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

DATE: July 3, 2007

TO: Interested Parties

FROM: Christopher Meyer, Compliance Project Manager

SUBJECT: Staff Analysis of the PG&E Petition to Eliminate the Use of San Joaquin River Water as the Cooling Water Source and Complete Ten Associated Project Design Changes at the Gateway Generating Station (00-AFC-1C)

On December 19, 2006, Pacific Gas and Electric Company (PG&E) filed a petition with the California Energy Commission requesting to amend the Energy Commission Decision to eliminate the use of San Joaquin River water as the cooling water source for the Gateway Generating Station Project (formerly known as the Contra Costa Power Plant Unit 8 Project). The petition also proposes ten associated project design changes at the project. The 530-megawatt project was certified by the Energy Commission on May 30, 2001. Construction of the facility started late in 2001 and was suspended in February of 2002 due to financial difficulties, with approximately 7 percent of construction completed. On July 19, 2006, the Energy Commission approved the addition of PG&E as co-owner of the project with Mirant Delta, LLC. On December 4, 2006, PG&E filed a petition to remove Mirant as a co-owner and change the name of the facility to the Gateway Generating Station. The facility is located east of the City of Antioch, in Contra Costa County.

Energy Commission staff reviewed the petition to assess the impacts of this proposal on environmental quality and public health and safety, and determined that the changes to the Land Use, Traffic, Socioeconomics, Noise, Waste, Hazmat, Cultural Resources, Paleontological Resources, Worker Safety, Transmission Line Safety, Transmission System Engineering, and Facility Design technical areas are minimal, requiring no further staff analysis. The Biological Resources staff determined that eliminating the use of Sacramento-San Joaquin Delta water for cooling is an environmental benefit and did not propose any changes to the Biological conditions of certification. The Air Quality, Soil and Water, and Visual staff identified impacts associated with the proposed changes to the project and these are discussed in detail in the attached Staff Analysis. The review included an evaluation of the consistency of the proposed modifications with the Energy Commission's Decision and whether the project will remain in compliance with applicable laws, ordinances, regulations, and standards (LORS) (*Title 20, California Code of Regulations, section 1769*).

The petition to amend the project is available on the Energy Commission's webpage at www.energy.ca.gov/sitingcases/contracosta/index.html. Staff's analysis is enclosed for your information and review. Staff's analysis and the Energy Commission's Order (if approved), will also be posted on the webpage. Energy Commission staff intends to recommend approval of the petition at the August 1, 2007, Business Meeting of the Energy Commission. If you have comments on this proposed modification, please submit them to me at the following address no later than 5:00 P.M., July 30, 2007.

Christopher Meyer**,** Compliance Project Manager
California Energy Commission
1516 9th Street, MS-2000
Sacramento, CA 95814

Comments may be submitted by fax to (916) 654-3882, or by e-mail to cmeyer@energy.state.ca.us. If you have any questions, please contact me at (916) 653-1639.

For further information on how to participate in this proceeding, please contact the Energy Commission's Public Adviser's Office, at (916) 654-4489, or toll free in California at (800) 822-6228, or by e-mail at pao@energy.state.ca.us. If you require special accommodations, please contact Lourdes Quiroz at (916) 654-5146. News media inquiries should be directed to Assistant Director, Claudia Chandler, at (916) 654-4989, or by e-mail at mediaoffice@energy.state.ca.us.

Enclosures:

- Staff Analysis

California Energy Commission

Gateway Generating Station Project
(00-AFC-1C)

Petition to Eliminate the Use of San Joaquin River Water as the Cooling Water Source and Complete Ten Associated Project Design Changes

Staff Analysis

July 3, 2007

GATEWAY GENERATING STATION (00-AFC-1C)
STAFF ANALYSIS

EXECUTIVE SUMMARY

On December 19, 2006, the California Energy Commission received a petition from the Pacific Gas and Electric (PG&E) to amend the Decision for the Gateway Generating Station Project. The 530-megawatt project was certified by the Energy Commission on May 30, 2001. Construction of the facility started late in 2001 and was suspended in February of 2002 due to financial difficulties, with approximately 7 percent of construction completed. On July 19, 2006, the Energy Commission approved the addition of PG&E as co-owner of the project with Mirant Delta, LLC. January 3, 2007, the Energy Commission approved the petition to remove Mirant as a co-owner and change the name of the facility to the Gateway Generating Station. Construction of the Gateway Generating Station resumed in February of 2007. The facility is located east of the City of Antioch**,** in Contra Costa County.

As part of the January 3, 2007 Order approving the addition of PG&E as co-owner of the project, the Commission stated:

1) PG&E and Mirant will obtain Energy Commission approval of an amendment reflecting a new mitigation program which mitigates the cooling system impacts to a less than significant level and is acceptable to the federal and state resource agencies, and obtain all required permits prior to the start of operation. (The previously drafted Biological Opinions from the USFWS and the National Marine Fisheries Service would not satisfy this requirement.)

2) If such a mitigation program is not developed and/or the federal permits are not obtained, PG&E and Mirant will obtain approval of an amendment switching to an alternative cooling method (such as reclaimed water) prior to beginning operation.

3) Until the resource agency permits are obtained, Unit 8 will be designed and constructed in such a manner that will not preclude the switch to an alternative cooling technology.

Consistent with the January 3, 2007 Commission Order, PG&E has proposed eliminating the use of San Joaquin River water as the cooling water source for the project and has proposed completing the following ten associated project design changes at the facility in support of this change in cooling technology:

1. Replace the wet cooling tower and surface condenser with an air cooled condenser (ACC)
2. Replace the water treatment building with a trailer mounted water treatment system and relocate the system to the south side of the project site
3. Revise the discharge source for the oil/water separator
4. Incorporate a condensate polishing system associated with the ACC
5. Eliminate the use of steam power augmentation
6. Replace the combustion turbine inlet evaporative cooling system with inlet chilling systems for each combustion turbine
7. Incorporate two electric firewater pumps

8. Incorporate a 500,000 gallon fire water storage tank
9. Incorporate a new fire water tank fill line and potable water supply pipeline
10. Incorporate a new wastewater/sewer pipeline

Energy Commission staff reviewed the petition and assessed the impacts of this proposal on environmental quality, public health and safety. Staff proposes revisions to existing Air Quality, Biological Resources, Noise, Visual Resources, Transmission Safety Engineering, and Soil and Water Conditions of Certification.

PUBLIC AND AGENCY COORDINATION

PG&E initially entered into discussions with the Delta Diablo Sanitation District (DDSD) on the purchase of reclaimed water for the operation of the cooling tower at the Gateway Generating Station. Although DDSD informed both PG&E and the Energy Commission staff that they had adequate reclaimed water supplies to meet the industrial water demand for wet cooling tower at the Gateway Generating Station, the two parties were not able to reach an agreement, and PG&E redesigned the project to use an air cooled condenser.

The Energy Commission staff met with representatives of both PG&E and the DDSD to better understand the failure of the parties to reach an agreement for the use of reclaimed water in the previously approved wet cooling tower at the Gateway Generating Station. Following these discussions, the Energy Commission staff determined that this was a business decision between PG&E and DDSD. In addition, the Energy Commission received a letter from the Regional Water Quality Control Board, Region 2, with comments on the proposed petition to change to dry cooling. The Energy Commission staff reviewed the comments from Region 2 and has discussed this in detail in the Soil and Water section of the Staff Analysis.

Coordination has occurred with local, state and federal agencies that have an interest in the project. Particularly, Energy Commission staff has worked with the Regional Water Quality Control Boards in Region 2 and Region 5 to identify and resolve issues of concern and clarify jurisdictional boundaries. In addition, Commission staff has coordinated the review and analysis of the petition with interested residents of the community to address any potential visual impacts from the larger air cooled condenser.

CONDITIONS OF CERTIFICATION

Energy Commission staff reviewed the petition to assess the impacts of this proposal on environmental quality and public health and safety, and determined that the changes to the Land Use, Traffic, Socioeconomics, Noise, Waste, Hazmat, Cultural Resources, Paleontological Resources, Worker Safety, Transmission Line Safety, Transmission System Engineering, and Facility Design technical areas are minimal, requiring no further staff analysis. The Biological Resources staff determined that eliminating the use of Sacramento-San Joaquin Delta water for cooling is an environmental benefit and only proposed changes to eliminate the reference to the Aquatic Filter Barrier and associated

permits. The Air Quality, Soil and Water, and Visual staff identified impacts associated with the proposed changes to the project and these are discussed in detail in this Staff Analysis. The review included an evaluation of the consistency of the proposed modifications with the Energy Commission's Decision and whether the project will remain in compliance with applicable laws, ordinances, regulations, and standards (LORS) (*Title 20, California Code of Regulations, section 1769*).

Staff supports the project amendment petition with changes to the Air Quality, Biological Resources, Noise, Transmission Safety Engineering, Visual Resources, and Soil and Water Conditions of Certification.

CONCLUSIONS AND RECOMMENDATIONS

The Staff Analysis is a document of the Energy Commission staff so, by its very nature, the conclusions and recommendations presented are considered staff's testimony. The final decision of the Energy Commissioners will be based on the evidence presented at upcoming business meeting on August 1, 2007.

Each technical area assessment in the Staff Analysis includes a discussion of the project and the existing environmental setting; the project's conformance with laws, ordinances, regulations and standards (LORS); whether the facility can be redesigned safely and reliably; project specific and cumulative impacts; the environmental consequences of the project using the proposed mitigation measures; conclusions and recommendations; and any proposed changes to the conditions of certification under which the project should be constructed, should it be approved.

In summary this Staff Analysis finds that:

- The project is in conformance with all Laws, Ordinances, Regulations and Standards (LORS).
- With the proposed changes to the conditions of certification included in the various technical areas, the project's construction and operation impacts can be mitigated to a level less than significant.
- The Bay Area Air Quality Management District believes that the project currently complies with the appropriate rules and requirements of the District and, with the proposed changes to the Conditions of Certification, will not contribute to the degradation of the air quality in the Bay Area Air Quality Management District.

PG&E Petition to Eliminate the Use of San Joaquin River Water as the Cooling Water Source and Complete Ten Associated Project Design Changes at the Gateway Generating Station (00-AFC-1C)

AIR QUALITY
Prepared by: Joseph M. Loyer
January 24, 2007

AMENDMENT REQUEST

Pacific Gas and Electric Company (PG&E) has petitioned to amend several Conditions of Certification in the Air Quality section of the Commission Decision for the Gateway Generating Station (GGS). These proposed amended conditions fall into two general categories: update the construction conditions and the replacement of the once through cooling system with a dry cooling tower system and a wet surface air cooling system for added cooling capacity when air temperature and turbine load warrant. PG&E requests in this petition to amend the Air Quality Conditions of Certification AQC-1, AQC-2, AQ-45 and AQ-46. Proposed deletion of text from the conditions of certification is shown by ~~strikethrough~~, and any newly proposed text is shown by <u>underline</u>.

BACKGROUND

On May 30, 2001 the Energy Commission approved a license for Mirant Delta, LLC to construct and operate the proposed Contra Costa Power Plant Unit 8 Project. The project is proposed to be a nominal 530 megawatt (MW), natural gas-fired, combined cycle, combustion turbine power plant located within the existing Contra Costa Power Plant site complex located just north of the City of Antioch in Contra Costa County.

On January 3, 2007 the Energy Commission approved the PG&E petition to have PG&E become the sole owner of the facility and for the facility name to be changed to Gateway Generating Station.

LORS

No laws, ordinances, regulations or standards will be affected by the petitioned amendment request. PG&E will remain in compliance with all LORS if the petition is approved.

ANALYSIS

AMENDMENTS TO CONSTRUCTION CONDITIONS (AQC-1 AND AQC-2)

PG&E is petitioning to update the construction conditions (AQC-1 and AQC-2) to reflect the current approach by the Energy Commission on the control of construction emissions.

At the time of the original licensing case, the Energy Commission required that an applicant employ a licensed Mechanical Engineer to, among other responsibilities, determine the need for and installation of post combustion emission controls for the construction equipment (these devices are commonly referred to as soot filters). At that time, the Energy Commission believed that a licensed Mechanical Engineer was necessary because of the technical nature of such an installation and the fact that soot filters were relatively new to the construction industry.

The Energy Commission's current practice is that that level of expertise is unnecessary, as most applicants comply with the construction conditions simply using new diesel engines rather than install soot filters. Therefore, the Energy Commission changed the requirement from a licensed Mechanical Engineer to an Air Quality Construction Mitigation Manager (AQCMM), who is intended to identify and review construction equipment entering the project site, among other responsibilities. The AQCMM is responsible for enforcing all of the elements within Condition of Certification AQC-1, of which the following have been proposed to be modified:

- The frequency of watering is modified from "twice daily" to "as necessary" leaving it to the judgment of the AQCMM.

Other modifications to the construction conditions are consistent with current practices of the Energy Commission and are specific to the project site. They include the following elements and will be enforced by the AQCMM:

- At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when visible soil materials are carried onto adjacent public or private paved roads.
- Provide gravel ramps of at least 20 feet in length at the tire washing/cleaning station.
- Gravel or treat all unpaved exits from the construction site to prevent track-out to public roadways.
- Ensure that all construction vehicles enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

- Sweep all paved roads within the construction site at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

The proposed modifications (above) are consistent with the project site and recent Energy Commission licenses. These modifications appear in Condition of Certification AQC-1.

The proposed modifications to Condition of Certification AQC-2 are consistent with recent Energy Commission licenses and require the use of California Air Resources Board Tier 1 and 2 diesel engines or if such engines are not available, require the use of Tier 0 (unregulated) engines with soot filters, if practical. Under the following three specific conditions the AQCMM may avoid the instillation of soot filters on a single piece of construction equipment:

- There is no available soot filter that can be installed and operated in a safe and effective manner.
- The construction equipment is intended to be on-site for ten (10) days or less.
- The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

PROPOSED MODIFICATIONS TO THE ORIGINAL COOLING SYSTEM (AQ-45 AND AQ-46)

The project was originally licensed with a standard wet cooling tower, equipped with 0.0005% drift eliminators and a total dissolved solids limit in the discharged makeup water of not more than 5,666 ppmw. PG&E now proposes to build a dry cooling system as well as an auxiliary wet surface air cooled heat exchanger (WSAC). PG&E is also petitioning to add an inlet chiller, but that addition will not affect any Conditions of Certification.

The WSAC is proposed to operate no more than 4,000 hours per year and primarily in the months of August and September when temperatures are highest. The WSAC is proposed to be used as an auxiliary cooling system if the temperatures and turbine load warrant. Otherwise, the Gateway project is proposed to be cooled by the dry cooling system alone. According to the PG&E calculations, the overall project daily emissions of PM10 will be reduced by approximately 38 lbs/day and 6.8 tons/year because of the removal of the wet cooling tower system.

The proposed modifications will affect Conditions of Certification AQ-45 and AQ-46. These conditions were originally proposed by the Bay Area Air Quality Management District (BAAQMD) in the Final Determination of Compliance. With this proposed modification, the BAAQMD will most likely exempt the Gateway cooling system, based on the fact that the proposed cooling system is a closed loop system and is thus not subject to their regulatory requirements. Thus the BAAQMD will most likely

delete those conditions from their permits. However, PG&E and Energy Commission staff has agreed to maintain the Conditions of Certification AQ-45 and AQ-46 with the proposed modifications and eliminate the reporting requirements to the BAAQMD. This is consistent with how the Energy Commission regulates cooling towers in the absence of other regulatory agencies such as the local air district.

PG&E proposes very minor modifications to Condition of Certification AQ-45 including the following elements:

- Referencing the wet surface air cooler (WSAC).
- The drift eliminators are 0.003% and not 0.0005% which is a required design element for this technology.
- The TDS (total desolved solids) limit in the waste makeup water is reduced from 5,666 ppmw to 2,500 ppmw.
- The water sampling (for TDS) is reduced from once per day to once in each of the two months of August and September.

PG&E proposes slightly more significant modifications to Condition of Certification AQ-46 including the following elements:

- Reference to the WSAC.
- A daily PM10 emission limit of 4.7 lbs/day from the WSAC.
- A standard formula by which to calculate the daily emission.

The proposed modifications to Conditions of Certification AQ-45 and AQ-46 are consistent with the Energy Commission practice of regulating all emitting devices operating on the project site and are consistent with the proposed new equipment operation.

CONCLUSIONS AND RECOMMENDATIONS

Staff has analyzed the proposed changes and conclude that, with the proposed modification of Conditions of Certification AQC-1, AQC-2, AQ-45 and AQ-46, there will be no new or additional significant impacts associated with approval of the petition and that the project PM10 emissions will be reduced by approximately 38 lbs/day and 6.8 tons/year. Staff believes that the proposed changes are based on information that was not available during the original licensing procedures. Staff concludes that the proposed language retains that intent of the original Commission Decision and Conditions of Certification.

PROPOSED MODIFICATIONS TO THE AIR QUALITY CONDITIONS OF CERTIFICATION

AQC-1 During construction of this facility, the following fugitive emission control measures shall be implemented at the plant site:

a. Suspend all land clearing, grading, earth moving, or excavation activities when winds (including instantaneous gusts) exceed 20 miles per hour.
b. Apply water to active construction sites and unpaved roads ~~at least twice daily~~ as frequently as necessary to control fugitive dust. The frequency of watering can be reduced or eliminated during periods of precipitation.
c. Apply sufficient water or dust suppressants to all material excavated, stockpiled, or graded to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard.
d. Apply a non-toxic solid stabilizer to all inactive construction areas (previously graded areas which remain inactive for 96 hours).
e. No on-site vehicle shall exceed a speed of 15~~0~~ miles per hour on unpaved roads or areas.
f. All trucks hauling dirt, sand, soil, or other loose material will be watered or covered and will maintain at least two feet of freeboard to prevent a public nuisance.
g. Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip.
h. ~~Sweep streets with a water sweeper at the end of each day if~~ At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when visible soil materials are carried onto adjacent public or private paved roads.
i. Re-establish ground cover on the construction site through seeding and watering as soon as possible, but no later than final occupancy.
j. Implement all dust control measures in a timely and effective manner during all phases of project development and construction.
k. Place sandbags adjacent to roadways to prevent run off to public roadways.
l. Install wind breaks at the windward sides of construction areas prior to the soil being disturbed. The wind breaks shall remain in place until the soil is stabilized or permanently covered.
~~m. Limit construction vehicles and equipment idle time to no more than 5 minutes.~~
m. Provide gravel ramps of at least 20 feet in length at the tire washing/cleaning station.
n. Gravel or treat all unpaved exits from the construction site to prevent track-out to public roadways.
o. Ensure that all construction vehicles enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
p. Sweep all paved roads within the construction site at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

Verification: The project owner shall maintain a daily log of water truck activities, including record of the frequency of public road cleaning. These logs and records shall be available for inspection by the CPM during the construction period. The project owner shall identify in the monthly construction reports, the area(s) that the project owner shall cover or treat with dust suppressants. The project owner shall make the construction site available to the District and the City of Antioch inspection staff and the CPM for inspection and monitoring.

AQC-2 The project owner shall employ the following measures to mitigate, to the extent practical, construction-related emission impacts from off-road, Diesel-fired construction equipment. These measures include the use of oxidizing soot filters, oxidizing catalysts, Diesel fuel certified to CARB low sulfur fuel standards (sulfur content less than 15 ppm) and Diesel engines that are either equipped with high pressure fuel injection, employ fuel injection timing retardation or are certified to EPA Tier 2 off-road equipment emission standards. Additionally, the project owner shall restrict idle time, to the extent practical, to no more than 5 minutes.

The use of each mitigation measure is to be determined by an Air Quality Construction Mitigation Manager (AQCMM) ~~qualified independent California Licensed Mechanical Engineer (ME)~~. The AQCMM ~~ME~~ is to be approved by the CPM prior to the submission of any reports. The AQCMM ~~ME~~ will determine the mitigation measures to be used within the following framework.

Construction Mitigation Framework

1. No measure or combination of measures shall be allowed to significantly delay the project construction or construction of related linear facilities.
2. No measure or combination of measures shall be allowed to cause significant damage to the construction equipment or cause a significant risk to on site workers or the public.
3. Engines certified to Tier 2 off-road equipment emission standards and CARB certified low sulfur Diesel fuel may be used in lieu of oxidizing soot filter and oxidizing catalyst.

The AQCMM will, in consultation with the California Air Resources Board (CARB), submit the following reports to the CPM for approval:

- Construction Mitigation Plan
- Reports of Change and Mitigation Implementation
- Emergency Termination of Mitigation Reports (as necessary)

Construction Mitigation Plan

The Construction Mitigation Plan shall be submitted to the CPM for approval ~~prior to rough grading on the project site~~ and will include:

1. A list of all Diesel fuel burning, off-road stationary or portable construction related equipment to be used either on the project construction site or the construction sites of the related linear facilities.

~~2. All equipment listed under (1) shall be identified as either using engines certified to EPA and CARB 1996 or better off-road equipment emission standards, using diesel engines that are equipped with high pressure fuel injection, or using Diesel engines that employ fuel injection timing retardation.~~

~~3. The determination of the suitability of all equipment listed under (1) to work appropriately with an oxidizing catalyst shall be identified except as provided for in item 2 of the Construction Mitigation Framework above. If a piece of equipment is determined to be unsuitable for an oxidizing catalyst, the ME will provide an explanation as to the cause of this determination.~~

~~4. The determination of the suitability of all equipment listed under (1) to work appropriately with an oxidizing soot filter shall be identified except as provided for in item 2 of the Construction Mitigation Framework above. If a piece of equipment is determined to be unsuitable for an oxidizing-soot filter, the ME will provide an explanation as to the cause of this determination.~~

2. All construction Diesel engines, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that item of equipment shall be equipped with a Tier 1 engine. In the event a Tier 1 item of equipment is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed Diesel particulate filter (soot filter), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" if, among other reasons:

    a) There is no available soot filter that can be installed and operated in a safe and effective manner; or
    b) The construction equipment is intended to be on-site for ten (10) days or less.
    c) The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

3. All heavy earthmoving equipment and heavy-duty construction related trucks with engines meeting the requirements of (2) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

~~5~~4. ~~Maximum idle times shall be identified for all equipment listed under (1).~~ All Diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical.

~~6~~5. The sulfur content of all Diesel fuel to be burned in any equipment ~~listed under (1) shall be identified~~ used at the construction site shall be ultra-low sulfur Diesel, which contains no more than 15 ppm sulfur.

Report of Change and Mitigation Implementation

The ~~ME~~ AQCMM shall submit a Report of Change and Mitigation Implementation for approval to the CPM following the initiation of construction activities, which contains at a minimum the cause of any deviation from the Construction Mitigation Plan, and verification of the Construction Mitigation Plan measures that were implemented. Verification includes, but shall not be limited to, the following:

1. EPA or CARB engine certifications for item 2 of the Construction Mitigation Plan.
2. A copy of the contract agreement requiring subcontractors to comply with the elements under item 2 of the Construction Mitigation Plan.
3. Confirmation of the installation of either oxidizing catalysts or oxidizing soot filters as identified in items 2 and 3 ~~and 4~~ of the Construction Mitigation Plan or the cause preventing the identified installations.
4. A copy of the contract agreement requiring subcontractors to comply with the elements under item 4 ~~5~~ of the Construction Mitigation Plan.
5. A copy of receipts of purchase of Diesel fuel indicating the sulfur content as identified in item 5 ~~6~~ of the Construction Mitigation Plan.

Emergency Termination of Mitigation Report

If a specific mitigation measure is determined to be detrimental to a piece of construction equipment or is determined to be causing significant delays in the construction schedule of the project or the associated linear facilities, the mitigation measure may be eliminated or terminated immediately. However notification must be sent to the CPM for approval containing an explanation for the cause of the termination. All such causes are restricted to one of the following justifications and must be identified in any Emergency Termination of Mitigation Report:

1. The measure is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or power output due to an excessive increase in back pressure.
2. The measure is causing or reasonably expected to cause significant damage to the construction equipment engine.
3. The measure is causing or reasonably expected to cause a significant risk to nearby workers or the public.
4. Any other seriously detrimental cause which has approval by the CPM prior to the change being implemented.

Verification: The project owner shall submit the qualifications of the ~~ME~~ AQCMM and the Construction Mitigation Plan to the CPM for approval ~~at least 30 calendar days prior to rough grading on the project site~~. The project owner shall submit the Report of Change and Mitigation Implementation to the CPM for approval no later than 10 working days following the use of the specific construction equipment on either the project site or the associated linear facilities. The project owner shall submit any Emergency Termination of Mitigation Reports to the CPM for approval, as required, no later than 10 working days following the termination of any identified mitigation measure. The CPM will monitor the approval of all reports submitted by the project owner in consultation with CARB, limiting the review time for any one report to no more than 20 working days.

AQ-45 The ~~cooling towers~~ wet surface air cooler (WSAC) shall be properly installed and maintained to minimize drift losses. The ~~cooling towers~~ WSAC shall be equipped with ~~high efficiency mist~~ drift eliminators with a maximum guaranteed drift rate of 0.00~~05~~3%. The maximum total dissolved solids (TDS) measured at the base of the ~~cooling towers~~ WSAC or at the point of return to the wastewater facility shall not be higher than ~~5,666~~ 2,500 ppmw (mg/l). The owner/operator shall sample the water at least ~~once per day~~ once in the month of July, once in the month of August and once in the month of September each year while the WSAC is in operation. (PSD)

Verification: At least 30 days prior to commencement of cooling tower construction, the project owner/operator shall provide to the ~~District and~~ CEC CPM a copy of the cooling tower manufacturer's specifications demonstrating the 0.00~~05~~3 percent drift rate. The project owner/operator shall submit the water sample test results with the Quarterly Emissions Report required by Condition of Certification AQ-14.

AQ-46 The owner/operator shall perform a visual inspection of the wet surface air cooler (WSAC) drift eliminators at least once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to the initial operation ~~of the CCPP Unit 8,~~ of the WSAC the owner/operator shall have the WSAC vendor's field representative inspect the ~~cooling tower~~ drift eliminators and certify that the installation was performed in a satisfactory manner. ~~The CPM may, in years 5 and 15 of the cooling tower operation, require the owner/operator to perform a source test to determine the PM10 emission rate from the cooling tower to verify continued compliance with the vendor-guaranteed drift rate specified in conditions AQ-45. (PSD)~~ The owner operator shall verify that the PM10 emissions from the WSAC do not exceed 4.7 lbs/day based on the most recent total dissolved solids, measured in compliance with Condition of Certification AQ-45, and by the use of the following formula:

PM10 (lb/day) = 24*water flow rate (lbm/hour) * design drift rate (percent)

* total dissolved solids (ppm)/10^8.

Verification: The project owner/operator shall keep records of all tower inspections and shall make them available for the ~~District and~~ CEC CPM upon request. The project owner/operator shall report the calculated PM10 emissions from the WSAC to the CPM in the Quarterly Emissions Report required in Condition of Certification AQ-14.

BIOLOGICAL RESOURCES ANALYSIS
Prepared by Rick York
February 6, 2007

BACKGROUND

Pacific Gas and Electric (PG&E) has determined that a new power plant cooling technology is needed for the new Gateway Generating Station, originally licensed by the Energy Commission in 2001 as the Contra Costa Unit 8 project. PG&E has requested to amend the project description so that the new Gateway Generating Station can utilize dry cooling technology instead of re-using San Joaquin River water for power plant cooling that was originally used by the existing Contra Costa Power Plant. This change in cooling technology requires that several Biological Resources Conditions of Certification, related to the use of river water which has biological resource concerns, be changed since the project will not use river water for power plant cooling.

ANALYSIS

When the Contra Costa Unit 8 project was licensed in 2001, several Biological Resources Conditions of Certification were included in the Energy Commission Decision to address biological resource concerns related to the re-use of river water for power plant cooling. The use of river water for cooling required that Mirant, the owner of the existing Contra Costa Power Plant, provide verification that the existing power plant was in compliance with all state and federal laws, ordinances, regulations, and standards since the original Contra Costa Unit 8 project intended to re-use water from the existing Contra Costa power plant. Since PG&E now intends to use dry cooling for the Gateway Generating Station, they will no longer need water from the river, so providing verification that the Contra Costa Power Plant is in compliance with various state and federal regulations to be in compliance with various Energy Commission Conditions of Certification will no longer be necessary. In particular, Conditions of Certification related to the installation of the Aquatic Filter Barrier to reduce entrainment impacts and the requirement to provide copies of a federal Biological Opinion from the National Marine Fisheries Service, a California Department of Fish and Game Incidental Take Permit, and Streambed Alternation Agreement, are no longer needed.

CONCLUSIONS AND RECOMMENDATIONS

Biological Resources staff strongly supports the proposed change in power plant cooling technology since dry cooling requires little or no water, and the water that will be needed will not come from the San Joaquin River. Therefore, the Gateway Generating Station biological resource impacts are significantly lessened by changing to dry cooling. Staff recommends several changes to the project's Biological Resources Conditions of Certification to accurately reflect this change in cooling technology and the elimination of specific requirements related to biological resource issues associated with the use of San Joaquin River water for power plant cooling.

CONDITIONS OF CERTIFICATION

Staff proposes the following changes to the Biological Resources Conditions of Certification. Additions are shown in *italics* and deletions are shown in ~~strikethrough~~.

BIO-1 Construction site and/or ancillary facilities preparation (described as any ground disturbing activity other than allowed geotechnical work) shall not begin until an Energy Commission Compliance Project Manager (CPM) approved Designated Biologist is available to be on-site.

Protocol: The Designated Biologist must meet the following minimum qualifications.

1. a Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;

2. three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society;

3. one year of field experience with biological resources found in or near the project area; and

4. an ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during project construction and operation.

If the CPM determines the proposed Designated Biologist to be unacceptable, the project owner shall submit another individual's name and qualifications for consideration. If the approved Designated Biologist needs to be replaced, the project owner shall obtain approval of a new Designated Biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement.

Verification: At least sixty (60) days prior to the start of any ground disturbance activities, the project owner shall submit to the CPM for approval the name, qualifications, address, and telephone number of the individual selected by the project owner as the Designated Biologist. If a Designated Biologist is replaced, the information on the proposed replacement as specified in the Condition must be submitted in writing at least ten working days prior to the termination or release of the preceding Designated Biologist.

BIO-2 The CPM approved Designated Biologist shall perform the following duties:

1. Advise the project owner's supervising construction or operations engineer on the implementation of the biological resources Conditions of Certification;

2. Supervise or conduct mitigation, monitoring, and other biological resources compliance efforts; and

3. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification.

Verification: During project construction, the Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted in the Monthly Compliance Reports to the CPM. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

BIO-3 The project owner's supervising construction and operations engineer shall act on the advice of the Designated Biologist to ensure conformance with the biological resources Conditions of Certification. The project owner's supervising construction and operating engineer shall halt, if necessary, all construction activities in areas specifically identified by the Designated Biologist as sensitive to assure that potential significant biological resources impacts are avoided.

The Designated Biologist shall:

1. Inform the project owner and the supervising construction and operating engineer when to resume construction; and

2. Advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two (2) working days of a Designated Biologist notification of non-compliance with a Biological Resources Condition or a halt of construction, the project owner shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a Condition. For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM within five (5) working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

BIO-4 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities (including any access roads, storage areas, transmission lines, water and gas lines) during construction and operation, are informed about sensitive biological resources associated with the project.

Protocol: The Worker Environmental Awareness Program must:

1. be developed by the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;

2. discuss the locations and types of sensitive biological resources on the project site and adjacent areas;

3. present the reasons for protecting these resources;

4. present the meaning of various temporary and permanent habitat protection measures; and

5. identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: At least sixty (60) days prior to the start of rough grading, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. During project operation, signed statements for active project operational personnel

shall be kept on file for the duration of their employment and for six (6) months after their termination.

BIO-5 The project owner will implement the mitigation measures proposed in the Application for Certification regarding biological resources (Southern 2000a, pages 8.2-13 to 8.2-14) and Phase ll Environmental Site Assessment (Southern 2000c, pages 5-9). The project owner's proposed mitigation measures will be incorporated into the final Biological Resources Mitigation Implementation and Monitoring Plan (see Condition of Certification **BIO-8**, below) ~~unless the mitigation measures conflict with mitigation required by the U. S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Game that is contained in their respective Biological Opinions and Incidental Take Permit, or in the State Streambed Alteration Permit~~.

Protocol: The project owner will make certain the following are completed:

1. Upon completion of construction, all areas subject to temporary ground disturbance will be subject to post-construction cleanup.

2. All grass areas subject to temporary disturbance due to construction activities will be seeded with an appropriate grassland seed mix.

3. In accordance with the Contra Costa tree ordinance, Tree Protection and Preservation (chapter 816-6), all oak trees removed will be replaced onsite with a minimum replacement ratio of 2:1. Removal of trees will be conducted during the non-breeding season for local birds (September-January).

4. The applicant shall establish erosion control measures to minimize the terrestrial and airborne movement of soils, sediments, and other substances into the San Joaquin River or connected waterways, as described in the AFC pages 8.9-4 and 8.9-5.

5. The applicant shall conduct pre-construction surveys for active raptor nests at least 30 days prior to the beginning of site preparation.

6. To ensure the likelihood of successful completion of required mitigation, the applicant shall designate a qualified biologist to advise the project owner or its project manager on the implementation of these Conditions of Certification, and to

supervise and/or conduct mitigation, monitoring, and other biology compliance efforts.

~~7. The applicant shall construct, monitor, maintain and evaluate the effectiveness of the Aquatic Filter Barrier.~~

8. Implement a Worker Environmental Awareness Program (see **BIO-4**).

Verification: At least sixty (60) days prior to start of any project related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plan's acceptability within fifteen (15) days of receipt of the final plans. Implementation details for the above measures shall be included in the BRMIMP.

BIO-6 The project owner will implement the following staff proposed mitigation measures and the project owner shall include them in their BRMIMP submittal. The BRMIMP shall include implementation measures for each of the following protocol measures.

Protocol: The project owner will:

1. implement all mitigation, monitoring and compliance conditions included in the Commission's Final Decision;

~~2. implement all terms and conditions contained in the USFWS, NMFS, and CDFG Biological Opinion(s) (HCP/2081);~~

~~3. implement all terms and conditions contained in the State Streambed Alteration permit;~~

4. build new above-ground transmission lines and connections to reduce the risk of electrocution for large birds;

5. describe in detail the monitoring methodologies, duration, and frequency for each type of monitoring established for mitigation actions;

6. describe performance standards to be used to help decide if/when proposed mitigation is or is not successful~~, including the effectiveness of the Aquatic Filter Barrier~~;

~~7. implement a monitoring and evaluation program that will determine the effectiveness of the Aquatic Filter Barrier. The project owner will determine the effectiveness of the Aquatic Filter Barrier by~~

~~conducting impingement and entrainment sampling (day and night) for eggs and larvae of fish, crabs and clams (as possible) for a minimum of three months following Aquatic Filter Barrier installation and operation. Source water shall be sampled inside and outside the Aquatic Filter Barrier enclosed water area, for eggs and larvae of fish, crabs and clams (as possible), at the same time as impingement and entrainment (day and night) sampling in order to determine the effectiveness of the Aquatic Filter Barrier. The project owner will submit an Impingement and Entrainment Study Plan for CPM approval prior to certification.~~

8. identify all remedial measures to be implemented if performance standards are not met;

9. reduce exterior lighting on all structures to the minimum except for those required for aviation warning, all other required exterior lighting on structures will be shielded to direct light downward;

10. reduce soil erosion during construction and operation by applying mitigation measures identified in the AFC and comply with State Water Resources Control Board/Regional Water Quality Control Board standards;

11. reduce the potential for animals falling into trenches or other excavated sites by covering them at the end of the work day if left unattended, or provide wildlife escape ramps for construction areas that contain steep-walled holes or trenches, and inspect trenches each morning for trapped animals prior to the beginning of construction. Construction will be allowed to begin only after trapped animals are able to escape voluntarily;

12. clearly mark construction area boundaries with stakes, flagging, and/or rope or cord to minimize inadvertent degradation or loss of adjacent habitat during facility construction. All equipment storage will be restricted to designated construction zones or areas that are currently not considered sensitive species habitat;

13. post signs and/or fence the power plant construction site and laydown areas to restrict vehicle access to designated areas;

~~14. designate a specific individual as a contact representative between the project owner, USFWS, NMFS, Energy Commission, and CDFG to oversee compliance with mitigation measures detailed in the Biological Opinion;~~

15. provide a post-construction compliance report, within forty-five (45) calendar days of completion of the project, to the ~~USFWS, CDFG, and the~~ Energy Commission;

16. make certain that all food-related trash will be disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited; and

17. prohibit firearms except for those carried by security personnel.

Verification: At least 60 days prior to the start of surface disturbing activities at the project site and/or at ancillary facilities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plans acceptability within 15 days of receipt of the final plan. Within 30 days after completion of construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which condition items are still outstanding.

~~**BIO-7** Prior to the operation of CCPP Unit 8 by itself, the project owner shall provide final copies of the Biological Opinions/HCP obtained from the USFWS, NMFS, and the 2081 permit and the Streambed Alteration Permit from CDFG and incorporate the terms of the agreement(s) into the BRMIMP.~~

~~**Verification:** At least 90 days prior to the start of CCPP Unit 8 operation, the project owner shall submit to the project CPM copies of the final Biological Opinions/HCP/2081.~~

BIO-8 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and shall implement the measures identified in the plan.

Protocol: The final BRMIMP shall identify:

1. all mitigation, monitoring, and compliance measures proposed by the Applicant, as well as those contained in, Condition of Certification **BIO-4**;

2. all mitigation, monitoring, and compliance measures proposed by the CEC staff, as well as those contained in, Condition of Certification **BIO-5**;

3. all mitigation, monitoring, and compliance measures included in other Biological Resources Conditions of Certification; and

4. a process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: At least sixty (60) days prior to start of any project related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plan's acceptability within fifteen (15) days of receipt of the final plan. The project owner shall notify and get approval from the CPM five (5) working days before implementing any modifications to the BRMIMP.

BIO-9 The project owner shall incorporate into the facility closure plan a Biological Resources Element that includes measures to address current local biological resources issues. The biological resource facility closure measures shall also be incorporated into the BRMIMP for this project.

Protocol: For permanent closure, biological resource-related measures shall include:

1. Removal of all power plant site facilities~~, including the AFB~~ or proposed alternatives actions;

2. Measures to restore wildlife habitat and promote the re-establishment of native plant and wildlife species, and

3. Updating the plan to address current biological resources issues.

For temporary, but prolonged closure, biological resource-related measures shall include:

1. Notifying the CPM of the project owner's decision to initiate a temporary, but prolonged closure~~;~~ *and*

~~2. Turning off the once-through cooling water system pumps; and~~

3. Updating the plan to address current biological resources issues.

Verification: At least twelve months (or a mutually agreed upon time) prior to the commencement of permanent closure activities a Biological Resources Element will be incorporated into the Facility Closure Plan and the BRMIMP and submitted to the CPM for review and comment. The CPM will be notified within two weeks of the project owner's decision for a temporary, but prolonged closure and provide an updated plan of action.

BIO-10: The project owner shall obtain a California Fish and Game Code Division 2, Chapter 6, Sections 1600-1607, Section 1603 Streambed Alteration Agreement as part of the Aquatic Filter Barrier installation and operation.

Verification: The project owner will submit copies of the final CDFG Streambed Alteration Agreements to the CPM at least 60-days prior to the start of project operation. The project owner shall notify the CPM in writing of any changes to and/or renewal of these permits/agreements at least 30 days prior to the effective date of the change.

BIO-11: The project owner will submit a work plan that discusses in detail the installation of the proposed Aquatic Filter Barrier (AFB), also known as the Gunderboom™. This work plan will identify all principal materials, methods, and equipment that will be used for the installation of the AFB. The work plan will also identify and demonstrate compliance with all LORS associated with the Gunderboom™ project including the California Fish and Game Code Division 2, Chapter 6, Sections 1600-1607, Section 1603 Streambed Alteration Agreement administered by the California Department of Fish and Game.

Verification: The AFB work plan will be submitted to the CPM and all other agencies issuing permits for the project at least 90 days prior to the start of construction activities. The work plan will contain copies of all final draft or final permits required for the installation of the AFB, and the Applicant will adhere to all conditions specified in these permits. The project owner will provide a summary report of the AFB installation that details and explains any activities, events, or incidents that deviate from those described in the work plan. The summary report will be sent to the CPM, and all other agencies issuing permits for the project within 30-days after completion of the AFB installation project, and prior to the start of plant operations.

SOIL AND WATER RESOURCES
Prepared by Richard Latteri
June 29, 2007

SUMMARY OF CONCLUSIONS

Pacific Gas & Electric (PG&E) Company proposes to eliminate the use of approximately 8,000 acre-feet per year (AFY) of San Joaquin River water for evaporative cooling in their redesigned Gateway Generating Station (GGS). In lieu of San Joaquin River water, PG&E proposes to use a hybrid dry cooling system that will be augmented with water from the City of Antioch (City) when ambient temperatures are above 80˚F.

Although the elimination of this large volume of San Joaquin River water is a benefit to the aquatic environment, PG&E would increase the plant's potable water consumption from less than 1-AFY to approximately 71-AFY based on operating the plant for 4,992 hours per year (57 percent capacity factor). However, PG&E has purchased pollution offset credits to operate the GGS at a 98.5 percent capacity factor, which would require as much as 120-AFY. Although this volume of potable water (71 – 120-AFY) is relatively small, the reliability of the City's potable water supply during a multiple dry-year scenario could not be confirmed.

By letter dated June 12, 2007, the City has confirmed that the GGS would be subject to water restrictions during a future drought. However, the letter also states: "The City will take all reasonable measures such as securing additional supply to ensure water delivery to the project". Therefore, staff has proposed that PG&E comply with all mandatory potable water use restrictions as specified in the Water Supply Agreement with the City of Antioch in Condition of Certification **SOIL & WATER 7**. Condition of Certification **SOIL & WATER 10** has been added which will cap potable water consumption at the GGS to 120 AFY. The change to Condition of Certification **SOIL & WATER 7** and the addition of Condition of Certification **SOIL & WATER 10** are required to mitigate the potential impacts to other users of the City's potable water supply to a less than significant level. Condition of Certification **SOIL & WATER 7** also requires an executed and final potable Water Supply Agreement with the City within six months of the Decision (COA 2007b).

In addition to the change to Condition of Certification **SOIL & WATER 7**, staff has recommended changes to Conditions of Certification **SOIL & WATER 1 – 4** and has added Condition of Certification **SOIL & WATER 10**. Staff agrees with PG&E's proposed deletion of Conditions of Certification **SOIL & WATER 5, 6 & 9**. Proposed deletion of text from the conditions of certification is shown by ~~strikethrough~~, and any newly proposed text is shown by <u>underline</u>.

INTRODUCTION

On December 19, 2006, PG&E filed a petition with the California Energy Commission to modify the GGS project, which was formerly known as Contra Costa Power Plant Unit 8 (CCPP-8). PG&E's petition contains several changes to the project design including a new cooling technology that does not involve the use of San Joaquin River water or an evaporative cooling tower; proposing instead to use a Wet Surface Air Cooler (WSAC) system (PG&E 2006, Sections 1.2 & 2.1.6).

This analysis addresses project changes that would potentially impact soil and water resources through the construction and operation of the proposed GGS project. Only those aspects of PG&E's proposed changes in Amendment 1C are examined as they relate to California Environmental Quality Act (CEQA) guidelines and current laws, ordinances, regulations, and standards (LORS). Additionally, any proposed changes that could affect staff's testimony for Soil and Water Resources, (including approved conditions of certification) as contained in the Commission Decision (Decision) dated May 30, 2001, are examined.

LAWS, ORDINANCES, REGULATION, AND STANDARDS

SOIL AND WATER Table 1
Laws, Ordinances, Regulations, and Standards

Federal LORS	
Clean Water Act (33 U.S.C. Section 1257 et seq.)	The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality, which includes regulation of stormwater discharges during construction and operation of a facility.
Resource Conservation and Recovery Act	The Resource Conservation and Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
State LORS	
Water Code Section 13260	Requires filing with the appropriate Regional Board (RB) a report of waste discharge for the protection to waters of the state, unless the requirement is waived pursuant to Water Code section 13269.
Water Code Section 13551	Requires the water resources of the state be put to beneficial use to the fullest extent they are capable, and the waste or unreasonable use or unreasonable method of use be prevented.
Local LORS	
Delta Diablo Sanitation District Section IV Compliance and Certification Statement	Delta Diablo Sanitation District's (DDSD) Non-Residential Application for Wastewater Utility Service and Compliance and Certification Statement for wastewater quality and quantity discharge standards
State Policies and Guidance	
California Constitution, Article X, Section 2	This section requires the water resources of the State be put to beneficial use to the fullest extent possible and states the waste, unreasonable use, or unreasonable method of use of water is prohibited.
California Code of Regulations, Title 23	Title 23, Division 3, Chapter 15, requires the RB to issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.

CWC Section 13550	Requires the use of recycled water for industrial purposes subject to recycled water being available and upon a number of criteria including: provisions that the quality and volume of the recycled water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources.
Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et seq)	In the 2003 IEPR, consistent with State Water Resources Control Board Policy 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating they will approve the use of fresh water for cooling purposes by power plants only where alternative water supply sources and alternative cooling technologies are shown to be "environmentally undesirable" or "economically unsound."

SETTING

The regional setting for the new project has not changed and the proposed GGS project will remain on the original CCPP-8 site. With the proposed change from evaporative cooling to the hybrid WSAC cooling system, the footprint of the GGS plant will increase from approximately 20-acres to 28-acres (CEC 2001b and PG&E 2007b, Data Response 8, Section 1.2).

PROJECT, SITE, AND VICINITY DESCRIPTION

PG&E proposes to construct the 530-megawatt GGS on the southeast side of the existing Contra Costa Power Plant (CCPP) site in an unincorporated portion of Contra Costa County within the sphere of influence of the City. The topography of the proposed GGS site is essentially flat with elevations from 8 to 10-feet above mean sea level (CEC 2001b).

The project site is located near the confluence of the Sacramento and San Joaquin rivers in the western Sacramento River Delta. The San Joaquin River in the vicinity of the GGS is strongly influenced by tidal and river flows. The water quality of the river at the project site is variable due to its position between the estuarine transition zone that separates the upstream freshwater delta from the downstream saltwater bay. Near the proposed GGS site the river changes from fresh water during periods of high river flow to brackish water during periods of lower flow. The volume of water that flows past the power plant between successive tidal phases is approximately 1.3 billion cubic feet (CEC 2001a and CEC 2001b).

PG&E proposes to eliminate the direct use of San Joaquin River water as the cooling water supply source for the GGS project. By switching from a wet to a hybrid dry cooling system, the large water supply requirements (approximately 8,000 AFY) from the San Joaquin River are eliminated (CEC 2001a and PG&E 2006, Section 2.1.1).

SOIL & GROUNDWATER CONTAMINATION

Soil contamination was found on the original CCPP-8 site during the June 1998, Phase II Environmental Site Assessment (ESA) that involved subsurface soil and groundwater testing. The Phase II ESA showed that several contaminants exist in

soil and groundwater at the proposed site, including volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), metals, and polychlorinated biphenyls (PCBs). The investigation found an area containing elevated levels of petroleum hydrocarbons in groundwater located at the northern end of the CCPP-8 site. In the construction laydown area, located at the southern end of the site, there is one small area with elevated levels of petroleum hydrocarbons in the groundwater and a larger area containing arsenic (CEC 2001b).

WATER SUPPLY AND WASTEWATER TREATMENT

PG&E evaluated a number of cooling alternatives before deciding on the WSAC system, which is a hybrid between an evaporative cooling tower and fin-fan air cooled condenser (ACC). The WSAC system uses water sprayed over the heat transfer bundles to increase the cooling capability of the system. The WSAC is expected to operate when ambient temperatures are above 80˚F, or when additional cooling capability is required beyond the capability of the fin-fan heat exchanger or evaporative precooling systems. Water demand for the project will be significantly lower than that of the originally licensed CCPP-8 due to replacement of the evaporative cooling system using a cooling tower with the WSAC system (PG&E 2006, Sections 2.1.2 & .6; PG&E 2007a and PG&E 2007d).

The proposed GGS project would still require a reliable water supply. As proposed, the GGS would continue to use water for construction, landscape irrigation, boiler make-up, WSAC operation, sanitary use, and fire suppression. Instead of using raw water from the San Joaquin River for all non-potable uses, potable water supplied by the City is proposed for all GGS construction and operation purposes (PG&E 2007b, Data Response 3).

WATER SUPPLY

The proposed elimination of the evaporative cooling tower required a redesign of the closed cycle water cooling system. The closed cycle water cooling system is independent from the WSAC system and is a much smaller closed loop system that provides cooling water to various plant equipment. PG&E has determined that a fin-fan heat exchanger, in combination with a small WSAC heat exchanger system will be used to provide the required heat rejection capability. The proposed fin-fan system is similar to an ACC system (PG&E 2006, Section 2.1.6).

On April 24, 2007, the Antioch City Council authorized supply of potable water to the GGS from the City's water supply system (COA 2007a). PG&E in their April 18, 2007, Revised Water Balances submittal has determined that operation of the WSAC system could provide sufficient benefit when ambient temperatures are above 80˚F. The revised water consumption is based on the WSAC operating 750-hours (hrs) per year over an operating year of 4,992-hrs (57 percent capacity factor). Based on this capacity factor and fewer hours of WSAC operation, the peak potable water demand drops from 233 gallons per minute (gpm) as reported in their December 2005 amendment to 115-gpm (PG&E 2007b, Data Response 2 and PG&E 2007d, Drawings WMB-3 & -5).

Staff considered PG&E's proposed 57 percent capacity factor (16 hours a day, 6 days a week) as a baseline; however, due to the pending retirement of older, less efficient power plants and the projected increase in the statewide demand for electricity, staff believes that the GGS will be required to operate at a higher capacity factor in the future. Therefore, staff has increased the hours of GGS operation from 4,992-hrs to 8760-hrs (100 percent capacity factor to correspond to previously purchased pollution offset credits) for the purpose of the Soil and Water Resources section of this analysis. Although staff understands that most combined-cycle non-base load power plants in California operate at a capacity factor between 50 and 65 percent, the 100 percent capacity factor is used solely for determining the maximum water use anticipated for the project.

Using PG&E's average demand of 70-gpm referenced on Drawings WMB-5, Water Mass Balance Case 5, staff calculated GGS water consumption at a 100 percent capacity factor. By adding the additional 3,768 hours per year of operation, the GGS would require a maximum of 120-AFY (71+49). In the operations impact analysis section of this assessment, staff will use 120-AFY as the volume of potable water consumed for operation of the proposed GGS.

PROCESS AND SANITARY WASTEWATER

Wastewater would be generated primarily from domestic sources with a small amount from plant processes. The primary plant wastewater collection system will collect wastewater from all plant equipment maintenance and service areas. The secondary wastewater collection system will collect sanitary wastewater from sinks, toilets, showers, and other sanitary facilities. PG&E proposes to discharge all wastewater from the GGS project to the Delta Diablo Sanitation District's (DDSD) lift station located on Bridgehead Road via a proposed 3,000-foot wastewater discharge pipeline. The proposed pipeline would exit the southern end of the GGS project onto Wilbur Avenue and will proceed east along Wilbur Avenue for approximately 2,000 feet to Bridgehead Road. At Bridgehead Road, the proposed pipeline would turn south for approximately 750 feet before turning southwest into the DDSD lift station (PG&E 2006, Section 2.1.2).

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

The new GGS project was analyzed to determine if it complies with LORS and meets the standards found in the CEQA Guidelines. The threshold of significance is based on the ability of the amended project to be built and operated without violating erosion, sedimentation, flood, surface or groundwater quality, water use (supply), or wastewater discharge standards.

The federal and state LORS and state and local policies presented in **SOIL AND WATER Table 1** were used to determine the threshold of significance for this

analysis. The following LORS and state and local policies are of particular relevance for determining the significance of a potential impact. For those impacts that exceed the published standards, or do not conform to the established practices, mitigation will be proposed by staff to reduce or eliminate the impact.

- The Clean Water Act requires states to set standards to protect water quality through the regulation of point source and certain non-point source discharges to waters of the United States.
- The Resource Conservation Recovery Act of 1976 seeks to prevent surface and groundwater contamination.
- Water Code Section 13551 requires the water resources of the state be put to beneficial use to the fullest extent they are capable, and the waste or unreasonable use or unreasonable method of use be prevented.
- City of Antioch municipal water code for hookup and delivery of potable water.
- Delta Diablo Sanitation District's Application for Wastewater Utility Service and Compliance and Certification Statement for the quality and quantity of wastewater discharge.

For those impacts that exceed the published standards, or do not conform to the established practices, mitigation will be proposed by staff to reduce or eliminate the impact. Such a determination will by necessity rely on science, technology, expert opinion, and best professional judgment to determine what the level of change to the baseline or pre-existing conditions should be. The requirement under CEQA is that decisions be based on "substantial evidence" that include "facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts", and not on "argument, speculation, unsubstantiated opinion or narrative." These are important requirements that guide both the analysis of the proposed GGS amendment and the determination of and mitigation for significant impacts.

DIRECT/INDIRECT IMPACTS AND MITIGATION

The direct and indirect impacts and mitigation discussion presented below is divided into a discussion of impacts related to construction and a discussion of impacts related to operation. For each potential impact discussed, PG&E's proposed mitigation is presented and staff's determination of the adequacy of the proposed mitigation is discussed. If necessary, staff will propose additional mitigation measures and refer to specific conditions of certification that may be added or amended that relate to a potential impact and the required mitigation measures.

CONSTRUCTION IMPACTS AND MITIGATION

As with the original CCPP-8 project, construction of the proposed GGS will include additional soil excavation, grading, building construction, and installation of utility connections. Potential impacts to soil and water resources can be caused by increased erosion or the release of hazardous materials during construction.

WATER AND WIND EROSION

The topography of the GGS site, laydown area, and linear features is nearly level with a mean elevation of approximately 10-feet above mean sea level. The majority of the soil disturbing activities were previously performed in 2001 under the original license, wherein the large foundations for the turbines and transformers were excavated and the excess soil stockpiled in the construction laydown area directly south of the proposed GGS (B&V 2007, Section 2.1 and PG&E 2007b, Data Response 8, Section 3).

The proposed GSS project will develop approximately 28-acres on the CCPP site, an increase of approximately 8-acres. Of the 28-acres, the northern portion of the site, consisting of approximately 8-acres, is paved with asphalt and aggregate surfaces. The remaining 20-acres where the generating units, WSAC, and construction laydown are located consist of disturbed soil (B&V 2007, Section 2.1 and CEC 2001a).

PG&E will implement both a Construction Storm Water Pollution Prevention Plan (SWPPP) and a Drainage, Erosion and Sediment Control Plan (DESCP). The March 29, 2007, revised Construction SWPPP and draft DESCP submitted by PG&E provide erosion control Best Management Practices (BMPs) for addressing soil erosion and treatment control methods for trapping eroded sediments during construction. The proposed BMPs include temporary and permanent seeding, mulching, geotextiles, silt fencing, dust suppression, sediment traps, sand bag berms, and drainage swales (B&V 2007 and PG&E 2007b, Data Response 8). However, given the existing on-site soil contamination from VOCs, PAHs, metals, and PCBs potential impacts related to soil loss could be exacerbated and off-site transport of eroded sediments could lead to significant water quality impacts to the San Joaquin River.

By letter dated October 1, 2003, the Central Valley Regional Water Quality Control Board (CVRWQCB) informed those dischargers within their jurisdiction that additional treatment controls are required prior to stormwater discharges associated with certain new development and redevelopment projects (CVRWQCB 2003). Contra Costa County, as a Co-Permittee of an area-wide municipal stormwater discharge (MS4) permit for discharges associated with industrial activity (including construction activities), is required to implement a Stormwater Management Plan (SWMP) per Order No. 5-00-120. Provision D.11 of Order No. 5-00-120 allows for modification of the Order to incorporate more effective approaches to pollution control approved under Section 402(p) of the CWA (CVRWQCB 2000). The requirements of Contra Costa County's MS4 permit and any future modifications per Provision D.11 of Order No. 5-00-120 will be added to Conditions of Certification **SOIL & WATER 1 & 2** as part of the Construction SWPPP and DESCP. Staff has also amended Conditions of Certification **SOIL & WATER 1 & 2** to reflect recent agreements between the Energy Commission and project owners for the review and approval of SWPPPs and the new requirements of a final DESCP.

With implementation of appropriate BMPs that are a requirement of the DESCP and SWPPP, PG&E expects to keep soil loss due to water and wind erosion to a negligible amount that would not constitute a significant impact. Staff agrees that the proper selection and implementation of BMPs can reduce the impact to soil resources from water and wind erosion to a level that is less than significant. Conformance with the procedures in an approved DESCP will limit erosion and migration of any remaining contaminants that may be disturbed by construction from entering the San Joaquin River. Staff has reviewed the March 29, 2007, revised Construction SWPPP and draft DESCP. Those documents require PG&E to test and monitor soil and runoff from the GGS site. Condition of Certification **SOIL & WATER 1** will be amended to include Provision D.11 of CVRWQCB Order No. 5-00-120 and to include compliance with Contra Costa County's MS4 permit. Condition of Certification **SOIL & WATER 2** will be amended to include the specific requirements for a DESCP.

Because adequate steps will be taken as part of the design and implementation of the Construction SWPPP and DESCP as required in the amended Conditions of Certification **SOIL & WATER 1 & 2**, staff believes soil loss and erosion from construction of the GGS will not cause a significant impact.

SURFACE AND GROUNDWATER QUALITY

During construction of the GGS, several areas (power block foundation and wastewater sump) may require excavations below groundwater depth (PG&E 2007c). If groundwater is encountered, PG&E proposes dewatering and hazardous waste management BMPs. Any groundwater encountered would be sampled prior to discharge into the existing fuel oil secondary containment pond and the CVRWQCB consulted before final off-site disposal. PG&E has proposed dewatering BMPs in their revised GGS Construction SWPPP and DESCP. No impacts to surface and groundwater resources will occur during construction of the GGS project if Conditions of Certification **SOIL & WATER 1 & 2** are implemented (B&V 2007 and PG&E 2007b, Data Response 8, Section 4.6).

OPERATION IMPACTS AND MITIGATION

Operation of the proposed GGS could lead to potential impacts to soil, surface water from stormwater and non-stormwater runoff, water supply, and wastewater treatment. Soils may be impacted through erosion or the release of hazardous materials used in the operation of the GGS. Water quality could be impacted by the discharge of eroded sediments from the GGS site; discharge of hazardous materials released during operation; or migration of existing hazardous materials present in the subsurface soil.

SOIL EROSION

After the proposed GGS site has been graded, compacted, landscaped, and the drainage system installed, there will be minimal potential for natural erosion. Routine vehicular access to the site during operation will be limited to exiting roads. Standard operating activities are not expected to cause soil disturbance.

Soil impacts and the potential for soil erosion will not be significant. An Industrial SWPPP for plant operations will be developed to set performance standards and monitoring provisions will be required for effective stormwater pollution identification and mitigation. Condition of Certification **SOIL & WATER 3** will require the submittal and implementation of a site-specific Industrial SWPPP. Additionally, Condition of Certification **SOIL & WATER 3** has been amended to reflect recent agreements between the Energy Commission and project owners for the review and approval of SWPPPs and to remove burdensome requirements that are not appropriate for an Industrial SWPPP. With the implementation of the Industrial SWPPP that complies with Contra Costa County's MS4 permit, no significant impacts to soil resources from GGS operation are expected.

SURFACE AND GROUNDWATER QUALITY

Development of roads, buildings, and other impermeable surfaces as part of the GGS project will not substantially increase the runoff rate or volume discharge from the GGS site. The increase of impervious surfaces of the proposed GGS is slightly larger than that of the approved CCPP-8. Therefore, the potential for increased stormwater runoff or increased sediment or contaminants conveyed to the San Joaquin River is not significant and will be mitigated by implementation of the Industrial SWPPP as amended in Conditioned of Certification **SOIL & WATER 3**.

STORMWATER

PG&E proposes to submit and implement an Industrial SWPPP for the protection of surface and groundwater. With the added requirement of Order No. 5-00-120 to Condition of Certification **SOIL & WATER 3** that allows for Contra Costa County monitoring and enforcement, operation of the proposed GGS will not cause increased stormwater runoff from the plant. Staff believe that with the submittal and implementation of the site-specific requirements in Condition of Certification **SOIL & WATER 3**, including compliance with Order No. 5-00-120, impacts to the San Joaquin River from stormwater runoff during GGS operation will be less than significant.

GROUNDWATER

Operation activities at the GGS would have minimal potential to impact groundwater resources in the project area. PG&E does not propose to use groundwater during operation. With implementation of the Industrial SWPPP and the post-construction requirements of Order No. 5-00-120, operation of the GGS would not impact groundwater resources.

WATER SUPPLY

In their amendment petition (00-AFC-1C), PG&E proposes to eliminate the use of San Joaquin River water for all industrial plant operation purposes; thereby, replacing approximately 8,000-AFY of river water with 71-AFY (120-AFY at a 100 percent capacity factor) of potable water from the City's system. As proposed in the

original CCPP-8 Application for Certification (00-AFC-01), the potable water demand for CCPP-8 would have been less than 1-AFY and would have been used for potable purposes only.

Although the City provided a "Will Serve" letter to PG&E dated April 30, 2007, the letter lacked the quantitative information that commits the City to a peak delivery rate of 115-gpm during summer months and a reliable long-term supply (30-35 years) of 120-AFY (COA 2007a). Additionally, the potential direct, indirect, and cumulative impacts of this volume and rate of potable water consumption could not be assessed due to the absence of a discussion of the potential impacts to other users of the City's potable water supply over the same 30-35 year period (PG&E 2007b, Data Response 4). In staff's final assessment for the CCPP-8 project, the City's delivery capability of 26 million gallons per day (mgd) from the Water Treatment Plant was seasonally maximized. This assessment is interpreted as occurring during peak delivery periods during the summer months. Therefore, the 115-gpm of GGS demand during peak delivery periods may not be sustainable (PG&E 2007d and CEC 2001, pg 402).

According to the December 2005 draft *Urban Water Management Plan Update* (UWMP), the City's primary sources of raw water are the Contra Costa Canal (Canal) and the San Joaquin River. The City receives water from the Contra Costa Water District (CCWD) through the Canal, and has an agreement with CCWD for an annual peak delivery of 25,000-gpm (40,320-AFY). Unless constrained by drought conditions, CCWD will make available to the City this peak delivery rate through the year 2028. The City can presently draw no more than 16-mgd from the San Joaquin River and this is only when the mean chloride concentration level is less than 250 milligram per liter. Because of this saline limit, the City was not able to pump from the river during the drought years of 1976 -1977 and for only seven days per year during the drought years of 1986 -1991. The City recognizes that pumping from their river diversion point can only be viewed as an intermittent raw water source and San Joaquin River supply will be reduced or unavailable during a multiple year drought. Table 4-8 of the draft UWMP forecasts a 30 percent reduction in San Joaquin River water from 47,870-AFY to 34,270-AFY in a multiple dry-year scenario similar to the historic multiple dry water years of 1987 – 1991 (COA 2005, pg. 4-1, 2 & 3; Tables 4-8 & -9).

Section 7.3 of the draft UWMP states: "Based on available supplies and reasonable levels of local water conservation, the City should have adequate supply to meet normal, single, and multiple dry years." Although the generic forecasts presented in the tables support this conclusion, no specifics on population growth or increase in commercial or industrial development were included in Section 7 of the draft UWMP. Furthermore, water supply and demand by water type (potable, raw, or recycled) were not disaggregated from the totals presented in Section 7; thus precluding any analysis of long-term potable water supply for the GGS (COA 2005, Section 7).

Because of inadequate long-term potable water supply and demand data for the City of Antioch and the conclusion in the draft UWMP that "reasonable levels of local water conservation" would occur during multiple dry years, it appears that direct, indirect, and cumulative impacts would occur from PG&E's long-term use of potable water from the City. Additionally, the draft UWMP provides historic data of reduced San Joaquin River supply during the droughts of 1976 -1977 and 1986 -1991.

Based on the City's letter to PG&E dated June 12, 2007 (COA 2007b), the City may not be able to supply the GGS with a dependable water supply during an undefined future drought. The letter goes on to state: "Water conservation measures include both voluntary and mandatory water conservation measures. The project could be subject to such water restrictions as would other City water users." Therefore, without new sources of raw water, a forced curtailment of GGS generation could occur during a multi-year drought. The curtailment of electric generation due to a lack of water supply would most likely occur during a summer month when hydro-electric generation is low and summer air conditioning loads are high. This curtailment could be for an unknown duration and would exacerbate statewide generation supply at a time when demand is at its highest.

INDUSTRIAL AND SANITARY WASTEWATER DISPOSAL

Industrial and sanitary wastewater from the GGS would be discharged to DDSD's sewer system. The discharge of this combined wastewater to DDSD's sewer system would be subject to the requirements of DDSD's hookup and pretreatment requirements for the quality and quantity of wastewater to be discharge. Condition of Certification **SOIL & WATER 4** has been amended to include the requirements of DDSD's hookup and pretreatment standards for wastewater discharge. Condition of certification **SOIL & WATER 4** requires PG&E to provide the Compliance Project Manager (CPM) a copy of all information and data necessary to comply with DDSD's hookup and pretreatment requirements. Compliance with **SOIL & WATER 4** will ensure there are no significant impacts from the combined wastewater discharge to DDSD's sewer system.

CUMULATIVE IMPACTS AND MITIGATION

SOIL EROSION

Construction activities related to the GGS may cause a temporary increase in cumulative wind and water erosion due to soil disturbing activities until stabilized or covered by pavement. GGS linear facilities would be installed in existing roadways and utility right-of-ways to the maximum extent possible and could contribute to a significant cumulative impact if existing utilities are impacted and service disrupted. The mitigated soils loss would reduce adverse soil impacts to less than a significant level.

SURFACE HYDROLOGY

Disturbed soils could increase the sediment and pollution loading to the San Joaquin River. However, no cumulative impacts are expected if BMPs are employed in

accordance with the DESCP and the Construction and Industrial SWPPPs. Implementation of those plans in concert with the County's municipal permit requirements for stormwater discharges will mitigate potential cumulative surface hydrology impacts from the GGS project to less than significant levels.

WATER SUPPLY

Based on the draft UWMP, the City will implement both voluntary and mandatory water conservation methods, and by the second or third dry year the City would require cutbacks of 10 and 15 percent respectively (COA 2005, Section 7.2 & 7.3). Mandated conservation or cutbacks will impact both current and future potable water customers.

Because of the incomplete data provided by PG&E in their amendment application and Data Response 4, the analysis of all potential impacts from the use of the City's potable water supply could not be performed. The City recognizes that drought will occur and the GGS could be subject to future water restrictions if new water sources are not secured. The City's approval of an additional 71 – 120 AFY of potable water deliveries to the GGS could impact both existing and future municipal and industrial customers during a multi- year drought. Without a drought proof water supply, the GGS could be subject to forced generation curtailment due to a reduced potable water supply. Because of this unmitigated impact to current and future potable water users, staff has proposed a maximum cap of 120-AFY of potable water consumption for the GGS in Condition of Certification **SOIL & WATER 10,** . Additionally, staff has proposed that PG&E comply with all mandatory potable water use restrictions required in the Water Supply Agreement with the City of Antioch for the operation of GGS in Condition of Certification **SOIL & WATER 7**. Compliance with Condition of Certification **SOIL & WATER 7** will mitigate future cumulative impacts to other potable water customers to a less than significant level.

GROUNDWATER

The project will not use groundwater. There is a slight possibility groundwater may be encountered during construction and require dewatering. Groundwater requiring dewatering during construction will be managed in accordance with the Construction SWPPP and DESCP.

The entire GGS site would be covered with impervious materials, gravel, or landscaping after construction. Chemical storage areas would have secondary containment. All surface flow from the project site would first flow to the stormwater system before discharge to the San Joaquin River. There will be no cumulative impacts from GGS construction or operation to groundwater resources.

WASTEWATER

The wastewater streams from the GGS project include plant drainage from equipment areas, contact stormwater, and sanitary wastewater. The combined wastewater flow will be monitored to assure compliance with DDSD's pretreatment requirements. DDSD has sufficient capacity to accept GGS's wastewater, and

compliance with DDSD's quality and quantity requirements will ensure no cumulative impacts to the sanitary sewer system will occur.

RESPONSE TO AGENCY COMMENTS

Staff received comments from the SFBRWQCB by letter dated February 23, 2007 (SFBRWQCB 2007). SFBRWQCB Executive Officer, Bruce H. Wolf, recommends that the Energy Commission require PG&E to use an evaporative cooling system (cooling tower) using recycled water instead of a dry cooling system at the GGS. Tertiary treated recycled water would be supplied by the DDSD (approximately 5,000-AFY) and the concentrated brine from the cooling tower would be returned to DDSD's wastewater treatment plant for discharge to their deep water diffuser in New York Slough. DDSD is currently permitted by the SFBRWQCB for this type of discharge and is not expected to exceed their permitted salinity limits (DDSD 2003 and DDSD 2007).

Additionally, Mr. Wolf refers to PG&E's proposed potable water consumption of about 240-AFY (which PG&E has subsequently reduced per their revised water balances submittal dated April 18, 2007), and that its use is in conflict with state water policy for the use of potable water for industrial purposes. Staff appreciates Mr. Wolf's support of state laws and policies (CWC 13146, 13550 & 13551; Article X, Section 2 of the State Constitution) regarding the beneficial use of potable water and have considered those laws and policies in this assessment.

Staff's assessment of PG&E's proposed water consumption and long-term reliability finds that potable water from the City is not a drought proof supply and recommends that the GGS be subject to all mandatory water conservation measures as specified in the Water Supply Agreement with the City of Antioch. To this end, PG&E may reconsider the use of recycled water for all non-potable uses as the economics dictate. The use of recycled water for the WSAC system would require a smaller volume of recycled water from DDSD. Regardless, the decrease from 5,000-gpm of San Joaquin River water that would have been used for the original CCPP-8 project to approximately 70-gpm (San Joaquin River water is the raw water source for the City's Water Treatment Plant) is a tremendous water quality benefit for the San Joaquin River and the San Francisco Bay.

PG&E's decision to use a hybrid dry cooling system is consistent with the Energy Commission's policy to eliminate large quantities of fresh water consumption for evaporative cooling in combined-cycle power plants. PG&E considered recycled water from DDSD for use with an evaporative cooling tower but found the online availability and source reliability to be problematic (PG&E 2007a). In the absence of an unmitigable significant impact from the use of potable water supplied by the City, PG&E's decision to use the WSAC system is CEQA compliant and conforms to Energy Commission policy to reduce the consumption of fresh water for power plant cooling. Although staff has recommended that a 120-AFY cap (based on PG&E's revised water balances and 100 percent capacity factor) be placed on potable water

consumption at the proposed GGS in conformance with CWC Section 135551, PG&E shall clearly identify the necessity for any potable water consumption that exceeds 100-AFY. The accounting will be provided as part of the Annual Compliance Report (ACR) for the project.

CONCLUSIONS

Although the elimination of approximately 8,000 AFY of San Joaquin River water for evaporative cooling is a benefit to the aquatic environment, PG&E proposes to increase the plant's potable water consumption from less than 1- AFY to approximately 71-AFY (120-AFY at a100 percent capacity factor). Based on the City of Antioch's (City) December 2005 draft *Urban Water Management Plan Update* (UWMP), the reliability of the City's potable water supply during a multiple dry-year scenario could not be confirmed. Therefore, staff has proposed that a 120 AFY cap on potable water consumption and specific reporting requirements be included in Condition of Certification **SOIL & WATER 10**. The addition of Condition of Certification **SOIL & WATER 10** and the change to Condition of Certification **Soil & Water 7** are required to mitigate the potential impacts to other users of the City's potable water supply to a less than significant level. With implementation of Conditions of Certification **SOIL & WATER 7 & 10**, CEQA impacts from construction and operation of the GGS would be mitigated to a less than significant level.

AMENDED AND PROPOSED CONDITIONS OF CERTIFICATION

The following soil and water resources conditions of certification are the original conditions of certification contained in the Decision or modifications to those conditions that staff have identified as a result of federal and state law or project changes proposed by PG&E for the proposed GGS. A number of the original conditions have been modified by staff to reflect recent agreements between the Energy Commission and project owners for the review and approval of SWPPPs and the new requirements of a final DESCP. Strikeout is used to indicate deleted language and underline for new language.

PROPOSED CONDITIONS OF CERTIFICATION

SOIL & WATER 1 ~~Prior to site mobilization of the proposed project and any ground disturbance activities associated with construction of any project linear element, the project owner shall obtain Energy Commission staff approval for a Storm Water Pollution Prevention Plan (SWPPP) as required under the General Stormwater Construction Activity Permit for the project (see Condition of Certification SOIL & WATER 3).~~ The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (Construction SWPPP) for the construction activities on the GGS site,

laydown area, and all linear facilities. The Construction SWPPP shall include all requirements of Contra Costa County's (County) Municipal Storm Water (MS4) permit, including any future requirements to the (MS4) permit per Provision D.11 of the Central Valley Regional Water Quality Control Board (CVRWQCB) Order No. 5-00-120. The project owner shall keep the CPM informed of any modification to the permits.

Verification: ~~Thirty days prior to the start of any site mobilization activities associated with the construction of the project and/or ground disturbing activities associated with construction of any project linear element, the project owner shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) to the Energy Commission Compliance Project Manager (CPM) for review and approval. Approval of the plan by the Energy Commission CPM must be received prior to the initiation of any site mobilization activities associated with construction of any project element.~~ The project owner shall submit to the CPM a copy of the Construction SWPPP that includes all the requirements of the County's MS4 permit per Order No. 5-00-120 prior to earth moving or construction activities associated with the project and retain a copy on-site. The project owner shall submit to the CPM copies of all correspondence between the project owner and the County about the County's MS4 permit and the CVRWQCB about the General NPDES permit for the Discharge of Stormwater Associated with Construction Activity within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent for the project.

SOIL & WATER 2: ~~Prior to beginning any site mobilization activities associated with construction of the project and/or ground disturbance activities associated with construction of any project linear element, the~~ The project owner shall obtain ~~staff~~ CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan (DESCP) ~~final erosion control and revegetation plan~~ that addresses all project elements. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification CIVIL-1 and may incorporate by reference any Storm Water Pollution Prevention Plans (SWPPP) developed in conjunction with any state or municipal NPDES permit. ~~The final plan to be submitted for Energy Commission's approval shall contain all the elements of the draft plan with changes made to address any staff comments and the final design of the project (see Condition of Certification SOIL & WATER 3).~~ The DESCP shall contain the following elements:

A. Vicinity Map – A map(s) at a minimum scale 1"=100' shall be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

B. Site Delineation – All areas subject to soil disturbance for the GGS project (project site, lay down area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction area 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 swales, storm drains, and drainage ditches. Indicate the proximity of those features to the GGS project construction, lay down and landscape areas, and all transmission and pipeline construction corridors.

D. Drainage Map – The DESCP shall include a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim, and proposed drainage systems and drainage area boundaries. On the map, spot elevations and contours shall be extended off-site for a minimum distance of 100 feet.

E. Drainage Narrative – The DESCP shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities and shall include of how the DESCP complies with SFBRWQCB Order No R2-2003-0022. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres used in the calculation of drainage control measures. The hydraulic analysis should be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the GGS project construction and laydown areas.

F. Clearing and Grading Plans – The DESCP 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 will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. Clearing and Grading Narrative – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the GGS project (project site, lay down areas, transmission corridors, and pipeline corridors) to include those materials removed from the site due to demolition, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported.

H. Best Management Practices – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be

employed during each phase of construction (initial grading/demolition, excavation and construction, and final grading/stabilization). BMPs shall include measures designed to prevent wind and water erosion. Treatment control BMPs used during construction should enable testing of groundwater and stormwater prior to discharge to the San Joaquin River.

I. **Best Management Practices Narrative** – The DESCP shall show the location (as identified in H above), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading/demolition, during project excavation and construction, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs, or a statement provided when such information will be available.

~~**Verification:**~~ As determined by the CPM, the project owner shall submit a copy of the DESCP to Contra Costa County (County) for review and comment. As determined by the CPM, the project owner shall submit the DESCP and the County's comments to the CPM for review and approval. The CPM shall consider comments received from the County on the DESCP before issuing approval. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and relevant portions of the DESCP shall clearly show approval by the Chief Building Official. The DESCP shall be a separate plan from the SWPPP(s). The project owner shall provide in the monthly compliance report a narrative on the effectiveness of the drainage, erosion, and sediment control measures; the results of monitoring and maintenance activities; and the dates of any dewatering activities. ~~The erosion control and revegetation plan shall be submitted to the Energy Commission CPM no later than thirty days prior to site mobilization and/or ground disturbance associated with construction of linear facilities. Approval of the final plan by the Energy Commission CPM must be received prior to the initiation of site mobilization activities associated with construction of any project element.~~

SOIL & WATER 3: The project owner shall comply with the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (Industrial SWPPP) for the operation of the GGS. The Industrial SWPPP shall include all requirements of Contra Costa County's (County) Municipal Storm Water (MS4) permit, including any future requirements of the MS4 permit per Provision D.11 of the Central Valley Regional Water Quality Control Board (CVRWQCB) Order No. 5-00-120. The project owner shall keep the CPM informed of any modification to the permits. ~~Prior to commercial operation, the project owner, as required under the General Industrial~~

~~Activity Storm Water Permit, will develop and implement a Storm Water Pollution Prevention Plan (SWPPP). Approval for the final Industrial Activities SWPPP must be obtained from Energy Commission staff prior to commercial operation of the power plant. The SWPPP will contain the following:~~

1. ~~Erosion Control and Stormwater Management drawings need to accompany the narrative portion of the SWPPP. Both the drawings and the narrative need to be detailed and specific and include the following amendments and additions for the proposed CCPP project:~~
2. ~~The topographic features of the proposed project including areas involving all proposed pipeline construction, laydown (staging) area, and stockpile location(s). The mapping scale should be 1"=100' or less (1"=50' recommended). The drawings should depict the surrounding area (east of site) including the topography and existing features should be provided on the drawings. The drawings should also show existing structures, drainage pipes, and diversion swale(s).~~
3. ~~Soil use limitations associated with construction and revegetation need to be acknowledged and resolutions provided to assist the contractor in overcoming any limitation (refer to the soil survey for specific soils information).~~
4. ~~Proposed contours should be shown tying in with existing ones. All proposed utilities including stormwater facilities should be shown on the plan drawings. All erosion and sedimentation control facilities should be shown on the mapping. The drawings should contain a complete mapping symbols legend that identifies all existing and proposed features including the soil boundary and a limit of construction. The limit of construction boundary should include the project facility, pipeline areas, stockpile areas and laydown areas. The limit of construction ensures all work is confined to the proposed CCPP Unit 8 project in order to protect all surrounding areas not involved in construction or operation of the proposed project.~~
5. ~~A detailed and specific construction sequence that addresses all sequence of events from initial mobilization until final stabilization (i.e., vegetation/asphalt) is achieved. Silt fence and haybales, installed on level grade and parallel to the existing contour. If the slope length to the silt fence and haybales exceeds 250 feet, other erosion and sediment control facilities should be used. Silt fence and haybales should be used to trap sediment, and not as runoff conveyance or control facilities.~~
6. ~~All site-specific Best Management Practices (BMPs) on the erosion and sediment control plan and the stormwater management plan. Provide all proposed vegetative areas on the drawings and soil amendment specifications with regards to excessive drainage, low pH, and high salinity characteristics of the site soil types. The stormwater management plan should provide the entire drainage area along with supporting calculations that include a curve number, time of concentration, and rainfall intensity. These calculations should be provided to~~

~~demonstrate that the existing stormwater pipes and additional pipes, if required, are of sufficient size to handle the runoff from the proposed project. All final plans approved for adequacy are to be implemented by the contractor. The CPM should be contacted before any revisions are made to the approved plans.~~

7. ~~Dewatering facilities, in the event of groundwater contact during excavation activities.~~
8. ~~Stormwater inlet protection during construction.~~
9. ~~Disturbed areas including stockpiles treated with dust suppressors to reduce fugitive dust pollution.~~
10. ~~The erosion control drawings and narrative, designed and sealed by a professional engineer/erosion control specialist and not by the contractor.~~

Verification: ~~Thirty days prior to the start of commercial operation, the project owner will submit to the CPM a copy of the Storm Water Pollution Prevention Plan (SWPPP) prepared under requirements of the General Industrial Activity Storm Water Permit. The final plan shall contain all the elements of the draft plan with changes made to address staff comments and the final design of the project.~~ The project owner shall submit to the CPM a copy of the Industrial SWPPP that includes all requirements of the County's MS4 permit per CVRWQCB Order No. 5-00-120 prior to commercial operation and retain a copy on-site. The project owner shall submit to the CPM copies of all correspondence between the project owner and the County about the County's MS4 permit and CVRWQCB about the General NPDES permit for the Discharge of Stormwater Associated with Industrial Activity within 10 days of its receipt or submittal. The Industrial SWPPP shall include a copy of the Notice of Intent for the project.

SOIL & WATER 4: ~~The project owner shall obtain the National Pollutant Discharge Elimination System Permit from the CVRWQCB for the Contra Costa Power plant prior to operation of CCPP Unit 8. The project owner shall comply with all provisions of the National Pollutant Discharge Elimination System Permit. Based on the draft NPDES permit conditions, and subject to adoption of the final NPDES permit by the CVRWQCB, the wastewater discharge from Unit 8 could be affected by new more stringent effluent limitations, primarily as a result of the promulgation of the California Toxics Rule by the USEPA. The San Joaquin river is listed as a impaired water body under the Clean Water Act Section 303(d), meaning that it does not meet ambient water quality standards for several constituents. Until the final NPDES permit is issued, it is unknown at this time how this status will affect the combined wastewater discharge. The project will be required to meet all conditions contained in the NPDES permit, and will not operate without the permit in place.~~ Prior to commercial operation, the project owner shall provide the CPM and the

Delta Diablo Sanitation District (DDSD) with all information and data necessary to satisfy DDSD's requirements for the discharge of sanitary and plant wastewater (wastewater) into DDSD's sewer system. During operation, any monitoring reports provided to DDSD shall be provided to the CPM. The CPM shall be notified of any violations of discharge limits or amounts.

~~Verification:~~ At least 60 days prior to commercial operation, the project owner shall submit all information and data required by DDSD for the discharge of wastewater to DDSD's sewer system to DDSD for review and comment, and to the CPM for review and approval. During operation, the project owner shall submit any water quality monitoring required by DDSD to the CPM in the annual compliance report. The project owner shall submit any notice of violations from DDSD to the CPM within ten days of receipt and fully explain the corrective actions taken in the annual compliance report. ~~The project owner will provide a copy of the final National Pollutant Discharge Elimination System Permit from the CVRWQCB to the CEC CPM at least 30-days prior to the start of construction. The project owner shall submit to the Energy Commission CPM in the annual compliance report a copy of the annual monitoring report submitted to the CVRWQCB. The project owner shall notify the Energy Commission CPM in writing of any changes to and/or renewal of this permit at least 30-days prior to the effective date of the change.~~

~~**SOIL & WATER 5:** The project owner shall obtain the Section 10 Rivers and Harbors permit/authorization from the USCOE as part of the Aquatic Filter Barrier installation and operation.~~

~~**Verification:** The project owner will submit copies of the final USCOE Section 10 permit/authorization at least 30 days prior to the start of construction. The project owner shall notify the Energy Commission CPM in writing of any changes to and/or renewal of the authorization/agreements at least 30 days prior to the effective date of the change.~~

~~**SOIL & WATER 6:** The project owner will submit a workplan that discusses in detail the installation of the proposed Aquatic Filter Barrier (AFB), also known as the Gunderboom™. This workplan will identify all principal materials, methods, and equipment that will be used for the installation of the AFB. The workplan will also identify and demonstrate compliance with all LORS associated with the Gunderboom™ project to include Section 10 of the Rivers and Harbors Act.~~

~~**Verification:** The AFB workplan will be submitted to the CEC CPM and all other agencies issuing permits for the project at least 90 days prior to the start of installation activities. The workplan will contain copies of all final draft or final permits~~

~~required for the installation of the AFB, and the Applicant will adhere to all conditions specified in these permits. The Applicant will provide a summary report of the AFB installation that details and explains any activities, events, or incidents that deviate from those described in the workplan. The summary report will be sent to the CEC CPM, and all other agencies issuing permits for the project within 30-days after completion of the AFB installation project, and prior to the start of plant operations.~~

SOIL & WATER 7: ~~The project owner will obtain a final "will serve" letter, agreement, or contract signed by an authorized agent of the City of Antioch that indicates that the City has available capacity and will supply the potable water needs of the project. The "will serve" letter, agreement, or contract will contain any conditions, restrictions or requirements related to the supply and/or use of this water by the project. The project owner shall restrict the use of water supplied by the City of Antioch to potable and sanitary uses. Such water shall be specifically prohibited from being used for such purposes as process wash water, turbine inlet cooling make-up, cooling tower makeup, and other nonpotable uses. The project will not operate without a potable water supply in place.~~ The project owner shall provide the CPM with two (2) copies of an executed and final Water Supply Agreement for the long-term supply of potable water from the City of Antioch (City) for the construction and operation of the GGS project. The project owner shall not connect to City's water supply system without final approval from the City. The project owner shall provide the CPM copies of all monitoring or other reports required by the agreement. The project owner shall comply with all mandatory water conservation measures mandated in the Water Supply Agreement with the City. The project owner shall notify the CPM of all mandatory water conservation measures and those restrictions on potable water consumption by GGS mandated in the Water Supply Agreement with the City. The project owner shall notify the CPM of all water conservation measures taken and the impact on GGS generation. The project owner shall notify the CPM of any violations of the agreement's terms and conditions, the actions taken or planned to bring the project back into compliance with the agreement and the date compliance was reestablished.

Verification: ~~A copy of the final "will serve" letter and/or signed agreement or contract will be provided to the CPM at least 30 days prior to the start of project operation.~~ No later than 6 months from the date of the Decision, the project owner shall submit to the CPM two (2) copies of the executed long-term potable Water Supply Agreement and any other service agreement between the project owner and the City for the construction and operation of the GGS. During construction and operation, the project owner shall submit any water quality monitoring reports for potable water use required by the City to the CPM in the monthly and annual compliance reports. The project owner shall comply with all mandatory potable water use restrictions required in the Water Supply Agreement with the City for the

operation of GGS. The project owner shall submit any notice of violation of the agreement's terms and conditions and all notices of mandatory potable water conservation measures to the CPM within ten days of receipt and shall fully explain the corrective actions taken and/or the impact on GGS operation/generation in the next monthly compliance report or annual compliance report.

~~**SOIL & WATER 9:** The project owner will submit a workplan for a study designed to characterize both the sediment deposition rate and pattern within and in the immediate vicinity of the Sportsmen Yacht Harbor. The workplan will also discuss methods to characterize the rate of deposition of any leaf or other litter associated with the use of trees or other vegetation for visual or other barriers associated with the project, and discuss any landscape maintenance and/or best management capable of reducing impacts to the harbor. All materials, sampling methods, sampling locations, data quality assessment, and use of the data produced shall be discussed in the workplan. The study shall be designed to provide information on pre-project (prior to installation of the AFB) and post-project (after the installation of the AFB) sedimentation such that any changes related to the project can be quantified. If adequate pre-project data can not be generated due to time constraints/other reasons, an alternative method of determining project-related impacts should be provided.~~

~~The workplan will include a scheme for compensating the harbor for any project-related increase in maintenance dredging costs. To the extent possible and practicable, the project owner will consult the harbor owner(s) to obtain any available information on the historical maintenance dredging of the harbor.~~

~~**Verification:** The project owner will provide the workplan to the owners of the yacht harbor for review and comment, and to the Energy Commission CPM for review and approval at least 60 days prior to start of construction of the AFB.~~

SOIL & WATER 10 The project owner shall use potable water supplied by the City of Antioch for construction and operation of the GGS. Potable water consumption shall not exceed 120 acre feet (AF) for any consecutive 12-month period of operation. The initial 12-month period will start on the first full month of commercial operation. Prior to the use of potable water for plant construction, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volume of potable water supplied to the GGS. Those metering devices shall be operational for the life of the project.

The project owner shall prepare an annual Water Use Summary, which will include the monthly range and monthly average of daily potable water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. Any use of potable water that exceeds 100-AFY shall be documented in the Water Use Summary, along with an explanation of the necessity for the excess potable water use. In addition, the CPM shall be notified within 48 hours if the potable water use for the project exceeds 100-AFY. On-site potable water use shall be recorded on a monthly basis and reported in the next monthly compliance report or annual compliance report. For subsequent years, the annual Water Use Summary shall also include the yearly range and yearly average potable water use by the project. The annual Water Use Summary shall be submitted to the CPM as part of the Annual Compliance Report.

Verification: At least 30 days prior to installation of the potable water line to the City's water main, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the potable water supply and distribution system.

The GGS project owner shall submit a Water Use Summary to the CPM in the next monthly compliance report or annual compliance report. Potable water consumption for the 12 month period identified in the annual compliance report shall not exceed 120-AF. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report. The CPM shall be notified within 48 hours of the project exceeding 100-AFY of potable water use.

VISUAL RESOURCES
Prepared by David Flores
May 30, 2007

SUMMARY OF CONCLUSION

The Energy Commission found the visual impacts of the Gateway Generating Station (GGS) to be significant but mitigable. The proposed amendment would replace the cooling tower with an air-cooled condenser. This change would eliminate the visible water vapor plumes that were a significant concern during the original case. The ACC unit would be taller and more bulky than the original cooling tower, but the increased visual impact would not be so great to change the conclusions of the Commission Decision. The project will continue to comply with applicable laws, ordinances, regulations, and standards (LORS) pertaining to the preservation and protection of visual resources. Proposed deletion of text from the conditions of certification is shown by ~~strikethrough~~, and any newly proposed text is shown by underline.

INTRODUCTION

Staffs analysis reviews the proposed enhancement proposal which includes the following:

- Eliminating the use of San Joaquin River water as the cooling water source;
- Replacing the wet cooling tower system with a dry cooled (air cooled condenser) system;
- Relocation of various onsite project facilities;
- Change the combustion turbine inlet evaporative cooling system to a chilled water system;
- Eliminate the use of steam power augmentation; and
- Include a redesigned closed cycle cooling water system.

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS-COMPLIANCE

There are no changes to LORS as a result of the Gateway Generating Station (formerly Contra Costa Unit 8) proposed enhancement. Please refer to the 2001 FSA for the list of Visual Resources LORS.

BACKGROUND

The application submitted by Mirant Delta, LCC included the following components for the proposed Unit 8 facility:

- two combustion turbine generator and heat recovery steam generator (HRSG) trains (115 feet tall), including two 195 foot tall exhaust stacks;
- ten cell cooling tower system (59 feet tall);
- plant electrical switchyard (70 feet tall); and
- seven tubular steel 230 kV transmission towers (95 feet tall), of which four would be visible from off-site viewing areas.

The proposed Unit 8 plant would be sited on a newly graded pad 9 to 10 feet above mean sea level. The project would be located east of the existing Unit 6 and 7 power plant and northeast of the existing substation.

On April 10, 2001, Mirant Delta, LLC (applicant) submitted an "Enhanced Site Plan" that described the relocation of the project within the approximately 200-acre land parcel. The most significant change was that the power plant would be shifted approximately 525 feet south and 45 feet west of the originally planned location.

On July 19, 2006, the Energy Commission approved Mirant's petition of eliminating the sharing of facilities that would have required both Mirant and Pacific Gas & Electric (PG&E) to be obligated under the license for compliance with its Unit 8 license Conditions of Certification.

As discussed in the Introduction section of this analysis, the new owner, PG&E has proposed an enhancement proposal which includes replacing the wet cooling tower system with a dry cooled (air cooled condenser) system. The following analysis discusses the enhancement proposal and its visual impacts.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

Staff has reviewed the proposed enhancement proposal and determined that the key change that would affect the visual appearance of the project is the new air-cooled condenser (ACC) structure. As provided in the amendment petition, the ACC structure would be taller and longer (250 feet in length x 281 feet in width and 130 feet in height) than the other project components, and would have a larger footprint than the original ten-cell wet cooling tower (120 feet in length x 240 feet in width and 59 feet in height). The ACC unit would be located on the southern portion of the project site away from the waterfront, and is approximately in the same location of the previously proposed cooling towers. The original AFC for the proposed project identified vapor plumes as a significant visual impact. The ACC unit would not emit vapor plumes.

In the amendment, the applicant chose two Key Observation Points (KOP) from the seven KOPs selected from the original 2001 application to represent the existing visual setting and visual change that would occur with the installation of the ACC unit. In reviewing the original KOPs, and based on an onsite visit of the project site on March 14, 2007, staff included KOP-9 into the evaluation, which represents a view of the project site from the back deck of the Sportsmen Yacht Club.

KOP 1: ANTIOCH REGIONAL SHORELINE PARK

The view from KOP 1 is intended to be representative of views from the public fishing pier at the Antioch Regional Shoreline Park, and is approximately 0.4 mile to the east of the project site. Due to its recreational use, this view area is considered to have high visual sensitivity. From KOP 1, the proposed project site is partially visible to fishermen and boaters due to various obstructions in the view. The project site is identifiable as the area below the Antioch Bridge and immediately left of a private boat club, and ridgeline in the background view (see **VISUAL RESOURCES Figure 1**).

Viewing conditions at this park are very mixed. Views to the project site from much of the park are blocked by the intervening Antioch Bridge approach structure. Nevertheless, the park's fishing pier offers open views to the project site. While panoramic views of high scenic quality are the dominant feature of this park, the quality of views in the direction of the existing plant and surroundings is comprised of the existing Contra Costa Power Plant and other industrial facilities and is considered low. As reflected in the top view of **VISUAL RESOURCES Figure 1**, the HRSGs and stacks associated with the approved project are visible above the waterfront structures toward the center of the image. The wet cooling tower structure is completely screened by the bridge columns and mature vegetation near the water's edge. The bottom photo simulation in **VISUAL RESOURCES Figure 1** reflects the ACC structure on the left side of the view. The ACC unit is visible behind a grove of mature trees. Existing vegetation and the bridge columns provide partial screening of the new structure. Although the ACC structure will partially obstruct the views of the hills, an open vista of the hills and sky would continue to be available. Under the original application, the visible plumes from the cooling towers were considered a significant adverse impact not only from neighboring foreground viewpoints, but also from sensitive middleground viewpoints such as from the Antioch Bridge, which is designated as a State Scenic Route. With the elimination of the visible plumes from the cooling towers, the project modifications would result in a net visual benefit. As provided in conditions of certification VIS-4, the applicant will be required to plant trees along the eastern, northern and southern property lines to partially screen views of the project.

KOP 2: 18TH STREET/WILSON STREET NEIGHBORHOOD (RESIDENTIAL/MIXED)

KOP 2 is located on 18th Street near Wilson Street, and is at the entrance to the principal residential development in the vicinity. This viewpoint is located approximately 0.75 mile from the project site, in a location where open views exist

over low-lying vineyards north of 18th Street. Sensitivity of viewers is considered high due to the predominantly residential land use in the area.

The top photo of **VISUAL RESOURCES Figure 2** shows a simulation of the approved project as seen from KOP 2. In this simulation, the HRSGs and stacks as well as the cooling towers are visible from this vantage point. The cooling towers are located just below the Antioch Bridge, and just above the existing tree line. In the original application, Commission staff determined that although this is an open view, the majority of the view is typically obstructed by extensive existing industrial structures, thereby lowering the visual quality to a moderate level. The visual impact of plumes was also not considered critical, as views of the project from the two cemeteries and Almond Ridge Park would be completely filtered by intervening trees and structures.

The bottom photo of **VISUAL RESOURCES Figure 2** shows the ACC structure and reflects its appearance as prominent, although the base of the structure is partially screened by existing mature vegetation situated to the south of the site. The ACC unit would obstruct a portion of the Antioch Bridge, however a substantial portion of the bridge structure would remain visible from KOP 2. Similar to the discussion at KOP 1, the ACC unit would provide an additional structure in a view that includes a variety of large-scale industrial structures (i.e., transmission towers, existing power plant and stacks). The overall visual effect of the ACC unit would be relatively minor and result in an incremental change to existing visual conditions with the beneficial effect of eliminating visible plumes.

The project owner has proposed as part of the landscape plan to plant trees to partially screen views of the project. The proposal would include fast growing trees planted on the site along the eastern, northern, and southern property lines.

KOP 9: BACK DECK OF THE SPORTSMEN YACHT CLUB

The nearest neighboring facility to the Gateway project, the Sportsmen Yacht Club, has immediate foreground views of the project site across an existing access road. The club has 170 members with two to three long-term ‘live-aboard’ members and one on-site caretaker residence. The club’s historic Sausalito Ferry is dry-docked approximately 50 feet from the GGS property line, and serves as the principal meeting place for club members. The clubhouse receives frequent use, for both weekly gatherings and regular special events throughout the year. Members regularly stay overnight and the clubhouse is heavily used as a meeting place on weekends. An estimated 175 persons gather for larger events approximately 15–18 times per year. The main use area is the second level meeting hall. A south-facing balcony on this level (approximately 15 feet above ground level) is the location of KOP 9, and is an extension of that meeting area. This balcony and a similar north-facing balcony are the principal locations from which open views to the site occur. Trees along portions of the property line intermittently filter existing views from the Sportsmen Yacht Club to the project site. Interior views from the ferry to the project site are very limited and of much less importance.

In staff's supplemental analysis of the 2001 Enhanced Site Plan, staff concluded that realignment of the project by approximately 525 feet to the south from its original placement would reduce the visual impacts to KOP 9 (Yacht Club) from a visually highly dominant, significantly adverse level, to a co-dominant, less than significant level. The revised project, even without mitigation by proposed screening trees, would be less visually dominant and have less of an impact than the original project with mitigation after 5 years of tree growth. The trees would gradually become a substantial screen to most of the project's components.

The current amendment would replace the 59-foot tall wet cooling tower system with a 130-foot air-cooled condenser system. The dry cooling unit would be placed approximately 1100 feet south of the Yacht Club. Overall, the dry cooling unit would be highly dominant in mass, contrast, visual magnitude and visual quality would continue to be moderately low due to the industrial nature of the adjacent parcels. In addition, the dry cooling unit would block a portion of the ridgeline of hills to the south, although a substantial portion of the hills would remain visible and competing visually with, though not blocking, views of Mt. Diablo in the distance (see **VISUAL RESOURCES Figure 3** for a visual simulation of air-cooled condenser unit from KOP 9). Overall, the dry cooling unit would introduce an additional structure in a view that includes a variety of large scale industrial structures, therefore providing an incremental visual change which would in staff's view, would not substantially alter the existing character of the viewshed as originally discussed under the 2001 Enhanced Site Plan.

CUMULATIVE IMPACTS AND MITIGATION

The initial AFC and Final Staff Assessment (FSA) identified the project as increasing the industrial character of this portion of the shoreline. Although since the project's approval, a number of industrial sites, including the adjacent East and West Mills sites have begun clean-up efforts, and removal of industrial facilities. Given the presence of the remaining facilities under cumulative conditions, the project would generally be compatible with the areas overall visual character. In order to mitigate the proposed project's contribution to adverse cumulative effects, the decision required planting of tree screening on the north, south, and portions of the eastern plant boundaries.

In response to a staff request, the applicant submitted a visual simulation of the landscape plan on March 27, 2007 for visually screening the power plant and dry cooling unit from the back deck of the Sportsmen Yacht Club. The applicant reconfigured utilities and roads to allow for a minimum of 21 feet of planting space between the proposed plant and the property line of the Yacht Club. Under the original proposal, a raised berm was proposed to assist in the growth rate of the trees. The spacing proposed is not sufficient to create an adequate berm; therefore the berm is not part of the proposal.

VISUAL RESOURCES Figure 4 depicts the view from the ferry with proposed landscape screening after 5 years' growth, and at maturity, respectively. Staff believes that the anticipated growth at 5 years (24 feet) depicted in the top photo of Figure 4, effectively screens the project, reducing cumulative visual impacts to KOP 9 to a less than cumulatively considerable level. In Condition of Certification VIS-4, staff specifies several requirements that would create an effective visual screen in the shortest feasible period. No additional mitigation is necessary.

CONCLUSION

1. As discussed in this analysis, staff has determined that the installation of the air cooling condenser unit, as seen from KOPs 1 (Antioch Regional Shoreline Park), 2 (18th Street near Wilson Street), and 9 (Sausalito Ferry), would not result in a significant adverse visual impact. Condition VIS-4 as modified by staff would reduce the height of the trees from 50 feet to at least 30 feet as lowering the trees heights would continue to effectively screen the project's components and would not provide a confining effect to the members of the Yacht Club. The installation of the tree screening would reduce the project's contribution to cumulative impacts to a less than significant level.

2. With the installation of the air-cooled condenser unit, no vapor plumes would occur, therefore VIS-6 which requires cooling tower vapor plume abatement and VIS-7 which requires ground level cooling tower plume mitigation, would no longer be required, and should be removed from the visual Conditions of Certification approved in the 2001 Presiding Members Decision.

3. In reviewing the location of the San Joaquin Yacht Club in relation to the Gateway project, Commission staff has removed any reference of this club. The San Joaquin Yacht Club is located in Bethel Island, which is an inlet of the San Joaquin River, and is approximately 7 miles east of the Gateway project. The Yacht club is effectively screened by dense trees and numerous structures, therefore has no possible view of the project site.

CONDITIONS OF CERTIFICATION

VIS-4 At the earliest feasible time during facility construction, the project owner shall install permanent aesthetic screening on-site along the south, east, and north boundaries of the power plant site that will screen views of the facility from neighbors and the public to the maximum feasible extent, as follows:

a. Landscape screening shall consist of redwoods, ~~Eucalyptus globules 'Compacta~~ or other evergreen trees species that will achieve rapid and healthy growth, not produce a level of leaf debris problematic to harbor management, and provide the tallest growth possible, achieving an uninterrupted visual screen of at least ~~50~~'30' in height above existing

grade at maturity in the vicinity of the Sportsmen Yacht Club. Optimal screening in a reasonable short time frame may be achieved either by selection of rapidly growing species, or a larger sized plant material at time of installation, or both. However, the selected plant material shall be no less than 15 gallon at the time of planting.

b. In addition to tree planting, the planting area along the eastern site boundary shall be seeded with attractive groundcover.

c. The selected tree species shall be chosen in consultation with ~~the San Joaquin Yacht Harbor,~~ the Sportsmen Yacht Club, the City of Antioch, and the CPM.

d. Trees shall be irrigated until a height of ~~25~~'15' is achieved.

e. Other plants that are native to the local region such as oaks may also be used but only in a way that will not interfere with complete, uninterrupted screening.

f. The planting of screening trees shall be initiated as soon as practical during facility construction to begin tree establishment at the earliest feasible time.

g. At a minimum, the project owner shall conduct monthly tree and landscape maintenance to remove tree debris build-up and obstruction of the access road, for the life of the project.

~~h. If requested by resident caretakers at San Joaquin Yacht Harbor, off-site tree planting shall be provided to screen views of the proposed cooling tower from these residences. Such screening shall consist of plantings of sufficient size to ensure substantial screening within a period of five (5) years.~~

Protocol: The project owner shall submit an aesthetic screening plan to the Sportsmen Yacht Club ~~and San Joaquin Yacht Harbor~~, and the City of Antioch, for review and comment, and to the CPM for review and approval. The plan shall include, but not be limited to:

1. A detailed landscape, grading, and irrigation plan, at a reasonable scale, which includes a list of proposed tree and shrub species and installation sizes, and a discussion of the suitability of the plants for the site conditions and mitigation objectives. The plan shall explain how the screening conditions called for above shall be met, including evidence provided by a qualified professional arborist that the growth requirements specified above shall be met by the proposed plan.

2. Elevation views of the aesthetic screening projected for five (5) years and ten (10) years from the time of startup of operation of the facility that show the extent of screening that the landscaping is expected to achieve.

3. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal; and

4. A procedure for replacing unsuccessful plantings.

The landscaping and any other plan features shall not be installed before the plan is approved.

Verification: ~~No later than 90 days after certification~~ Prior to project startup and at least 90 days prior to installing the landscaping, the project owner shall submit the proposed aesthetic screening plan to the Sportsmen Yacht Club, ~~San Joaquin Yacht Harbor,~~ and the City of Antioch for review and approval, and to the CPM for review and approval. The project owner shall submit any required revisions within 30 days of notification by the CPM. The project owner shall complete installation of the screening at the earliest feasible opportunity to begin tree establishment. ~~but not later than 180 days after certification.~~ The project owner shall notify the CPM within seven days after implementing the approved plan that the aesthetic screening installation is ready for inspection. In the Annual Compliance Report, the project owner shall verify that the maintenance has been performed.

~~**VIS-6** The project owner shall design the cooling tower with a flow rate of no less than 7,500 kg/sec.~~

~~**Verification:** Thirty (30) days prior to cooling tower construction, the project owner shall submit final cooling tower design specifications to the CPM for review and approval.~~

~~**VIS-7** The project owner shall mitigate potential driving hazards on local roads due to ground level cooling tower plumes from the project.~~

~~**Verification:** Ninety (90) days prior to commercial operation, the project owner shall submit to the CPM for review and approval a plan to mitigate driving hazards on adjacent roads (e.g., Wilber Avenue) due to ground-level plumes from the project.~~

VISUAL RESOURCES - FIGURE 1

Gateway Energy Center - KOP #1, Existing and Simulation View - Fishing Pier, Antioch Regional Shoreline Park

Existing View

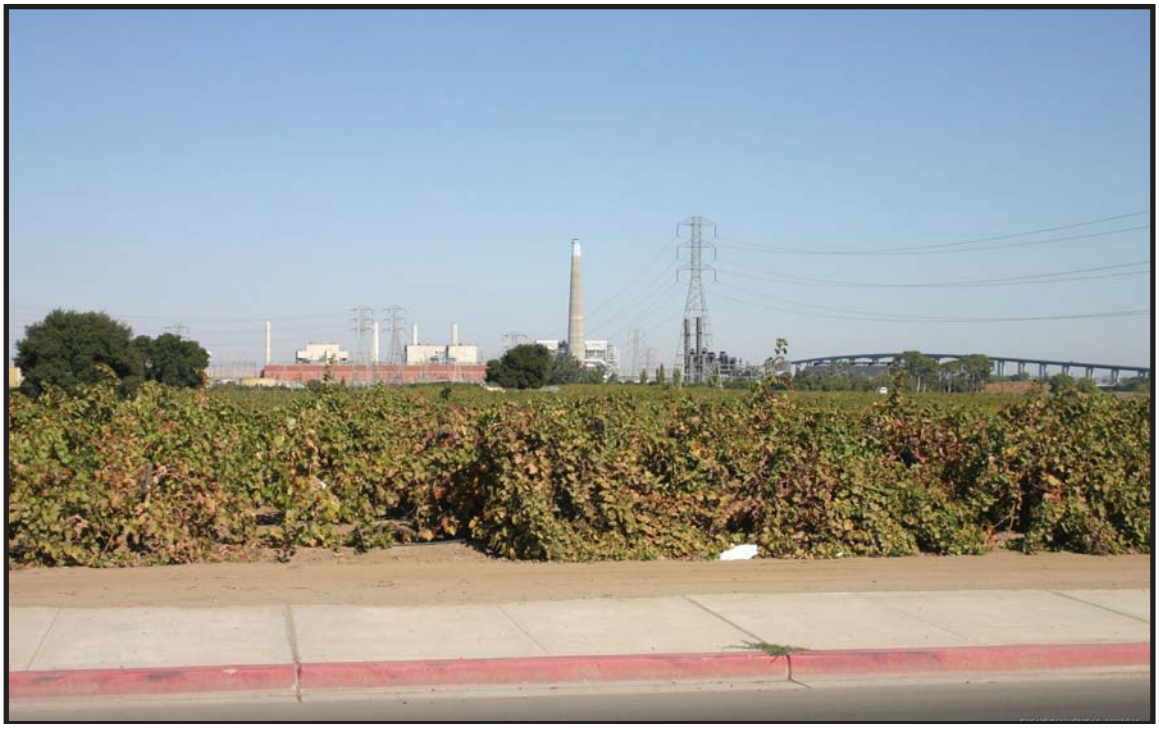
Visual Simulation

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, MAY 2007

SOURCE: AFC, Figure 3.11-4

VISUAL RESOURCES - FIGURE 2
Gateway Energy Center - KOP #2, Existing and Simulation View - 18th Street Near Wilson Street

Existing View

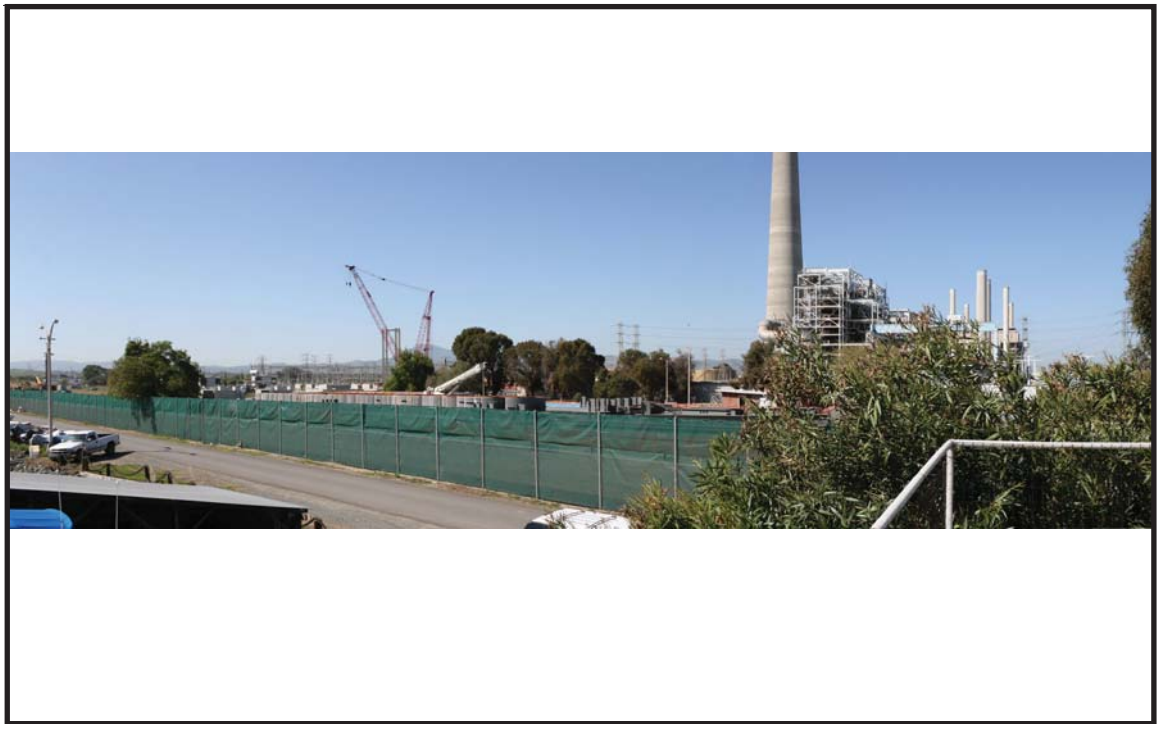


Visual Simulation

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, MAY 2007
SOURCE: Environmental Vision 2006, Figure 3.11-5

VISUAL RESOURCES - FIGURE 3
Gateway Energy Center - KOP #9, Existing and Simulation View - Sausalito Ferry at Sportsmen Yacht Club

Existing View



Visual Simulation

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, MAY 2007
SOURCE: CH2MHILL Figure A and B

VISUAL RESOURCES - FIGURE 4
Gateway Energy Center - KOP #9, Simulation Views - Sausalito Ferry at Sportsmen Yacht Club - With Landscaping at 5 Years Maturity and Full Maturity

Visual Simulation

Visual Simulation

CALIFORNIA ENERGY COMMISSION, SYSTEMS ASSESSMENT & FACILITIES SITING DIVISION, MAY 2007
SOURCE: CH2MHILL Figure B and C

Administrative Changes

Prepared by Christopher Meyer
May 25, 2007

The following proposed revisions to the Conditions of Certification for the Gateway Generating Station (GGS) are either administrative in nature, such as removing conditions of certification exclusively related to the wet cooling tower or use of San Joaquin River water, or proposing minor changes to the conditions of certification where the technical staff has determined that the change will not create any new impacts and no written testimony was necessary. Proposed deletion of text from the conditions of certification is shown by ~~strikethrough~~, and any newly proposed text is shown by underline.

Facility Design

With the design changes to the GGS facility, the Major Equipment List provided with the Condition of Certification **GEN-2** is no longer current. Staff proposes replacing the existing Major Equipment List with the updated Major Equipment List provided below as Table 1.

Table 1: Major Equipment List

Equipment/System	Quantity Plant	Size/Capacity*	Remarks
Combustion Turbine (CT) Generator	2	170 MW each	Dry Low NO_X combustion control. Either train can operate independently
Steam Turbine (ST)	1	250 MW	Single shaft HPT, IPT and LPT (2x1 configuration
Generators	3		Included with CT and ST
CTG Step-up Transformers	2	230-18 kV 129/172/215 MVA, ONAN/ONAF/ONAF	To electrical grid
STG Main Step-up Transformer	1	230-18kV 153/204/255 MVA, ONAN/ONAF/ONAF~~3600000 lb/hr~~	To electrical grid~~1 @ 100%~~
CT Inlet Air Filter	2		
Inlet Air Cooling	2		~~Evaporative/Refrigeration/Fogging~~Inlet Chiller
Air Compressor	3	~~1~~250~~,000 lb/hr~~ cfm	3 @ 50%
Fuel Gas Compressor	1		1 @ 100%
Fuel Gas Filter – Separator	2	~~550~~204,000 lb/hr	
Heat Recovery Steam Generator (HRSG)	2		HP, IP, LP with reheat
HRSG Stack	2		~~18'~~16'-7 1/8" dia.x195' high
Ammonia Injection Skid	2		Two blowers per HRSG
Ammonia Storage Tank	1	20,000 gal	Double walled
HP/IP HRSG feedwater pumps	2	1,700 gpm	HP with interstage bleed
~~Make up~~Fire Water Storage Tank	1	~~2,3~~500,000 gal	Includes ~~firewater~~200,000 gal for service water storage
Service Water Pumps	2		2 @ 100%
Demineralized Water Pumps	2	~~170~~ gpm	2 @ 100%
Demineralized Water Treatment Package	1	~~350~~225 gpm	Trailer-mounted water treatment equipment
Demineralized Water Storage Tank	1	250~~0~~,000 gal	
Condensate Pump	~~2~~3	~~1~~2300 gpm	~~1 spare per condenser~~3 @ 50%
~~Circulating Water Pumps~~	~~3~~	~~60,000 gpm~~	
Condensate Polisher	1	3500 gpm	Powdered resin polisher
~~Cooling Tower Bank~~Air	1		~~Ten~~Thirty Six-celled ~~mechanical draft design~~ACC

Equipment/System	Quantity Plant	Size/Capacity*	Remarks
Cooled Condenser (ACC)			
~~Fire Water Pump Skid~~	~~1~~	~~3,000 gpm~~	
Fire Water Pumps	2	2,500 gpm	2 @ 100%
Auxiliary Cooling Water Pumps	2	~~75~~8,000 gpm	2 @ 100%
Plant Air Compressor Dryers	2	~~75~~500 cfm	2 @ 100%
Main Unit Auxiliary~~Step-up~~ Transformers	2	18-4.16/4.16 kV H: 27/36/45 MVA, X,Y:13.5/18/22.5MVA,ONAN/ONAF/ONAF~~18/20 kV~~	To MV switchgear~~electrical grid~~

Public Health

With the elimination of the wet cooling tower and the associated cooling tower drift eliminators, staff proposes the deletion of Condition of Certification PUBLIC HEALTH-1.

~~PUBLIC HEALTH-1~~ ~~The project owner shall perform a visual inspection of the cooling tower drift eliminators once per calendar year, and repair or replace any drift eliminator components which are broken or missing. Prior to initial operation of the project, the project owner shall have the cooling tower vendor's field representative inspect the cooling tower drift eliminator and certify that the installation was performed in a satisfactory manner. The CPM may, in years 5 and 15 of the project operation, require the project owner to perform a source test of the PM10 emissions rate from the cooling tower to verify continued compliance with the vendor guaranteed drift rate.~~

~~Verification:~~ ~~The project owner shall include the results of the annual inspection of the cooling tower drift eliminators and a description of any repairs performed in the next required quarterly compliance report. The initial compliance report w2ill include a copy of the cooling tower vendor's field representative's inspection report of the drift eliminator installation. If the CPM requires a source test as specified in Public Helath-1, the project owner shall submit to the CPM for approval a detailed source test procedure 60 days prior to the test. The project owner shall incorporate the CPM<'s comments, conduct testing, and submit test results to the CPM within 60 days following the tests~~.

Noise

Staff proposes changing Condition of Certification NOISE-6 to clarify the locations of noise monitoring and provide staff flexibility in locating the monitoring locations to reflect the current nature of the area. In addition, technical staff has reviewed the applicant's request to change the increase from ambient background noise levels from 3 dBA to 5 dBA, and proposes approval of this change as it will not cause a significant unmitigated increase in noise.

NOISE-6 ~~Prior to initiating construction, the project owner shall conduct a 25-hour community noise survey at the closest noise sensitive receptor (applicant's OML5 location), and shall conduct short-term noise measurements during daytime, evening and nighttime hours at locations OML6 and OML7.~~

The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the project will not cause resultant noise levels to exceed the ambient background noise level (L_{90}) at ~~residential receivers~~ OML5 (64 dBA), OML6 (64 dBA) and OML7 (62

dBA) (results of July 2001 noise monitoring by Black and Veatch) by more than ~~3~~ 5 dBA.

Within 30 days of the project first achieving a sustained output of 90 ~~80~~ percent or greater of rated capacity, the project owner shall conduct 25-hour community noise survey ~~short-term survey noise measurements~~ at OML5, OML6 and OML7. ~~Based upon the survey noise measurements, the applicant shall conduct an additional 25-hour community noise survey at the site which experiences the highest project-related noise levels.~~ The measurement of power plant noise for purposes of demonstrating compliance with this Condition of Certification may alternatively be made at a location, acceptable to the CPM and the applicant, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the nearest residence. However, notwithstanding the use of this alternative method for determining the noise level, the character of the plant noise shall be evaluated at OML5, OML6 and OML7 to determine the presence of pure tones or other dominant sources of plant noise. ~~The survey during power plant operations shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been introduced.~~ No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

If the results from the ~~two~~ noise surveys ~~(pre-construction vs. operations)~~ indicate that the background noise level (L_{90}) ~~at~~ attributable to the project ~~the most affected receptor has~~ increased by more than ~~3~~ 5 dBA for the average nighttime (10:00 p.m. - 7:00 a.m.) L_{90} during the 25-hour period, additional mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

Verification: Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the Contra Costa County Community Development Department, to the City of Antioch, and to the CPM. Included in the report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 15 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

Allowable Noise Levels at residential receptors (dBA)	
Location	**Cumulative Noise Level**

OML5	**69**
OML6	**69**
OML7	**67**

Transmission Safety Engineering

With the change in ownership approved by the Energy Commission on January 3, 2007 (Order No. 07-0103-9), PG&E became the sole owner of the GGS project. As a public utility owned generation project, GGS is exempt from compliance with the NEC, and staff proposes deleting the reference in Condition of Certification TSE-4.

TSE-4 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction and any subsequent CPM approved changes thereto, to ensure conformance with the CPUC General Order 95; Title 8, California Code of Regulations; Article 35, 36 and 37 of the "high Voltage Electric Safety Orders"; ~~the NEC~~; PG&E Interconnection Handbook; CPUC Rule 21 and related industry standards. In case of non-conformance, the project owner shall inform the CPM in writing within 10 days of discovery such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM:

1. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with the CPUC General Order 95; Title 8, California Code of Regulations Articles 35, 36 and 37 of the "high Voltage Electric Safety Orders"; ~~the NEC~~; PG&E Interconnection Handbook; CPUC Rule 21 and related industry standards, and these conditions shall be concurrently provided.
2. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge.
3. A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in responsible charge.

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

As mandated by Title 20, section 1769(a)(3) of the California Code of Regulations, the Energy Commission may only approve project modifications if specific findings are met. Following staff's review of the proposed amendment, Energy Commission staff recommends approval based on the following findings:

A. There will be no new or additional unmitigated significant environmental impacts associated with the proposed changes.

B. Adherence to the proposed conditions and stipulations will ensure the facility's compliance with all applicable LORS.

C. The facility design changes will be beneficial to the project owner, PG&E, by allowing for operation of the facility without use of San Joaquin River water.

D. There has been a substantial change in circumstances since the Commission certification justifying the elimination of San Joaquin River water for cooling that was not contemplated during the certification process.

REFERENCES

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COA 2005 – City of Antioch. Urban Water Management Plan Update, Draft Report. December 2005.

COA 2007a – City of Antioch. Letter from Joseph G. Brand, PE, Community Development Director, to Pacific Gas & Electric Company confirming City Council's authorization for potable water to the Gateway Generating Station. April 30, 2007.

COA 2007b – City of Antioch. Letter from Joseph G. Brand, PE, City Engineer, to Mr. Thomas Allen, Project Manager, Pacific Gas & Electric Company re:City of Antioch Commitment of Water Capacity for and Service to Proposed Gateway Generating System, Antioch, California. June 12, 2007.

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CEC 2001b – California Energy Commission. Commission Final Decision for Contra Costa Power Plant Unit 8, (00-AFC-01). May 30, 2001.

CVRWQCB 2000 – Central Valley Regional Water Quality Control Board. Order NO. 5-00-120, Contra Costa County Clean Water Programs, Contra Costa County. 2000.

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DDSD 2003 – Delta Diablo Sanitation District. NPDES Permit NO.CA0038547 Waste Discharge Requirements for Delta Diablo Sanitation District, Antioch, Contra Costa County. December 3, 2003.

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PG&E 2007a – Pacific Gas & Electric Company. Letter to Gary Darling, General Manager, Delta Diablo Sanitation District re:PG&E Review of RMC Report. January 2, 2007.

PG&E 2007b – Pacific Gas & Electric Company. Responses to Staff Data Requests 1-8. February 13, 2007.

PG&E 2007c– Pacific Gas & Electric Company. Transmittal Letter from H. Thomas Allen, Project Manager to CVRWQCB for the discharge of construction dewatering liquids. April 10, 2007.

PG&E 2007d– Pacific Gas & Electric Company. Revised Water Balances to PG&E's License Petition Amendment (00-AFC-1C). April 18, 2007.

RMC 2006a – RMC Water and Environment. Memorandum to DDSD and PG&E re: Evaluation of Dry and Wet Cooling Systems at the Proposed PG&E CC8 Plant. November 2006