CALIFORNIA ENERGY COMMISSION
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May 22, 2008

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

RE: AVENAL ENERGY (08-AFC-1) - DATA REQUEST [SET 1 (#s 1-74)]

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

This set of data requests (#1-74) is being made in the areas of Air Quality (# 1-6), Biological Resources (#7-10); Cultural Resources (#11-20), Hazardous Materials Management (# 21); Land Use (#22-23); Soil and Water Resources (#24 -53), Transmission System Engineering (# 54-58); Waste Management (#59-68); and Worker Safety/Fire Protection (#69-74). Written responses to the enclosed data requests are due to the Energy Commission staff on or before June 20, 2008, or at such later date as may be mutually agreeable.

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

If you have any questions, please call me at (916) 653-1639 or email me at cmeyer@energy.state.ca.us.

Sincerely,

Christopher Meyer
Project Manager

Enclosure
cc: Docket (08-AFC-1)
Proof of Service List
Agencies

PROOF OF SERVICE (REVISED_____) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 5/22/08
MA

Technical Area: Air Quality
Author: Brewster Birdsall

BACKGROUND

Ammonia Slip Levels

The applicant's proposal for ammonia slip emissions is higher than the level that Energy Commission staff believes to be achievable. The applicant's proposal is to limit ammonia slip emissions to 10 parts per million by volume dry basis (ppmvd), a level that would result in up to 35 pounds per hour or 236 tons per year of ammonia emissions (AFC Table 6.2-25). Staff believes that the project should control ammonia emissions to the extent feasible to avoid contributing to violations of the PM10 and PM2.5 standards. Permits issued in recent years for equipment similar to that proposed by Avenal Energy indicate that a level of 5 ppmvd should be achievable [e.g., the General Electric Model 7FA with somewhat smaller heat recovery steam generators in the Tesla Power Project (01-AFC-21)]. Guidance on emission levels for Power Plant Siting published by the California Air Resources Board (CARB) in 1999 recommends 5 ppmvd at 15% O_2. This is also shown in the Avenal Energy AFC Appendix Table 6.2-4.5 (ARB BACT Guidance for Power Plants). Staff agrees with the Air Resources Board that a level of 5 ppmvd is achievable.

DATA REQUESTS

1. Please identify why this project cannot meet an ammonia slip level of 5 ppmvd at 15% O_2. In this discussion, please identify measures, including increasing catalyst surface area that might allow the project to meet the CARB guideline level for ammonia and identify the associated costs of such measures.

BACKGROUND

Offset Package

AFC Appendix 6.2-5 identifies the offsets including year and source that would be used to mitigate project emissions. The AFC identifies an interpollutant trading ratio of 1.4-to-1 (AFC Table 6.2-39) for trading reductions of sulfur oxides (SOx) to allow increases in PM10, but the basis for the ratio is not explained. Additionally, it is not clear what ratio the applicant expects to use for trading excess reductions of volatile organic compounds (VOC) for increases of nitrogen oxides (NOx). In the 2002 review of the previous Avenal proposal (01-AFC-20), the U.S. EPA and SJVAPCD established an offset ratio of 2-to-1 [please see the November 10, 2001 letter from San Joaquin Valley Air Pollution Control District (SJVAPCD) to Mr. Porlier of Duke Energy Avenal, LLC].

DATA REQUESTS

2. Please provide additional information to identify the origin and analysis supporting use of the proposed interpollutant trading ratio for SOx-to-PM10 of 1.4:1. Explain whether this ratio has been reconsidered since the 2002 review for the 01-AFC-20 proceeding through the use of up-to-date regional emission inventories and air quality data.

3. Please propose an interpollutant trading ratio for VOC-to-NOx and provide information as needed to identify the origin or analysis supporting use of the proposed ratio.

4. Please submit to staff timely updates of the offset strategy including the applicant's proposed offset balance taking into account interpollutant ratios and distance ratios. The applicant may file a request for confidentiality concerning the details of the offset package, given the status of purchase and option negotiations. The offset strategy will then be summarized in the Preliminary Staff Assessment.

BACKGROUND

Hours of Operation

The applicant proposes to allow "short-term excursions" of NOx concentration limits for a duration of up to 15 hours per year for "rapid load changes." The emissions during such periods need to be quantified, and the impacts of excursions from rapid load changes need to be characterized. The Specialized Modeling Analyses (AFC p. 6.2-59) do not appear to include rapid load changes. The maximum hourly NOx emission rate during the excursions do not appear to be identified in the emission estimates (AFC Table 6.2-24 and AFC Appendix 6.2-1.8).

DATA REQUESTS

5. Please identify the maximum proposed hourly emission rates during excursions and rapid load changes. Quantify each pollutant and provide an evaluation of air quality impacts including a review of compliance with state and federal ambient air quality standards.

6. Please confirm that the proposed emissions during excursions are included in the proposed maximum annual emission estimates. Update the detailed emission estimates in AFC Table 6.2-24 and AFC Appendix 6.2-1.8 as needed.

Technical Area: Biological Resources
Author: Laurel Cordonnier

BACKGROUND

The Avenal Energy Application for Certification (AFC) states that the parcel for the project is 148 acres, but only approximately 26 acres will be developed for the proposed power plant. However, the AFC does not state what portion of the 148 acres will be fenced. Energy Commission staff needs to know the proposed area to be fenced to assess the impacts to biological resources in the vicinity.

DATA REQUEST

7. Please describe how much of the 148-acre parcel will be fenced and provide a map showing where the 26-acre portion to be occupied by the proposed plant will be located.

BACKGROUND

The AFC states that the United States Bureau of Reclamation Right of Way (ROW), containing the California Department of Water Resources San Luis Canal and maintained grasslands, is immediately adjacent to the site. This ROW contains habitat for biological resources and is a migration corridor. The ROW widths vary from 20 feet to 400 feet wide, averaging 80 feet and the AFC proposes a 300 foot setback from the canal. The AFC also discusses two agricultural wells (#18-1 and #18-4) adjacent to the ROW that are planned for non-emergency raw water sources in addition to raw water from the Avenal Water Plant immediately adjacent to the site. Energy Commission staff needs more information about anticipated impacts to the ROW to assess the impacts to biological resources.

DATA REQUEST

8. Please describe any anticipated impacts to the ROW that might occur through construction of the proposed power plant and water pipelines from agricultural wells #18-1 and #18-4.
9. Please describe measures to be utilized to minimize impacts to the habitat associated with the ROW and canal.

BACKGROUND

During an informal site visit on April 11, 2008, the Energy Commission staff viewed soil berms approximately 0.5 mile to the south and 0.3 mile east of the project site. These berms contain burrows and could be habitat for the burrowing owl (*Athene cunicularia*), a state species of concern. There is also vegetation between the berm and the project site which could act as cover for wildlife species. Energy Commission staff needs more information regarding the possible disruption of this potential habitat area.

DATA REQUEST

10. Please provide a description of impact avoidance measures to be employed during project construction for the potential wildlife use areas associated with berms and vegetation to the south and east of the project site.

Technical Area: Cultural Resources
Author: Beverly E. Bastian

BACKGROUND

The Application for Certification (AFC) provides no detail maps of the routes of the Avenal Energy gas pipeline or the primary and secondary water pipelines. Staff needs maps showing details of the routes of the gas and primary and secondary water pipelines for a complete impact assessment.

DATA REQUEST

11. Please provide a map showing the detailed routes of the gas and primary and secondary water pipelines, including the routes within the property boundaries and the site plan.

BACKGROUND

The most recent cultural resources survey summary (AFC Vol. 2, App. 6.7-1, Part 3, Fig. 2) indicates that the pedestrian survey for cultural resources was completed, and all potential project impact areas have been checked for cultural resources. The AFC's Project Description section, however, indicates that some transmission line easements have not yet been obtained from landowners (p. 2-3). Staff needs to know if the cultural resources survey of these not-yet-secured transmission line easements has been completed.

DATA REQUEST

12. Please clarify whether the cultural resources survey of the not-yet-secured transmission line easements has been completed, and, if not, when the applicant anticipates completing that work.

BACKGROUND

The Project Description section of the AFC indicates that Avenal Energy site preparation will entail the disposal of unsuitable materials—topsoil and rocks—at "an acceptable location" (p. 2-45). Staff needs to know whether or not any non-licensed, non-commercial borrow or disposal sites that may be used by the proposed project have been surveyed for the presence of cultural resources.

DATA REQUEST

13. Please indicate whether the proposed project may use any non-licensed, non-commercial soil borrow or disposal sites. If so:

    a) Please have a qualified archaeologist survey these sites and record on Department of Parks and Recreation (DPR) 523 forms any cultural resources that are identified; and

    b) Please submit to staff a report on the methods and results of these surveys, with recommendations for the treatment of any cultural resources identified in the surveys.

BACKGROUND

The historical architecture survey report (AFC Supplement, Attachment C-3) for the Avenal Energy project provides some historical information on PG&E's Gates Substation, into which the new Avenal Energy transmission line would interconnect, indicating that parts of the Gates Substation are more than 45 years old (p. 12). The AFC provides little detail on the alterations that would have to be made to the Gates Substation to accommodate the new Avenal Energy transmission line. Three earlier system impact studies were noted, dating to 2002 and 2003, and a new feasibility study said to be available in February of 2008, was expected to confirm the results of these three previous studies that no additional system upgrades beyond those previously identified would be required (p. 2-55). Staff needs a detailed description of the alterations that would have to be made to any parts of the Gates Substation that are 45 years of age or older.

DATA REQUEST

14. Please provide a detailed description of the alterations, required to accommodate the new Avenal Energy transmission line, that would have to be made to any parts of the Gates Substation that are 45 years of age or older.

15. Please provide a copy of the 2008 transmission interconnection study, if available.

BACKGROUND

The updated cultural resources inventory dating to September, 2006 (AFC Vol. 2, App. 6.7-1, Part 2) states that information previously provided in data responses in 2002 for the previous Avenal power plant application indicates that major modifications were made to the Gates Substation and to transmission lines connecting to it. Staff reviewed these data responses and did not find a discussion of "major modifications" to the Gates Substation. The cited responses primarily concern modifications to the transmission line which is "ancestral" to the Gates-Arco-Midway line, next to which the proposed Avenal Energy transmission line would run. The only mention of an alteration at the substation is to a single breaker. The same 2006 discussion states that further modifications were made to the substation and area transmission lines during PG&E's Path 15 upgrade, but no details were provided. Because the Gates Substation is older than 45 years and so may qualify as a cultural resource, staff needs more details regarding these modifications as they may have affected the integrity of the substation and transmission line.

Additionally, an architectural historian for the applicant recorded and evaluated the Gates Substation and the Gates-Arco-Midway 230-kV transmission line. She stated in her report that, based on "preliminary findings and field observation," neither structure appeared to be eligible for the California Register of Historical Resources (Supplement Attachment C-3, p. 12), and she completed and attached to her report a combined DPR 523 "Primary" form for the two structures. The report did not contain evidence supporting the recorder's evaluation of ineligibility, and the single "Primary" form provided as the sole recordation for two resources is insufficient. Each should have an individual "Primary" form and an individual "Building Structure & Object" (BS&O) form, per routine State Historic Preservation Office practice. The BS&O forms should include

the results of sufficient historical research to make an informed recommendation on the potential eligibility and integrity of these resources.

DATA REQUESTS

16. Please provide copies of all relevant sources detailing the modifications made to the Gates Substation during the Path 15 upgrade.

17. Please have a qualified architectural historian conduct additional research on the Gates Substation and the Gates-Arco-Midway 230-kV transmission line, then complete and submit to staff an individual "Primary" form and an individual BS&O form for each resource, including eligibility recommendations justified with supporting historical evidence.

BACKGROUND

In order to meet Energy Commission Data Adequacy requirements, on March 28, 2008, the applicant sent letters inquiring about known local cultural resources to Fresno County, and to local historical and archaeological societies. Staff needs to know if any responses to these letters have since been received.

DATA REQUEST

18. Please provide copies of any letters received from Fresno County, or from local historical and archaeological societies in response to the applicant's inquiries about local cultural resources.

BACKGROUND

The AFC notes that the results of a geotechnical study would be available in February of 2008 (p. 2-1-4), but the report was not available at the time of the Data Adequacy review for Avenal Energy. Staff needs to review this report for indications of subsurface archaeological deposits so staff can complete its analysis.

DATA REQUEST

19. Please provide a copy of the project's most recent geotechnical study when it is available.

BACKGROUND

No indications of prehistoric use of the project site or of the vicinity of the project's proposed location were identified by the applicant's cultural resources consultant, either from existing site records or through pedestrian survey. A recent synthesis of archaeological and geoarchaeological information on the California Central Valley ("The Central Valley: A View from the Catbird's Seat," by Jeffrey S. Rosenthal, Gregory G. White, and Mark Q. Sutton, in *California Prehistory: Colonization, Culture, and Complexity*, Terry L. Jones and Kathryn A. Klar, eds., 2007) suggests that prehistoric deposits in the Central Valley dating before 2,500 years ago have either been obliterated by agricultural activities or buried by ongoing alluvial processes (p. 150).

The cultural resources discussion provided by the applicant noted that 60 years of agriculture in the area have "reportedly" disturbed native soils to a depth of five feet and

that the present-day absence of nearby drainages suggests a low expectation for buried archaeological deposits (App. 6.7-1, Part 2, p. 5). Staff needs more substantive information on the possible presence of buried archaeological deposits, especially in light of the presence of the marshlands of former Tulare Lake, located to the east of the project area, which are believed to have provided food and materials for Native Americans for many thousands of years.

To facilitate a more substantive factual assessment of whether the proposed project may impact potentially significant buried archaeological deposits, staff requests that the applicant provide a geoarchaeological analysis of the project area, the purpose of which would be to assess the likelihood of encountering such deposits. The primary emphasis of the analysis should be the present state of knowledge of the archaeological resources that are characteristically found adjacent to Tulare Lake in zones that are ecological or physiographic analogs to zones that were formerly characteristic of the proposed project site. The fewer archaeological data available, the more emphasis should be given to the paleoenvironment and the historical geomorphology of the project site. Such an emphasis would provide a more substantive context for interpreting the possible presence of buried archaeological deposits.

DATA REQUEST

20. Please review the extant literature for archaeology, geoarchaeology, and Quaternary science and provide an analytical summary of what is currently known of the archaeology, paleoenvironment, and historical geomorphology of the area in the vicinity of the project site. Where the data are available, please emphasize the kinds of buried archaeological deposits that have been found, the stratigraphy in, above, and below the deposits, and the depths at which the archaeological deposits in the area typically occur.

Technical Area: Hazardous Materials Management
Author: Dr. Alvin Greenberg

BACKGROUND

This power plant will use, store, and transport some hazardous materials in large volumes that if spilled may require clean-up. Usually, the local fire department provides the "first response" and a contractor provides the clean-up.

In order to properly assess hazardous materials management for the proposed power plant, staff needs to know if a hazardous materials spill cleanup contractor has been identified and retained by the applicant to provide cleanup of spills.

DATA REQUEST

21. Please identify a hazardous materials cleanup contractor that the project will retain to provide cleanup of any spilled hazardous materials.

Technical Area: Land Use
Author: David Flores

BACKGROUND

Avenal Energy conforms to the site's industrial zoning. Staff is requesting the following additional information regarding the actions that the Avenal City Council took in 1992 in rezoning the project's land use entitlements from agricultural to a heavy industrial zoning:

DATA REQUEST

22. Please provide all pertinent environmental documentation prepared by the City of Avenal in 1992 for evaluating the general plan update and subsequent rezone from agriculture to industrial for the Avenal Energy site and surrounding land. This documentation should include mitigation requirements and/or a statement of overriding consideration if any, for the conversion of agricultural land to industrial use.

BACKGROUND

The 148-acre parcel, on which Avenal Energy is currently proposed, was once part of a 608-acre parcel. In 2001, Duke Energy filed an application with the Energy Commission indicating that a parcel split was required to split the 608-acre parcel. Duke Energy stated that they would file a parcel split application with the City of Avenal, pursuant to the Subdivision Map Act.

DATA REQUEST

23. Please provide documentation to confirm the parcel split, or a statement that the applicant will file the necessary parcel split documents to the City of Avenal once the final determination of the application is made by the Energy Commission.

Technical Area: Soil and Water Resources
Author: Casey Weaver

BACKGROUND

The project proposes using water supplied by neighboring agricultural wells as a backup water supply. The backup water supply would be conveyed to the site via underground pipelines that will be installed prior to site construction. The underground water line is proposed to cross Avenal Cutoff Road near the western abutment of the San Luis Canal bridge.

The project proposes using natural gas as fuel for the power plant. Natural gas will be conveyed to the plant via underground pipelines. The underground natural gas pipeline is proposed to cross Plymouth and Pueblo Roads in the vicinity of the PG&E Kettleman compressor station.

The AFC did not provide discussion on how these underground pipelines will be installed beneath these roadways.

DATA REQUEST

24. Please provide a description of the methodology proposed for subsurface crossing of underground pipelines beneath roadways. The description should provide the excavation method, and address soils handling and erosion control, and provide a contingency should groundwater be encountered.

BACKGROUND

Site development will include mass grading with cuts and fills between 6 and 10 feet. Soils suitable for compaction will be temporarily stored at designated locations. The AFC states that material unsuitable for compaction will be stockpiled and disposed of at a suitable location.

DATA REQUESTS

25. Please provide a site plan that clearly shows the locations and heights of cut slopes and the locations and thicknesses of fill areas.

26. Please provide a map that clearly shows where soils suitable for compaction will be stored and provide a description of how these soils will be protected from erosion.

27. Please provide a map that clearly shows where materials that are unsuitable for compaction will be stored and provide a description of how these materials will be protected from erosion.

28. Please explain the rationale expected to be used to determine when these unsuitable materials will be removed from the site.

29. Please explain the methods expected to be used to load and transport these materials from the site.

BACKGROUND

The retention basin for containing storm water runoff originating on the site was designed for a 25-year storm lasting 24 hours. The basin is proposed to be constructed to a depth of two feet. Disposal of the collected storm water will be accomplished through evaporation and percolation.

DATA REQUESTS

30. Please provide the rationale for selecting the 25 year storm lasting 24 hours as the design event for sizing the retention basin.

31. Please explain how the basin will maintain sufficient freeboard following the design storm event.

32. Please provide the information used to determine the expected rate of percolation and an estimate of how long it will take for the basin to empty by percolation.

33. On Figure 2.3-11, a symbol is drawn on the middle of the eastern levee of the basin. Please explain what does the symbol represents.

34. On Figure 2.3-11, there is a north-south oriented "offset flow diversion ditch" shown adjacent to the western side of the water treatment facility. Please explain the purpose of the "offset flow diversion ditch" and explain where and how it discharges.

BACKGROUND

Electricity generated at the power plant will be transmitted through a single circuit 230-kV transmission line suspended by a series of steel poles. The transmission line alignment is shown on Figure 6.5-1B. The alignment begins at the southeast corner of the property and travels south approximately ½ mile, then turns west and follows Pueblo Road westerly to the intersection of an existing transmission line corridor. The alignment then parallels the existing transmission line corridor northwesterly for approximately 4-½ miles to the Gates Substation. Staff needs a detailed map with the transmission line structures marked to complete its erosion and sedimentation analysis.

DATA REQUESTS

35. The area immediately south of the project is currently an almond orchard. The map showing the transmission line corridor indicates that the alignment traverses the eastern portion of the orchard. Please provide a scaled map showing the proposed locations of the transmission tower foundations and a diagram indicating how erosion and sedimentation hazards will be mitigated.

36. The transmission line alignment traverses an area designated as being within the 100-year Flood Zone. On the above map showing transmission tower foundations, please delineate the 100-year flood zone and provide an explanation of how the towers may affect/be affected by the 100-year flood.

BACKGROUND

Project construction may induce water and wind erosion at the power plant site. Storm water runoff may also contribute to erosion and sedimentation as well as transport pollutants off site. Storm water will be collected, contained and managed under the State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit requirements during construction and operation. Storm Water Pollution Prevention Plans will be required for both construction and operation of the power plant. The AFC briefly discusses some of the features and best management practices that will be implemented for this project. However, they are not described in sufficient detail to demonstrate that they will function as intended and/or comply with State and local requirements.

DATA REQUESTS

37. Please provide a draft Drainage Erosion and Sedimentation Control Plan (DESCP) that provides information on how the applicant would address the protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This draft plan shall provide staff information on proposed methods and actions for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, and identify all monitoring and maintenance activities. The draft plan shall be consistent with the grading and drainage plan and may incorporate by reference any storm water pollution prevention plan developed in conjunction with any NPDES permit.

    A final DESCP, specific to Avenal Energy, would be required if the project is approved by the Energy Commission. The following outline of a typical final DESCP is presented here for your information only:

    a. ***Vicinity Map*** – A map shall be provided indicating the location of all project elements with depictions of all significant geographic features to include watercourses, washes, irrigation and drainage canals, and sensitive areas.

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

    c. ***Watercourses and Critical Areas*** – The DESCP shall show the location of all nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site.

    d. ***Drainage*** – The DESCP shall provide a topographic site map showing all existing, interim, and proposed drainage systems. drainage area boundaries and watershed sizes in acres, and the hydraulic analysis to

support the selection of best management practices (BMPs) to divert off-site drainage around or through the site and laydown areas. Spot elevations shall be required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet in flat terrain.

e. ***Clearing and Grading*** – The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCP shall include a statement of the quantities of material excavated or filled for each element of the project (for example, project site, transmission corridors, and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there will be no clearing and/or grading conducted for each element of the project.

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

g. ***Best Management Practices*** – The DESCP shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

h. ***Erosion Control Drawings***—The erosion-control drawings and narrative shall be designed and sealed by a professional engineer or erosion-control specialist.

38. Please provide a draft Storm Water Pollution Prevention Plan (SWPPP) consistent with the requirements for a NPDES General Permit for construction and operation of the site and associated linear facilities.

BACKGROUND

Groundwater conditions beneath the project site are described in Section 6.5 and in Appendix 6.5 of the AFC. Cross sections and written text indicate that, beneath the site, a shallow "brackish" aquifer overlies an "Upper Aquifer Zone" that is underlain by the Corcoran Clay member of the Tulare formation.

DATA REQUEST

39. Please discuss whether this lower quality water could be used for industrial uses at the power plant.

BACKGROUND

The AFC proposes the use of City of Avenal Water supplied by the State Water Project's (SWP) San Luis Canal. Should problems occur with delivery of water to the site by the City of Avenal, existing agriculture production wells are proposed as the backup water supply. Staff has observed recent problems that could affect city water supply to the site, including elevated turbidity of canal water due to storm water infiltration and/or reduction in available SWP delivery.

DATA REQUESTS

40. Please provide a ten year history of problems or events with the San Luis Canal in the site vicinity that would have potentially affected water supply to the site, how the problems were resolved and how long it took to resolve the problem(s). The historic information should address past occurrences of interrupted canal flows including season, duration, precipitation conditions and frequency of occurrence.

41. Based on the history of problems with the canal, please provide an estimate of the likely groundwater demand due to this condition.

42. Please discuss whether the backup supply wells will be plumbed to the site and still provide irrigation water for agriculture.

43. If the wells will be plumbed both to the site and to the irrigated land, please describe how the water supply lines will serve both uses and how the supply will be managed to meet project needs.

44. Please describe how the volume of backup water delivered to the site will be measured and recorded.

45. Please indicate at what stage of power plant construction, backup well water will be available for use at the site.

46. Please describe how the volume of the backup water proposed for use during construction will be measured.

47. Please discuss if the well water will be available for uses other than for construction and power plant backup water supply. If not, please describe the measures that will be used to prevent use of the well water for uses other than those described.

BACKGROUND

The project proposes using backup water supplied by neighboring agricultural wells when the City of Avenal supply is not available. When the agricultural wells are used for backup water supply, farm practices will be altered equivalently to the project's demand to offset potential net loss of water supply. These practices will include "crop changes,

increased irrigation management or other measures". The examples given include changing row crops to wheat or barley, irrigating almonds using drip or Fan Jet, and/or irrigating row crops with subirrigation.

DATA REQUESTS

48. As the backup supply is intended to be available for short term "emergency" use, the timing of backup supply use is unknown. There is a potential that this "emergency" use could coincide with a critical water need for agricultural production, leading to damage or loss of a crop. Please provide documentation that the well owners acknowledge this potential loss of agricultural production and are agreeable to providing the required backup water regardless of their loss.

49. As the use of backup water is immediate, please explain when the effects of agricultural water conservation measures (change in crop type) will be realized in the aquifer used for backup supply.

50. As the almond orchards are presently irrigated with drip irrigation, please explain how drip irrigation is an additional conservation method that will help offset power plant use of well water.

51. Please describe the depth to groundwater in the area of the Kochergen Farms that may be a candidate for subirrigation, and which fields have the physical characteristics suitable for subirrigation.

52. Please describe how water conservation is achieved using subirrigation.

53. Please provide information on all sources of water that the farmer/landowner uses to irrigate his property (surface and groundwater) and the volumes for each required to supply current irrigation demand. Include in this information any rights the landowner may have to the State Water Project that is served from the San Luis Canal or nearby facilities.

Technical Area: Transmission System Engineering
Author: Ajoy Guha, P. E. and Mark Hesters

INTRODUCTION

Staff needs to determine the system reliability impacts of the project interconnection and to identify the interconnection facilities, including downstream facilities, needed to support the proposed Avenal Energy project (Avenal Energy). The interconnection must comply with the Utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, NERC/Western Electricity Coordinating Council (WECC) Planning Standards, and California Independent System Operator (California ISO) Planning Standards. In addition the California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." For the compliance with planning and reliability standards and the identification of indirect or downstream transmission impacts, staff relies on the System Impact Study (SIS) and Facilities Study (FS) as well as review of these studies by the agencies responsible for insuring the interconnecting grid meets reliability standards, in this case, the Pacific Gas & Electric (PG&E) and California ISO. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include modification and construction of downstream transmission facilities. CEQA requires environmental analysis of any downstream facilities for potential indirect impacts of the proposed project.

BACKGROUND

The description of the Avenal Energy interconnection terminating facilities at the PG&E Gates Substation is incomplete as provided in the AFC and AFC Supplement (AFC, section 2.4; AFC Supplement, section 6.1, attachment T2).

DATA REQUESTS

54. Provide complete electrical one-line diagrams of the pre and post-project PG&E 230 kV Gates Substation showing buses with their arrangements, breakers, disconnect switches and their respective ratings, along with the existing/proposed transmission outlets.

55. Provide pre and post-project physical layout drawings of the PG&E 230 kV Gates Substation showing all major equipment and transmission line outlets.

BACKGROUND

The AFC and AFC Supplement did not include a complete System Impact study (SIS) report (AFC, section 2.4.5; AFC Supplement, section 6.2, attachment T3).

DATA REQUESTS

56. Submit a complete SIS report prepared by PG&E and/or California ISO for interconnection of the 600 MW net Avenal Energy generation output to the PG&E

230 kV Gates Substation based on 2012 summer peak and off-peak system conditions (scheduled commercial operation date of the project). The study should include a power flow, short circuit and transient stability analyses with a mitigation plan for any identified reliability criteria violations. In the report list all major assumptions in the base cases including major path flows, major generations including queue generation and loads in the area systems. Also identify the reliability and planning criteria utilized to determine the reliability criteria violations.

57. Provide power flow diagrams with and without Avenal Energy for base cases. Power flow diagrams should also be provided for all overloads or voltage criteria violations under normal system (N-0) or contingency (N-1 & N-2) conditions.

58. Provide electronic copies of *.sav,*.drw, *.dyd and *.swt GE PSLF files and EPCL contingency files in a CD (if available).

Technical Area: Waste Management
Author: Casey Weaver

BACKGROUND

Statements in the AFC are conflicting with regard to the presence of shallow groundwater beneath and around the site property (See sections 6.3.1.5.5, 6.5.1.3, Table 6.5-4, Figure 6.5-4, Appendix 6.5-2 Sections 2.0, 2.2, 2.3). Foundations for the transmission line towers will be extended into the subsurface. Natural gas lines and backup water supply lines will be installed underground.

DATA REQUEST

59. Please provide the protocols to be used to dewater, collect and properly dispose of any shallow, perched, brackish groundwater encountered during construction,

BACKGROUND

As stated in Section 2.3.8.1, sanitary wastewater is proposed to be disposed of in a septic tank and leach field system. In the supplement to the AFC (Attachment W.6), some general assumptions and calculations were provided, however, no specific information on the design was provided to verify that the construction and operation of the system will conform to local requirements.

DATA REQUESTS

60. Please provide the results of percolation tests conducted in the primary and replacement leach field areas.

61. Please provide diagrams showing the plan view and cross sections of the leach line design.

62. Please provide depth to groundwater measurements obtained in the leach field areas.

BACKGROUND

Section 2.3.18.9 of the AFC states that the heat recovery steam generator and associated piping will be hydro-tested after the mechanical construction is complete. Following testing, the hydrotest water will be sampled and tested. Water with "suitable" chemistry will be conveyed to the retention basin. If the hydrotest water quality is not suitable for disposal through the retention basin, the water will be transported by truck to an appropriately licensed offsite treatment or disposal facility.

DATA REQUESTS

63. Please provide a list of the chemicals that are anticipated to be detected in the hydrotest water and provide the source of those chemicals.

64. Please describe what is considered to be hydrotest water that is suitable for disposal through the onsite retention basin versus unsuitable for onsite disposal.

65. Please identify which disposal/treatment facilities have been contacted to confirm their ability to accept the waste if the hydrotest water is unsuitable for onsite disposal. In this identification, please provide information on the location of these facilities in relation to the proposed project site.

BACKGROUND

During transmission line construction, structures associated with a farm office and equipment storage area will be removed (Section 6.9.1.2). There is no discussion of environmental assessment (leaded paint, asbestos, petroleum products, etc.), demolition activities or methods for disposal of resulting waste associated with this demolition.

DATA REQUESTS

66. Please provide an environmental assessment of the area proposed for demolition. The assessment shall be conducted in conformance with ASTM Method E 1527-05.

67. Please provide a description of the demolition activities associated with removal of these structures.

68. Please identify the wastes anticipated to be generated during structure removal operations and discuss the method(s) proposed for disposal of those wastes.

Technical Area: Worker Safety/Fire Protection
Author: Dr. Alvin Greenberg

BACKGROUND

All power plants licensed by the Energy Commission have more than one access point to the power plant site. This is sound fire safety procedure and allows for fire department vehicles and personnel to access the site should the main gate be blocked. In addition, response times for the fire department to arrive in the event of a fire, medical emergency, or hazardous materials spills are not provided in the AFC. It is also unclear what on-site fire suppression systems will be provided during construction and during operations.

In order to properly assess fire protection and suppression for the proposed power plant, staff needs to know the location of all site access points, response times for off-site fire department response, and have a more detailed description of equipment available for fire suppression during both the construction and operation phases. Staff also needs assurance that the Kings County Fire Department will provide fire, emergency medical, and hazardous materials spill response to the site.

DATA REQUESTS

69. Please identify all access points, whether for vehicles or personnel. Include the method of gate opening and securing.

70. Please provide the response times from the nearest Kings County Fire Department station to the site for fire, emergency medical, and hazardous materials spill events.

71. Please provide a more detailed description of the fire suppression systems, including any use of a fire-water loop, which will be available during power plant construction.

72. Please provide a more detailed description of all fixed fire suppression systems that will be available during commissioning and operations of the power plant.

73. Please provide a letter from the Kings County Fire Department stating its willingness and ability to provide the above-mentioned services to Avenal Energy.

BACKGROUND

The AFC states that the surrounding parcels are currently being actively farmed. The applicant has stated that of the 148-acre parcel, 25 acres will be used for the power plant and the remainder used for agricultural use. Ground or aerial spraying for pesticides would occur for agricultural parcels surrounding the project site. The possibility of overspraying may occur on the power plant site, exposing both construction and operations employees to the pesticide applications.

DATA REQUEST

74. Please provide a discussion of measures that will be taken to protect power plant workers during construction and operation of the project.

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

APPLICATION FOR CERTIFICATION ***For the AVENAL ENERGY PROJECT***	**Docket No. 08-AFC-1** **PROOF OF SERVICE**

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-9
1516 Ninth Street, MS-14
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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DECLARATION OF SERVICE

I, Mineka Foggie, declare that on May 22, 2008, I deposited copies of the attached Avenal Energy (08-AFC-1) Data Request Set 1#s 1- 74 in the United States mail at with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

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

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

Mineka Foggie