). Modification of the point of discharge or use of the treated effluent would require an application to the Regional Water Quality Control Board to modify the NPDES permit. Effluent from the plant is sent into the Central Canal for use downstream as irrigation water. The use of this water lowers overall pumping in a severely over-drafted portion of the Central Valley Basin. Currently, no mounding of groundwater occurs below the MWWTF.

Reference:

Taylor, Michael. Malaga County Water District Engineer. Memorandum, "Supplement information regarding water supply". December 31, 2003.

**DR 29**

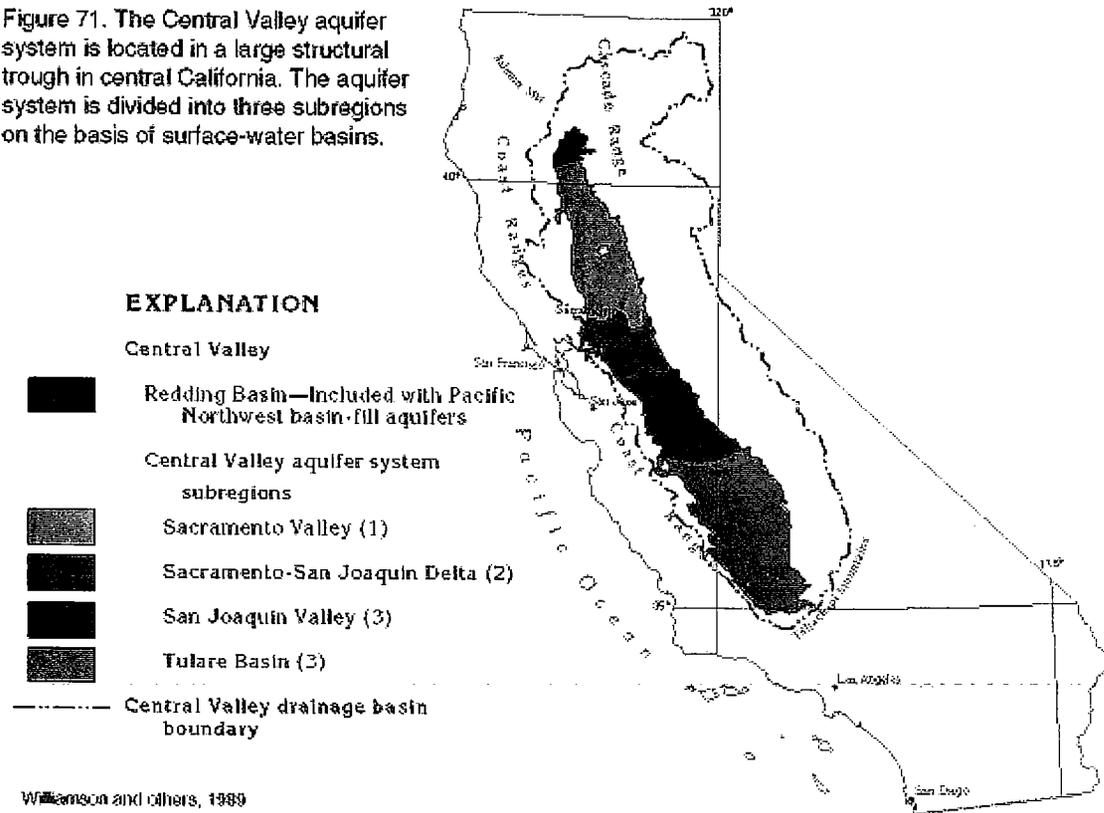
The applicant proposes the use of 75 to 100 acre-feet of surface water runoff from the Kings and San Joaquin Rivers to reduce the potential impacts the KRCDPP may impose on the overdrafted groundwater basin. The applicant will work conjunctively with the Fresno Irrigation District (FID) to generate and facilitate a plan to recharge purchased surface water into a basin(s) located in the Kings River service area every year for the operational life of the KRCDPP. A copy of a letter from FID, discussing the groundwater recharge plan is included as Attachment Water DR-29. Sites currently being considered for this recharge water would have a direct local benefit to the basin that underlies Malaga. FID is a local agency developed to protect and manage the surface and groundwater resources of the FID in order to meet the present and future water needs of the people and lands within the FID.

The Malaga Waste Water Treatment facility (MWWTF) currently sends its effluent water into the Central Canal and American Colony Canal that takes the water to a southwest portion of the valley. This water assists in decreasing known groundwater overdraft pumping in that area.

According to the United States Geological Survey website, "...recent investigations indicate that the Central Valley contains a single heterogeneous aquifer system that contains water under unconfined, or water-table, conditions in the upper few hundred feet; these conditions grade into confined conditions with depth. The confinement is the result of numerous overlapping lens-shaped clay beds..." (Figure 71). This single heterogeneous aquifer, known as the Central Valley Aquifer system covers the entire Central and Sacramento Valley's. It is "...structural trough about 400 miles long and from 20 to 70 miles wide and extends more than 20,000 square miles...". It is then divided into 3 different sub-regions, based on different characteristics of surface-water basins. The KRCDPP lies within the San Joaquin Valley sub-region. Within the

San Joaquin Valley sub-region, the KRCDDP lies within the Tulare Basin. “The Tulare Basin is named for the Tulare Lake, a lake that covered much of the basin during the Pleistocene Epoch.”

Figure 71. The Central Valley aquifer system is located in a large structural trough in central California. The aquifer system is divided into three subregions on the basis of surface-water basins.



“Under natural, or predevelopment, conditions, recharge from rainfall and snowmelt entered the aquifer system as seepage from streams that channel runoff from the surrounding mountains into the valley. Most recharge are at the margins of the valley, and the ground water moves in the subsurface to lower altitudes and discharges into surface-water bodies that drain each basin.”

“By the early 1960’s, intensive groundwater development had significantly lowered water levels and altered ground-water flow patterns in the Central Valley aquifer system. By far the most dramatic impact of development was in the San Joaquin Valley, where water-level declines in the confined part of the aquifer system were locally more than 400 feet. Although predevelopment flow was toward San Joaquin River throughout most of the basin, large withdrawals from deep wells in the western and southern parts of the aquifer system changes the direction of horizontal flow in the confined part of the system until the water moved toward the withdrawal centers. Also, because the magnitude of the withdrawals caused hydraulic heads in the confined parts of the aquifer system to fall far below the altitude of the water table, the vertical hydraulic gradient was reversed over much of the San Joaquin Valley. As a result, much of the water in the upper unconfined zone of the aquifer system that flow laterally toward the river under predevelopment conditions leaked downward through the confining beds into the lower confined aquifer after development.”

Bibliography:

[http://capp.water.usgs.gov/gwa/ch\\_b/B-text3.html](http://capp.water.usgs.gov/gwa/ch_b/B-text3.html), 1995, Accessed December 23, 2003.

Kings River Conservation District. Annual Groundwater Report 2001. Kings River Conservation District, 2002.

Stanton, Dale. Assistant General Manager, Fresno Irrigation District. January 08, 2003 letter, "Malaga Community Groundwater Recharge"

**DR 30**

The "draft" analysis for 2002 – 2003 annual groundwater report for the Kings River service area is currently under KRCD review. It is anticipated to be available in late February 2003. The data analysis for Spring 2002 and Spring 2003 will be available in the groundwater report. The raw well data for Spring 2002 and Spring 2003 are available upon request.

**DR 31**

KRCDPP equipment areas that possess a potential for storm water contamination, such as the chemical storage areas or transformer areas, shall be designed with secondary containment basins to prevent contaminants from entering the storm water system. The ammonia tank and generator step-up transformer containment basins shall be designed with automatic sump pumps equipped with ammonia sensors and oil minder switches to prevent accidental discharge of contaminated water to the storm water system.

KRCDPP process water that may be contaminated will be collected and sent to an oily water separator and then recycled for plant use. The design will prevent this water from being discharged to the storm system.

**ATTACHMENT  
WATER DR-28**

BOARD OF DIRECTORS

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## MALAGA COUNTY WATER DISTRICT

3580 SOUTH FRANK STREET - FRESNO, CALIFORNIA 93725  
PHONE (559) 485-7353 - FAX (559) 485-7319

### MEMORANDUM

To: Kings River Conservation District, Scott Redelfs  
Malaga County Water District, John Leyva

From: Michael Taylor, Malaga County Water District Engineer 

Subject: Supplemental information regarding water supply

Date: January 8, 2004

This memorandum is intended to supplement information regarding the potential of using treated effluent as the water supply for the proposed Kings River Conservation District Peaker Plant (KRCDPP) project.

#### CAPACITY

It has been noted that the Malaga County Water District (MCWD) wastewater treatment facilities includes tertiary filtration and an NPDES Permit to discharge effluent to the Fresno Irrigation District Central Canal. The existing NPDES Permit limits discharge to 0.35 mgd (equivalent to an average flow of 243 gallons per minute).

#### NPDES Permit

The MCWD NPDES Permit allows for discharge of treated effluent to an agricultural irrigation canal for beneficial reuse. Modification of the point of discharge or use of the treated effluent would require an application to the Regional Water Quality Control Board to modify the NPDES Permit and associated conditions. Modification of the point of discharge and use of the effluent is not presently necessary for the MCWD and would only serve the proposed peaking plant.

#### OPERATION PERIOD

Typical operation of the tertiary facilities is limited to the normal work schedule of the treatment plant operators. Therefore, typical operation of the filter is approximately 8 hours per day. In addition, the tertiary filter is intended to be used during irrigation water deliveries of the Fresno Irrigation District, generally from March through October of each year. The MCWD has operated the tertiary facilities most of the months of the past two years to provide additional capacity in the existing disposal ponds. During that period of time there have been several extended periods when the tertiary facilities have not been operated.

However, it is the intention of the MCWD to reduce operation of the tertiary facilities to March through October of each year. Operating costs of the tertiary filtration facilities and associated chemicals and testing greatly exceed alternative discharge to the existing disposal ponds.

The MCWD may require compensation for additional operational costs associated with having the tertiary facilities operated beyond MCWD requirements.

EQUIPMENT REDUNDANCY

The tertiary facilities do not contain redundant filters, chlorine contact chamber, pumping facilities, or chemical feed lines. Therefore, the MCWD is not in a position to guarantee delivery of tertiary treated effluent at all times.

EFFLUENT CHARACTERISTICS

Please find attached a copy of an analysis of the tertiary treatment effluent for your review.

ANTICIPATED CONSTRUCTION COST OF DELIVERY PIPELINE

A preliminary analysis of the anticipated construction cost for a pipeline from the wastewater treatment facilities to the proposed KRCDPP is summarized as follows:

|                               |      |    |        |           |
|-------------------------------|------|----|--------|-----------|
| Permitting                    | 1    | LS |        | \$ 75,000 |
| Design                        | 1    | LS |        | \$100,000 |
| Pumping facilities            | 1    | LS |        | \$100,000 |
| Pipeline                      | 6300 | LF | @\$60  | \$378,000 |
| Crossing of SR 99             | 300  | LF | @\$300 | \$ 90,000 |
| Crossing of Golden State Blvd | 300  | LF | @\$300 | \$ 90,000 |
| Crossing of RR                | 300  | LF | @\$300 | \$ 90,000 |
| Crossing of FID Canal         | 100  | LF | @\$300 | \$ 30,000 |
| Subtotal                      |      |    |        | \$953,000 |

A final alignment for the proposed pipeline between the wastewater treatment facilities and the KRCDPP has not been determined. Actual construction costs may vary accordingly. In addition, legal costs and costs associated with any necessary easements or land acquisitions are not known at this time.

In addition, the MCWD would anticipate that the project would require connection to the MCWD water distribution system to provide for fire protection and potable water supply. As stated in previous correspondence, it is estimated that construction of the water and sewer system extensions may be approximately \$370,000.

## PERMITS

It is anticipated that permits for construction and operation of the facilities necessary to deliver treated effluent to the proposed KRCDPP include, but may not be limited to:

- Modification to the NPDES permit issued by the Regional Water Quality Control Board
- Modification to the Waste Discharge Requirements issued by the Regional Water Quality Control Board
- NPDES Construction Permit
- County of Fresno Encroachment Permit
- Caltrans Encroachment Permit
- Railroad Crossing Permit
- Permit to cross FID Canal(s)

An environmental review and certification of the project will be required prior to completion of design and permits. It is anticipated that the environmental process may require approximately 6 months to complete.

It is anticipated that processing of the modifications to the NPDES permit and Waste Discharge Requirements may require an additional 4 to 6 months subsequent to completion of the environmental process.

Similarly, a Caltrans Encroachment Permit may require 6 months subsequent to completion of the environmental process. The conditions for a County of Fresno Encroachment Permit is anticipated to be obtained within this same 6 month period.

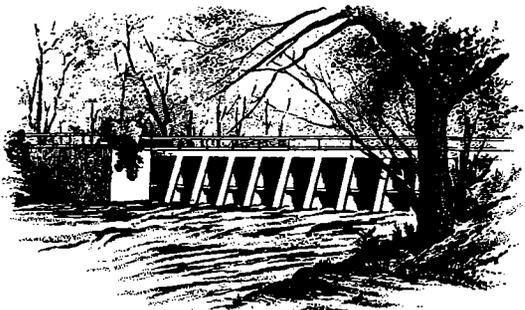
The Railroad Crossing Permit may require 6 months for processing.

A permit to cross FID Canal(s) may require approximately 3 months. However, it should be noted that a typical allowable construction window for crossing an FID canal is between November and February. If the environmental and permitting process was initiated in February, 2004, it is feasible that final construction document approval may not be completed until February, 2005. Construction of the crossing(s) of FID canals might not be allowed until November, 2005.

The NPDES Construction Permit would be obtained by the Contractor on behalf of the owner of the project upon initiating construction.

**ATTACHMENT  
WATER DR-29**

---



Your Most Valuable Resource - Water

OFFICES OF  
**FRESNO**  
**IRRIGATION DISTRICT**

PHONE (559) 233-7161  
FAX (559) 233-8227  
2907 SOUTH MAPLE AVENUE  
FRESNO, CALIFORNIA 93725-2218

January 13, 2004

Mr. Scott Redelfs, Director of Resources  
Kings River Conservation District  
4886 E. Jensen Avenue  
Fresno, CA 93725

RE: Malaga Community Groundwater Recharge

Dear Mr. Redelfs:

During our meeting of January 8, 2004, it was explained that the Kings River Conservation District (KRCD) has need to reduce the potential impact of approximately 75 acre-feet of pumped groundwater that will be used at the planned peaking power plant located at the southwest corner of Chestnut and North Avenues. This water is to be provided by the Malaga County Water District. In order to lessen the potential impact of the pumped groundwater from the regionally overdrafted groundwater aquifer, it was indicated that KRCD would consider recharging up to 100 acre-feet annually.

The Fresno Irrigation District is a strong proponent of groundwater recharge and aggressively pursues partnering with other agencies such as yours in groundwater recharge projects. FID fully intends to support and assist where necessary your efforts to conduct groundwater recharge. We look forward to working with you on this project and see no difficulty in meeting your recharge objectives.

Sincerely,

Dale Stanton  
Assistant Manager  
Fresno Irrigation District

**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Traffic and Transportation**

**Technical Area: Traffic and Transportation**  
**Author: James Adams, Eileen Allen**

**BACKGROUND**

The electric transmission and water sewer pipeline construction activities and associated lane closures will impact local traffic flow during construction.

***REQUEST:***

32. Please identify the impact that the transmission line and water/sewer pipelines construction may have on local business and on street parking, and describe the mitigation measures planned to minimize the impact.

***RESPONSE:***

**DR 32**

For the most part, construction of the linear facilities associated with the KRCDPP (i.e. transmission, gas, sewer and water interconnections) will be out of the traveled way during normal working hours. Traffic controls will also be implemented as necessary for both construction activities on the shoulder of local roadways and for those construction activities that may temporarily impact traffic lanes. Examples of traffic control plans that would be used during construction are included as Attachment Traffic DR-32. These traffic control plans include information mitigating potential traffic impacts including the locations of signing, lighting and traffic control device placement. Traffic control plans will be developed prior to construction activities.

In addition, and to mitigate for the potential for impacts on local businesses and on street parking, all the applicable business owners and property owners will be contacted prior to construction in order to coordinate construction activities to minimize impacts on traffic and parking and to ensure that appropriate access to homes and businesses remains.

All necessary encroachment permits will be obtained from the County of Fresno and other agencies as applicable and all permit conditions complied with.

**ATTACHMENT  
TRAFFIC DR-32**

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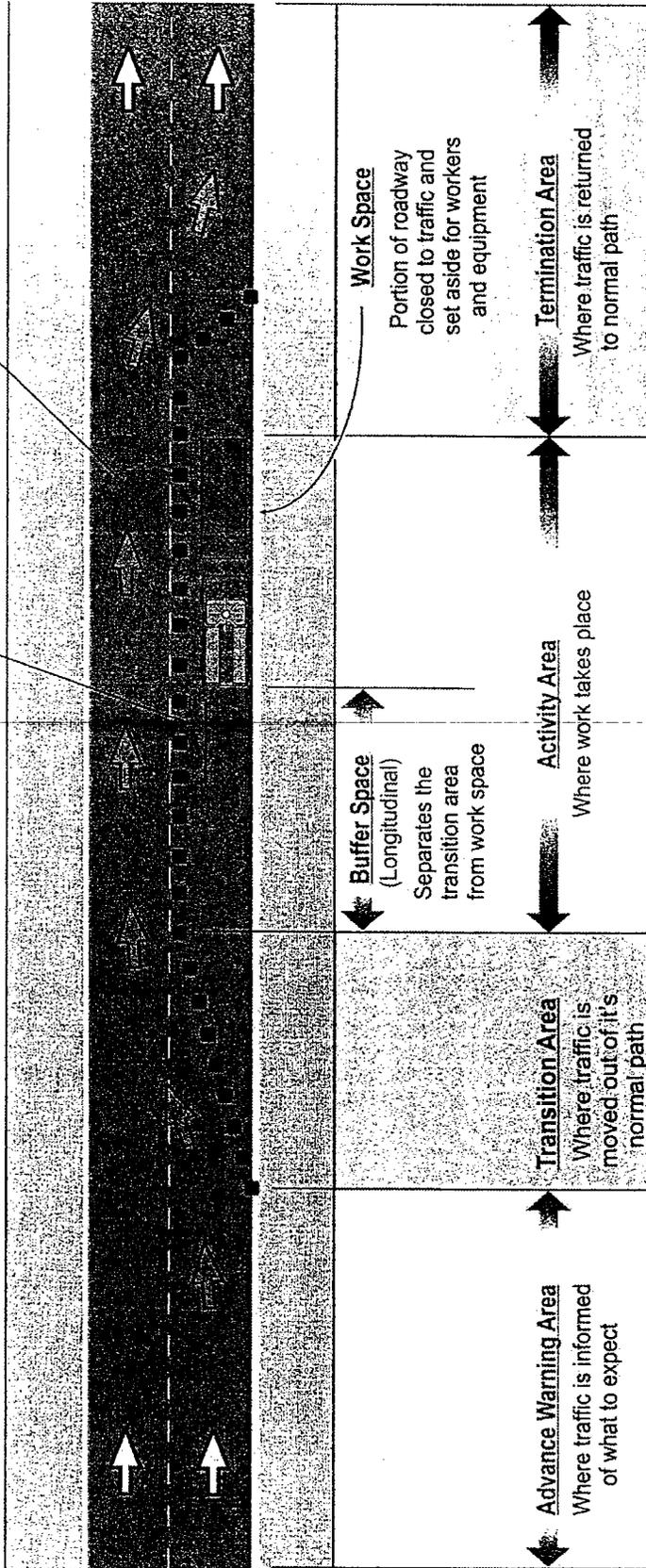
# UTILITY TRAFFIC CONTROL COMPONENTS

## Component Parts of a Temporary Traffic Control Zone

Most temporary traffic control zones can be divided into four areas in the order that drivers encounter them.

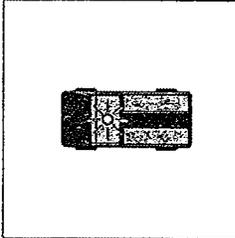
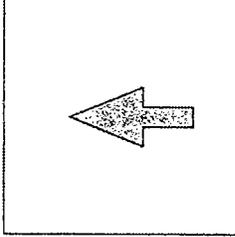
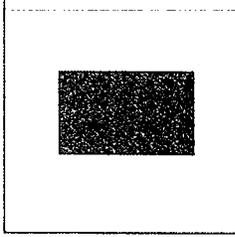
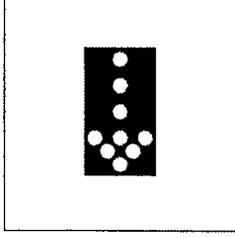
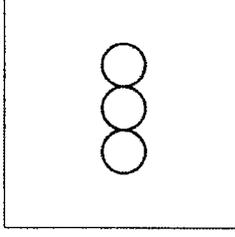
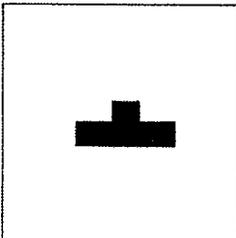
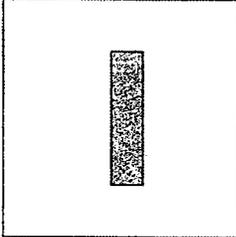
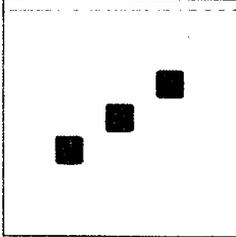
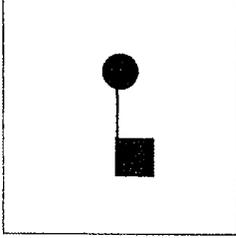
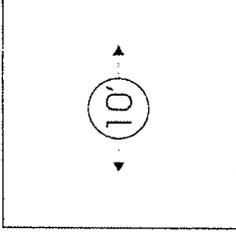
**Buffer Space (Lateral)**  
Separates traffic space from work space

**Traffic Space**  
The portion of the roadway where traffic is routed



# UTILITY TYPICAL APPLICATIONS

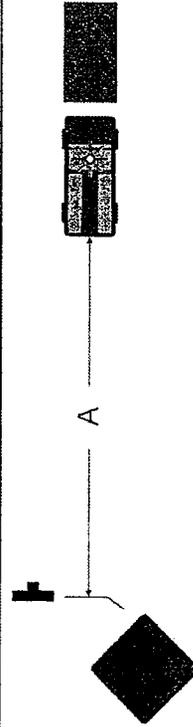
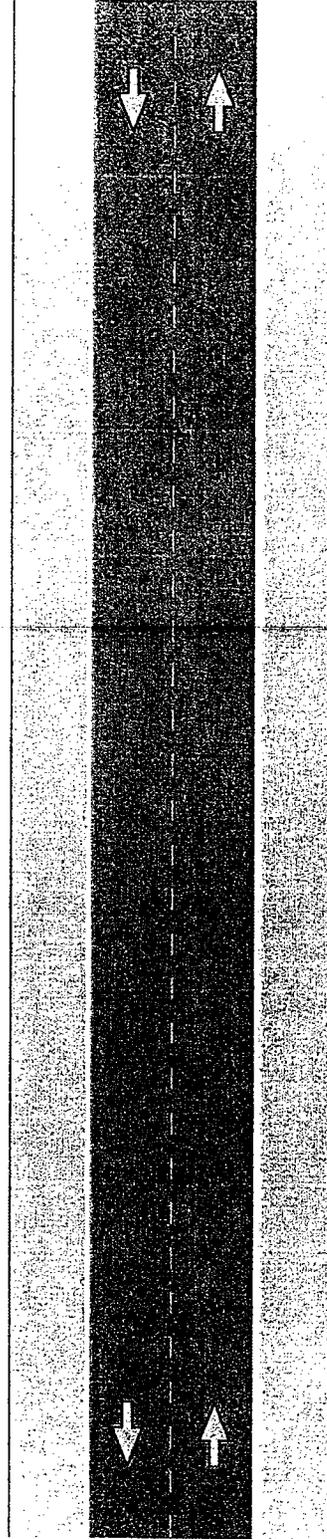
## Symbols used in Utility Typical Application diagrams:

|  |  |   |  |  |
|--|--|---|--|--|
|   |   |   |   |   |
|  |  |  |  |  |

## UTILITY TYPICAL APPLICATIONS

### UTA-1 Work Beyond the Shoulder

1. WORKER SYMBOL sign not required if the work space is 15 feet or more from the edge of any roadway. The WORKER SYMBOL sign should be used if motorists may be distracted by the work activity.
2. If the work space is in the median of a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.
3. For short-term, short-duration, or mobile operation, all signs and channelizing devices (cones, etc.) may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



| SIGN SPACING           | DISTANCE |
|------------------------|----------|
| ROAD TYPE              | A        |
| Urban - 25 MPH or less | 200'     |
| Urban - 30 MPH or more | 350'     |
| Rural                  | 500'     |
| Expressway/Freeway     | 1000'    |

SEE:

• TABLE 1 for Buffer Length (page 26)

• TABLE 4 for "L" & Channelizer  
(cones, etc.) Quantity (page 28)

NOTE: LOCAL REGULATIONS MAY VARY.

PGEFM1A

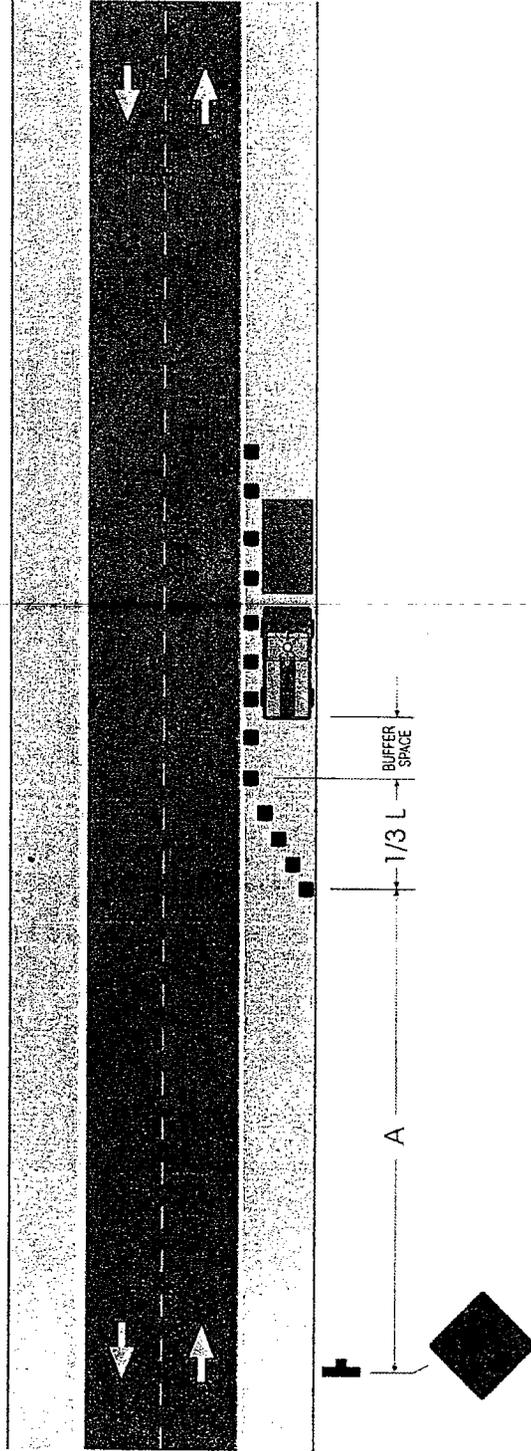
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## UTILITY TYPICAL APPLICATIONS

### UTA-2 Work on Shoulders

1. A WORKER SYMBOL sign should be placed on the left side of a divided or one-way roadway if only the left shoulder is affected.
2. For short-duration operations 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

NOTE: When no lane encroachment is required, "W" equals width of existing, adjacent lane.



| SIGN SPACING           | DISTANCE |
|------------------------|----------|
| Urban - 30 MPH or more | A        |
| Rural - 30 MPH or more | 200'     |
| Expressway/Freeway     | 350'     |
|                        | 500'     |
|                        | 1000'    |

SEE:

• TABLE 1 for Buffer Length (page 26)

• TABLE 4 for "L" & Channelizer (cones, etc.) Quantity (page 28)

NOTE: LOCAL REGULATIONS MAY VARY.

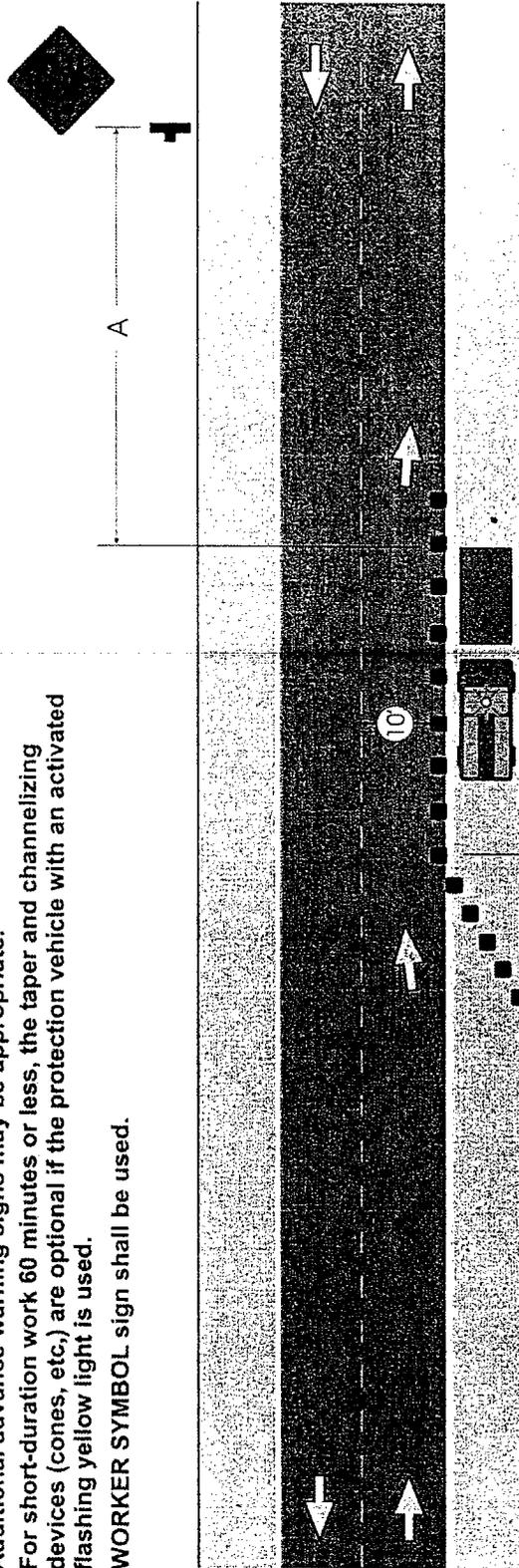
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**UTILITY TYPICAL APPLICATIONS**

**UTA-3 Shoulder Work with Minor Encroachment**

1. May be used on a minor road having low speed volume. For higher speed traffic conditions, a lane closure should be considered.
2. The lane must be at least 10' wide
3. Where the opposite shoulder is suitable for carrying traffic and of adequate width, traffic lanes may be shifted by use of closely spaced channelizing devices, provided 10-foot-wide lanes are maintained.
4. Additional advance warning signs may be appropriate.
5. For short-duration work 60 minutes or less, the taper and channelizing devices (cones, etc.) are optional if the protection vehicle with an activated flashing yellow light is used.
6. WORKER SYMBOL sign shall be used.



NOTE: Due to reduced offset, "W" = width of adjacent lane.

SEE:

- TABLE 1 for Buffer Length (page 26)
- TABLE 4 for "L" & Channelizer (cones, etc.) Quantity (page 28)

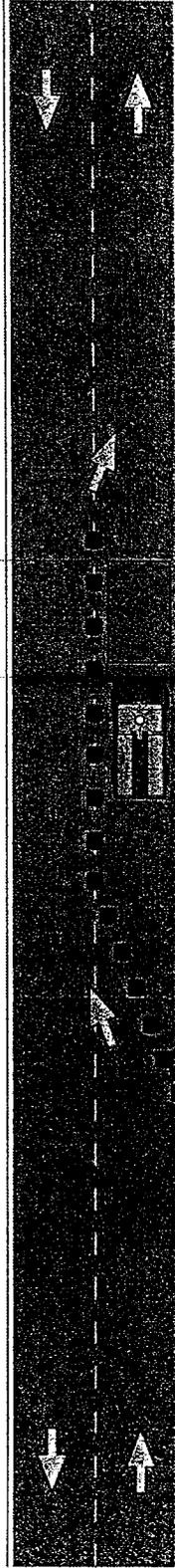
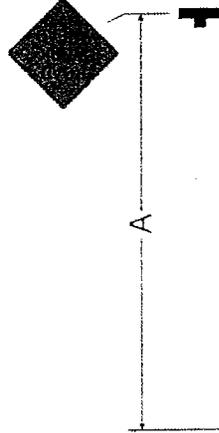
NOTE: LOCAL REGULATIONS MAY VARY.  
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| SIGN SPACING           | DISTANCE |
|------------------------|----------|
| ROAD TYPE              | A        |
| Urban - 25 MPH or more | 200'     |
| Urban - 30 MPH or more | 350'     |
| Rural                  | 500'     |
| Expressway/Freeway     | 1000'    |

**UTILITY TYPICAL APPLICATIONS**

**UTA-4 Lane Closure on Street,  
Self-regulating**

1. The traffic control procedure shown is appropriate only for low-volume, low-speed streets / roads.
2. Traffic can regulate itself when volumes are low and the length of the work space is short, if drivers can readily see the roadway beyond.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
4. The one-lane, two-way roadway is used in advance of an activity area that occupies part of a two-way roadway in such a manner that a portion of the roadway is used alternately by traffic on both directions. Typically, a flagger controls traffic. A short taper of 100 feet maximum with channelizing devices (cones, etc.) at approximately 16 foot spacing should be used to guide traffic into the one-way section.



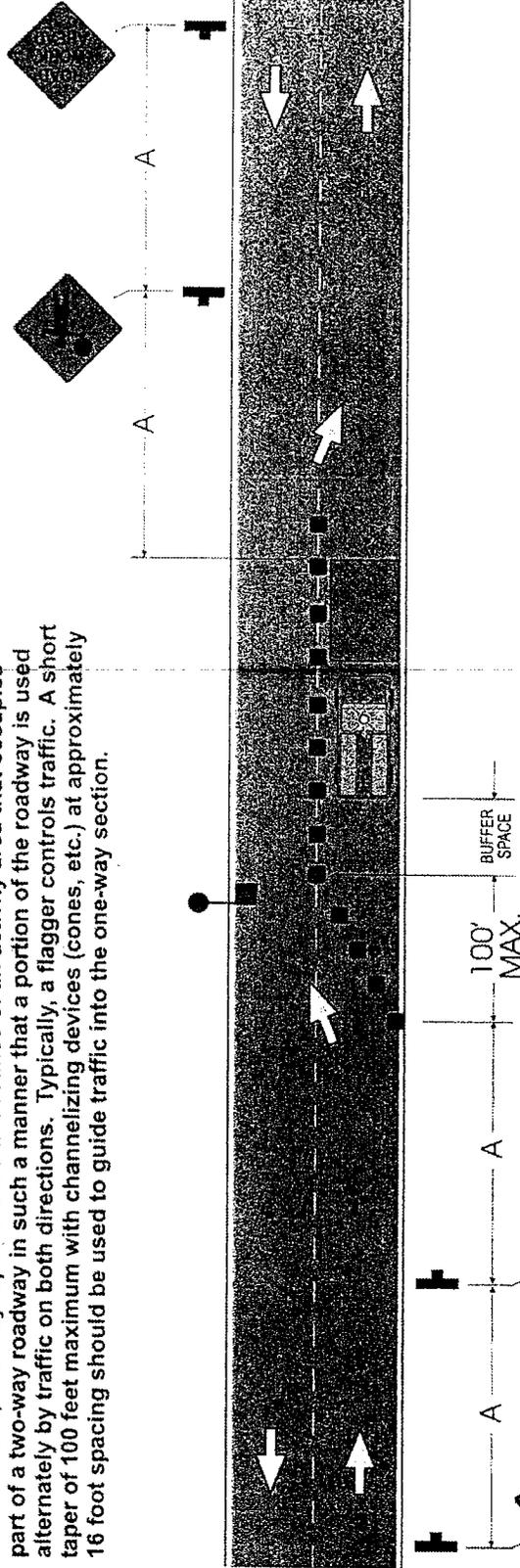
| SIGN SPACING           | DISTANCE |
|------------------------|----------|
| ROAD TYPE              | A        |
| Urban - 25 MPH or less | 200'     |
| Urban - 30 MPH or more | 350'     |
| Rural                  | 500'     |
| Expressway/Freeway     | 1000'    |

SEE:  
 • TABLE 1 for Buffer Length (page 26)  
 • TABLE 4 for "L" & Channelizer (cones, etc.) Quantity (page 28)  
 NOTE: LOCAL REGULATIONS MAY VARY.  
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## UTILITY TYPICAL APPLICATIONS

### UTA-5 Lane Closure on Urban Street, Flagger Control

1. The traffic control procedure shown is appropriate only for low-speed, low-volume streets/roads where traffic cannot regulate itself due to visibility, conditions, volume, etc.
2. A single flagger can regulate traffic when volumes are low and the length of the work space is short, thus enabling drivers to readily see the roadway beyond.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
4. The one-lane, two-way taper is used in advance of an activity area that occupies part of a two-way roadway in such a manner that a portion of the roadway is used alternately by traffic on both directions. Typically, a flagger controls traffic. A short taper of 100 feet maximum with channelizing devices (cones, etc.) at approximately 16 foot spacing should be used to guide traffic into the one-way section.



| SIGN SPACING           | DISTANCE |
|------------------------|----------|
| Urban - 30 MPH or more | A        |
| Rural - 500'           | 200'     |
| Expressway/Freeway     | 350'     |
|                        | 500'     |
|                        | 1000'    |

SEE:

• TABLE 1 for Buffer Length (page 26)

• TABLE 4 for "L" & Channelizer (cones, etc.) Quantity (page 28)

NOTE: LOCAL REGULATIONS MAY VARY.

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|   |  |
|---|--|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |  |
| <b>Technical Area</b>   | <b>Transmission System Engineering</b> |

**Technical Area: Transmission System Engineering**

**Author: Ajoy Guha, P.E.**

**Senior: Al McCuen**

**BACKGROUND**

Staff needs additional information to analyze the reliability impacts and to be confident of identifying the interconnection facilities and any downstream facilities necessary to support interconnection of the Kings River Conservation District Peaking Plant (KRCDPP) to the Pacific Gas and Electric (PG&E) system. Such interconnection should comply with utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, Western Systems Coordinating Council (WSCC) Reliability Criteria, and California Independent System Operator (Cal-ISO) Reliability Criteria.

After reviewing the Application for the Small Power Plant Exemption (SPPE) for KRCDPP and the System Impact Study (SIS) report dated August 20, 2003 prepared by PG&E, staff observes the following:

- Power Flow diagrams were not provided for n-2 contingency studies when post project overload criteria violations have occurred.
- There is no one-line diagram regarding the description of the new 115 kV generator tie line showing the route, and the length of the line has been identified as three-quarters of a mile compared to a half mile as mentioned in the PG&E SIS report (Refer to Chapter 2, Section 2.8.1, Page 12 and Appendix 2.8.1, SIS report, Figure 2-1, Page 2). An existing 115 kV line (Ranchers Cotton Tap) is also shown near the proposed route along North Ave between Chestnut Ave and Willow Ave in Figure 2-2 of the SIS report (SIS report, Page 3).
- Dimensions are missing for Figure 2.8-1.
- It was stated in the Application (Refer to Section 1.2.3, Page 4) that “PG&E will construct, own and operate the transmission interconnection”. But in the SIS report prepared by PG&E (Refer to Appendix 2.8.1, SIS report, Section 3, Page 3) it was stated that “KRCD will engineer, procure, construct, own and maintain its project facility and the 115 kV generator tie line”.
- The single line diagram, Figure 3.11-1, in the Application shows a motor operated 1200 Ampere Line disconnect Switch at the project switchyard for the new 115 kV interconnection line to Malaga Substation. But in the SIS report prepared by PG&E (Refer to Appendix 2.8.1, SIS report, Section 8.3, Pages 11 & 12) it was stated that “The 115 kV breaker to be installed on the Malaga 115 kV bus and at the Kings River Conservation District Peaking Project facility must have two (2) sets of current transformers for each bushing.”

**REQUEST:**

33. Provide Power flow diagrams (MW, percent loading & P. U. Voltage) for n-2 contingency studies where post project overload criteria violations have occurred.
34. Provide electronic copies of the PSLF \*.sav & \*.drw files of all base cases, and EPCL and/or AUTOCON contingency and comparison files. Provide electronic copies of the PSLF \*.dyd and \*.swt dynamic data files for 2005 summer off-peak base case.
35. Resubmit Figure 2.8-1 (refer to the Application for SPPE, Section 2.8.1, Page 12) with necessary dimensions and clearances.
36. Provide a one-line Diagram(s) of the new 115 kV interconnecting overhead line with specifics and details about the mileage, route and termination facilities (Breaker and/or Line switches) at the project end and Malaga Substation. Also clarify who will design, build, own and operate the project switchyard and the new 115 kV interconnection line.

**RESPONSE:**

**DR 33&34**

Attachment Transmission DR-33&34, which is being submitted in electronic format (on compact disk), contains the following files:

- krcdpp\_cont\_comp.zip - contains Autocon contingency and comparison files
- krcdpp\_dynamic.zip - contains basecase dyd and sav files plus all the dynamic switch decks.
- krcdpp\_final\_sprpk\_cases.zip - contains before and after project 2005 spring peak base cases.
- krcdpp\_final\_sumop\_cases.zip - contains before and after project 2005 summer off peak base cases.
- krcdpp\_final\_sumpk\_cases.zip - contains before and after project 2005 summer peak base cases.
- Appendix D.zip - contains the generation tie line route map as shown in the Appendix D of the issued PG&E Facilities Study report, which was previously provided.

Also, and according to Table 6-2 of System Impact Study Report dated, August 20, 2003 (previously provided under separate cover), there are four Category C (or N-2) contingencies that have pre and post project overloads. These four category C contingencies are:

- Reedley 115 kV Bus Outage in the 2005 Summer Peak case;
- Helm-McCall and Panoche-Kearney 230 kV lines outage in the 2005 Heavy Spring case;
- Gates-Gregg and Panoche-Kearney 230 kV lines outage in the 2005 Heavy Spring case;
- and

- Sanger 115 kV Bus Outage in the 2005 Summer Off-Peak case

In the file "N-2 Steady State Power Flow Plots.doc" (which is included as part of Attachment Transmission DR-33&34), there are 12 plots for each of these contingencies to show the pre and post project in the 70 kV, 115 kV, and 230 kV system in the vicinity of KRCDPP. Therefore, this file contains 48 plots.

**DR 35**

Included as Attachment Transmission DR-35, please see a modified version of KRCDPP SPPE Figure 2.8-1, which shows approximate dimensions and clearances for a 60-foot tall wood pole. It is currently assumed that the majority of the transmission poles running along the south side of North Avenue will be 60-foot tall wood poles. There is the possibility that 85-foot tall wood poles would be used in the residential area along this route. Detailed information and actual pole dimensions and clearances will be completed as part of PG&E's detailed design work.

**DR 36**

Please see Attachment Transmission DR-36.

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**ATTACHMENT  
TRANSMISSION DR-33&34**

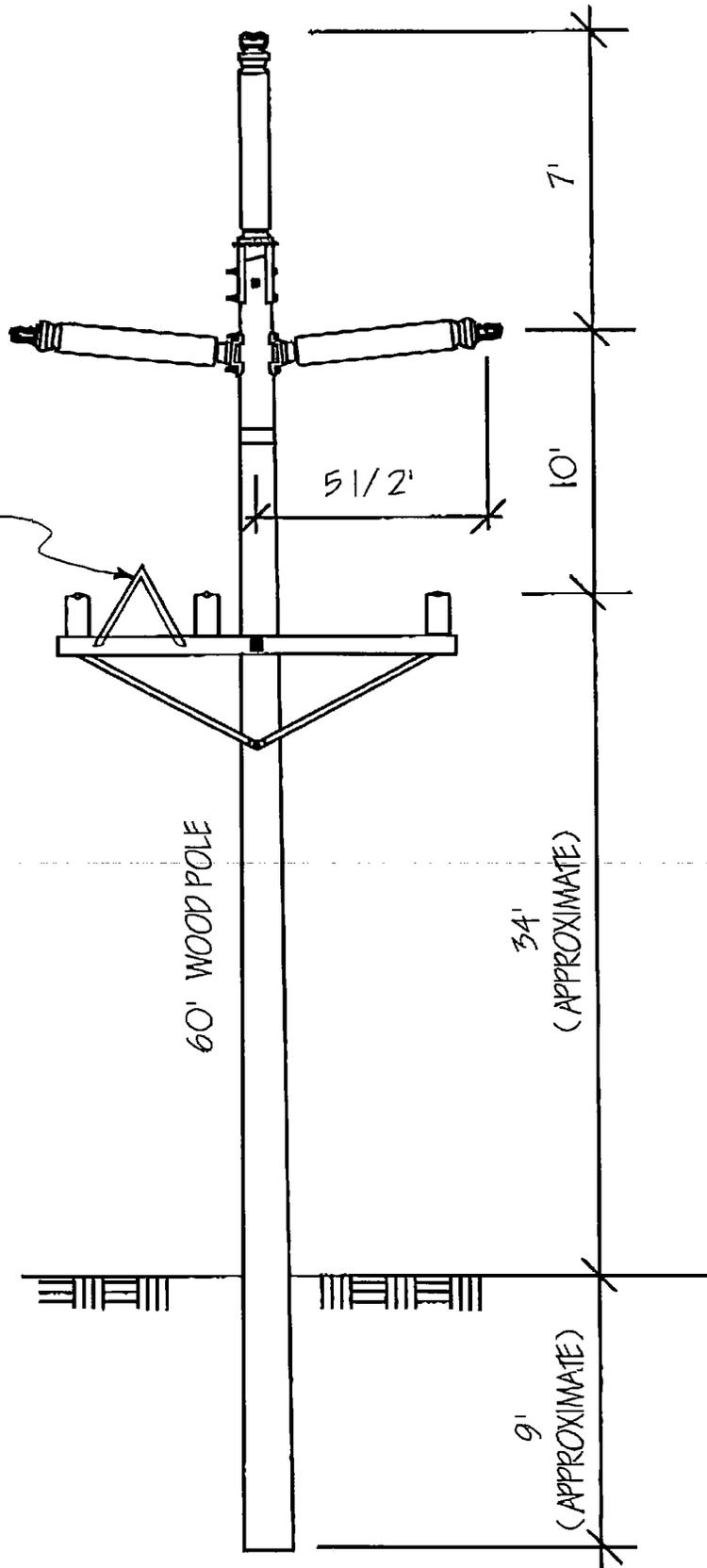
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Five electronic copies (on compact disk) of Attachment Transmission DR-33&34 have been provided.

**ATTACHMENT  
TRANSMISSION DR-35**

---

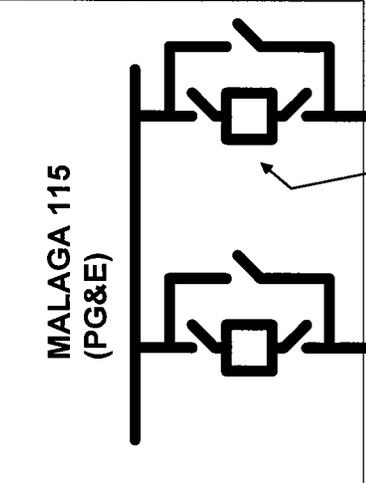
PERCH DETERRENT



SINGLE CIRCUIT  
WOOD POLE CONSTRUCTION

**ATTACHMENT  
TRANSMISSION DR-36**

---



To Sanger  
115KV

PG&E to  
Install New  
115KV  
Breaker &  
Line  
Terminal  
Equipment  
For Sanger  
115KV Line

PG&E to  
Terminate  
KRCDPP  
115KV  
Line Into  
Old Sanger  
Line  
Terminal  
Equipment

Approximately 1/2 MILE of New 795 ACSR  
115KV Line on South Side of E. North Ave.

PG&E Design &  
Construction

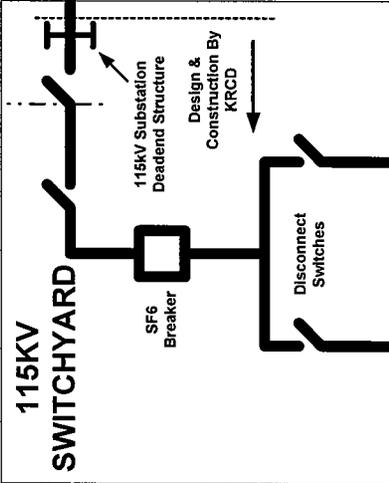
115KV Deadend  
Pole

PG&E installs Vertical to  
Horizontal Rollout Slack Span  
Jumpers To Substation  
Deadend Structure

Design &  
Construction By  
PG&E

PG&E Ownership,  
Operations, &  
Control

KRCD Ownership,  
Operations, &  
Control

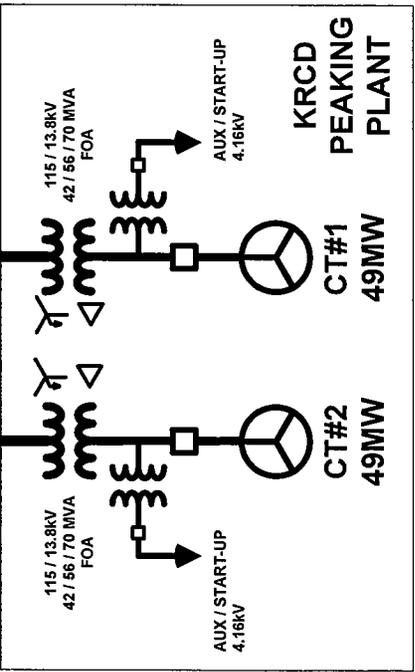


115KV  
SWITCHYARD

SF6  
Breaker

115KV Substation  
Deadend Structure

Design &  
Construction By  
KRCD



KRCD  
PEAKING  
PLANT

CT#1  
49MW

CT#2  
49MW

AUX / START-UP  
4.16KV

AUX / START-UP  
4.16KV

KINGS RIVER CONSERVATION DISTRICT

115KV Line Interconnection  
Construction, Ownership, &  
Operations Demarcation Plan

|   |                         |
|---|-------------------------|
| <b>KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT<br/>DATA REQUEST RESPONSES</b> |                         |
| <b>Technical Area</b>   | <b>Visual Resources</b> |

**Technical Area: Visual Resources**

**Author: Mark R. Hamblin**

**BACKGROUND**

Table 5.4-2, pg. 10 in the application states, "Landscaping at the KRCDPP project site would include a mixture of plants and trees. As part of the site landscape concept, trees would be installed along portions of the northern and eastern boundaries and along the access road from North Avenue to the project site to provide screening from public views."

The applicant is proposing to use landscaping to screen the facility to mitigate a potential visual impact introduced by the proposed facility. The visual resource section of the SPPE application does not provide specifics of the landscaping to be used in order for staff to conclude that it will provide adequate screening of the facility to a less than significant impact under CEQA. Staff requests that the applicant provide specifics of the landscaping that is to be used to screen the facility.

**REQUEST:**

- |  |
|--|
| <p>37. Show on a copy of the KRCD Peaking Plant Project Area Map (Figure 2.2.1) the location, density, types of trees, plants and other screening measures (e.g. berm, masonry walls, etc.) that are being proposed to screen the facility. Also include the size of the trees at planting and their growth rate.</p> <p>38. Using SPPE Visual Simulation Figure 5.4-4, provide a simulation of the project showing the proposed landscaping after 10 years of growth. Please provide an 11" X 17" high-resolution color photocopy of these simulations at life-size scale when held at a reading/viewing distance of 18 inches.</p> |
|--|

**RESPONSE:**

**DR 37**

A response will be provided on or before February 13, 2004.

**DR 38**

A response will be provided on or before February 13, 2004.

## **BACKGROUND**

The KRCD Peaking Plant Project Area Map (Figure 2.2.1) indicates that the entire 9.5 acre facility site is to have a perimeter fence. Section 5.4.4.3 (page 14-15) states that “In addition the facility would include “. . . a chain link fence, which includes vinyl slating for screening.”

The visual resource section does not provide details about the vinyl slating into the chain link fence in order for staff to conclude that combined with the proposed landscaping it will provide adequate screening of the facility to a less than significant impact under CEQA. Staff requests that the applicant provide information about vinyl slating that is to be used to screen the facility.

### ***REQUEST:***

- |     |  |
|-----|--|
| 39. | Are vinyl slats to be installed in fencing along the public road frontage of North Avenue to screen the laydown/staging area and the facility site from public view?                         |
| 40. | Please show on a copy of the Kings River Conservation District Project Area Map (Figure 2.2.1) the location(s) of fencing on the property that is to contain vinyl slats used for screening. |

### ***RESPONSE:***

---

#### **DR 39**

No, fencing with vinyl slats will only be around the 9.5-acre project site and not around the temporary construction and staging area.

#### **DR 40**

Included as Attachment Visual DR-40 is a revision to KRCDPP SPPE Figure 2.2.1 which clearly shows the location of the vinyl slats used for screening.

**ATTACHMENT  
VISUAL DR-40**

---



8 7 6 5 4 3 2 1

D C B A



| NO | DATE  | REVISION DESCRIPTION      | DRAWN | CHECKED | APP'D |
|----|-------|---------------------------|-------|---------|-------|
| D  | 07/14 | MODIFIED SITE FENCE NOTES | CL    | JD      | ED    |
| C  | 07/13 | ADDED BOUNDARY FENCING    | CL    | JD      | ED    |
| B  | 07/12 | ADDED BOUNDARY FENCING    | CL    | JD      | ED    |
| A  | 07/11 | ADDED BOUNDARY FENCING    | CL    | JD      | ED    |

**NAVIGANT**  
CONSULTING



**Integrated Engineers & Contractors Corporation**  
1995 Fresno Blvd, Suite 205, Fresno, CA 93725 Phone (559) 315-6900 Fax (559) 315-6910

**PROJECT OWNER**  
KINGS RIVER CONSERVATION DISTRICT  
2611 E. NORTH AVENUE  
FRESNO, CALIFORNIA 93725

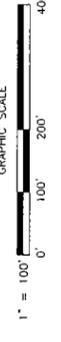
**PROJECT NUMBER**  
NAVI-001

**PROJECT TITLE**  
KRCRD  
PEAKING PLANT

**APPROVED**

**DATE**

**AREA MAP**  
SCALE: 1" = 100'



**KINGS RIVER CONSERVATION DISTRICT PEAKING PLANT  
DATA REQUEST RESPONSES**

**Technical Area**

**Waste Management**

**Technical Area: Waste Management**  
**Author: Ellie Townsend-Hough**

**BACKGROUND**

In the SPPE Application, the KRCD is proposing a 97 MW natural gas-fired, peaking plant in an industrial area. KRCD is proposing to purchase approximately 19 acres of land. The project is proposed to be built on 9.5 acres on the northern portion, and maintain a 9.5 acre lay-down area in the southern section of the site. There is a truck maintenance shop and two warehouses located on the northern portion of the site. KRCD is also proposing to build a 700 foot natural gas pipeline.

***REQUEST:***

41. ~~Is KRCD planning to tear down the truck maintenance shop and two warehouses located on the northern portion of the site? If so, please provide information on the types and amounts of hazardous and non-hazardous wastes that might be generated from their demolition as well as how the wastes would be managed and disposed.~~
42. Please provide information on the amount of drilling mud that would be used in drilling the natural gas pipeline as well as how the used mud would be managed and disposed.

***RESPONSE:***

**DR 41**

The truck maintenance shop and warehouses are not part of the KRCDPP project. The approximately 19-acre KRCDPP project area (which includes the project site, temporary construction staging and parking area and existing storm water basin) does not include the 5-acre parcel that contains the truck maintenance shop and warehouses. As discussed in Section 5.5 of the KRCDPP SPPE, this 5-acre parcel has recently been purchased and will be used for truck parking and service, which is consistent with its previous uses (PSI, 2003). The proposed KRCDPP will not impact this property nor its structures.

**References:**

Professional Service Industries, Inc., 2003. Phase 1, Environmental Site Assessment. Long Beach, California. May 6, 2003.

**DR 42**

There will be no drilling or drilling mud used in the installation of the natural gas pipeline.