MARSH LANDING GENERATING STATION

Commission Decision

CALIFORNIA
ENERGY COMMISSION
Arnold Schwarzenegger, Governor

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CALIFORNIA
ENERGY COMMISSION

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http://www.energy.ca.gov/sitingcases/marshlanding/index.html

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DISCLAIMER

This report was prepared by the California Energy Commission Marsh Landing Generating Station AFC Committee as part of the Marsh Landing Generating Station, Docket No. 08-AFC-3. The views and recommendations contained in this document are not official policy of the Energy Commission until the report is adopted at an Energy Commission Business Meeting.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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Application for Certification for the *MIRANT MARSH LANDING GENERATING STATION PROJECT*	**Docket No. 08-AFC-3** **Order No. 10-0825-03**

COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the ***Marsh Landing Generating Station Project***. It incorporates the Presiding Member's Proposed Decision (PMPD) in the above-captioned matter and the Committee Errata. The Commission Decision is based upon the evidentiary record of these proceedings and considers the comments received at the August 25, 2010, business meeting. The text of the attached Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and Conditions imposed.

This **ORDER** adopts by reference the text, Conditions of Certification, Compliance Verifications, and Appendices contained in the Commission Decision. It also adopts specific requirements contained in the Commission Decision which ensure that the proposed facility will be designed, sited, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

FINDINGS

The Commission hereby adopts the following findings in addition to those contained in the accompanying text:

1. The ***Marsh Landing Generating Station Project*** will provide a degree of economic benefits and electricity reliability to the local area.

2. The Conditions of Certification contained in the accompanying text, if implemented by the project owner, ensure that the project will be designed, sited, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards.

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative adverse environmental impacts.

4. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.

5. The project is subject to Fish and Game Code section 711.4 and the project owner must therefore pay an eight hundred fifty dollar ($850) fee to the California Department of Fish and Game.

6. Construction and operation of the project, as mitigated, will not create any significant environmental impacts. No feasible alternatives to the project, as described during these proceedings, exist which would reduce or eliminate any significant environmental impacts of the mitigated project.

7. The evidence of record does not establish the existence of any environmentally superior alternative site.

8. The evidence of record establishes that an environmental justice screening analysis was conducted and that the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.

9. The Decision contains a discussion of the public benefits of the project as required by Public Resources Code section 25523(h).

10. The Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.

11. The proceedings leading to this Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an Application for Certification and thereby meet the requirements of Public Resources Code sections 21000 et seq. and 25500 et seq.

ORDER

Therefore, the Commission **ORDERS** the following:

1. The Application for Certification of the ***Marsh Landing Generating Station Project*** as described in this Decision is hereby approved and a certificate to construct and operate the project is hereby granted.

2. The approval of the Application for Certification is subject to the timely performance of the Conditions of Certification and Compliance Verifications enumerated in the accompanying text and Appendices. The Conditions and Compliance Verifications are integrated with this Decision and are not severable therefrom. While the project owner may delegate the performance of a Condition or Verification, the duty to ensure adequate performance of a Condition or Verification may not be delegated.

3. This Decision is adopted, issued, effective, and final on August 25, 2010.

4. Reconsideration of this Decision is governed by Public Resources Code, section 25530.

5. Judicial review of this Decision is governed by Public Resources Code, section 25531.

6. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures as part of this Decision in order to implement the compliance monitoring program required by Public Resources Code section 25532. All conditions in this Decision take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.

7. This Decision licenses the project owner to commence construction on the project within five years of this Decision date. Subject to the provisions of California Code of Regulations, title 20, section 1720.3, this license expires by operation of law when the project's start-of-construction deadline passes with no construction.

8. The project owner shall provide the Executive Director a check in the amount of eight hundred fifty dollars ($850), payable to the California Department of Fish and Game.

9. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents, including the Department of Fish and Game fee, as provided by Public Resources Code section 25537, California Code of Regulations, title 20, section 1768, and Fish and Game Code section 711.4.

10. We order that the Application for Certification docket file for this proceeding be closed effective the date of this Decision, with the exception that the docket file shall remain open for 30 additional days solely to receive material related to a petition for reconsideration of the Decision.

Dated: August 25, 2010, at Sacramento, California.

KAREN DOUGLAS
Chair

JAMES D. BOYD
Vice Chair

JEFFREY D. BYRON
Commissioner

ANTHONY EGGERT
Commissioner

ROBERT B. WEISENMILLER
Commissioner

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Attachments: Figure 1-1
Figure 1-2
Figure 1-3
Figure 1-4
Figure 1-5

Appendix A - Revised Staff Assessment dated June 10, 2010

Marsh Landing Generating Station
Docket 08-AFC-3

Presiding Member's Proposed Decision

INTRODUCTION

On May 30, 2008, Mirant Marsh Landing, LLC (Mirant Marsh Landing) filed its Application for Certification (AFC) seeking a license from the California Energy Commission (Energy Commission) for the Marsh Landing Generating Station (MLGS, also referred to herein as the Marsh Landing Project). (Exhibits 1, 7.) On September 16, 2009, Mirant Marsh Landing filed an amendment to the AFC to reflect refinements to the project design. (Exhibit 20.) On April 26, 2010, Staff of the Energy Commission (Staff) released a Staff Assessment that presented Staff's analysis regarding potential impacts associated with the Marsh Landing Project and its compliance with applicable laws, ordinances, regulations and standards (LORS), with Staff's conclusions and recommended mitigation measures. Following a 30-day public comment period, a public workshop, and consideration of all comments, Staff edited and modified its Staff Assessment to incorporate corrections and modifications that were discussed at the workshop and proposed in written comments. On June 10, 2010, Staff released a complete Revised Staff Assessment that reflects those edits and modifications and contains Staff's analysis of comments received during the comment period. (Exhibit 300.)

There are no issues in dispute among the parties to this proceeding. In written testimony filed on June 16, 2010, Mirant Marsh Landing requested one change to Staff's proposed Condition of Certification **SOIL & WATER 6** and one correction to the verification for Staff's proposed Condition of Certification **SOIL & WATER 4**. (Exhibit 42, pp. 42-46.) Mirant Marsh Landing and Staff are in agreement regarding all Conditions of Certification in the Revised Staff Assessment.

California Unions for Reliable Energy (CURE) is the only party who intervened in this proceeding by the deadline established by the Commission's regulations and the Committee's May 26, 2010 Notice of Prehearing Conference and Evidentiary Hearing. CURE has raised no objection to the conclusions presented in the Revised Staff Assessment or to any of Staff's recommended Conditions of Certification.

Mirant Marsh Landing advised the Committee of contractual deadlines for the MLGS and requested a final Energy Commission decision on the AFC by the end of August 2010. (Exhibits 35, 42.) Mirant Marsh Landing explained that Pacific Gas and Electric Company (PG&E) selected the MLGS as a winning project in its 2008 long-term

request for offer process. (*Id.*) PG&E and Mirant Marsh Landing have executed a long-term power purchase agreement that provides for PG&E to purchase the output of the MLGS and specifies milestones for project construction and the initial commercial operation date. *(Id.)* To meet those contractual milestones, Mirant Marsh Landing has finalized other commercial arrangements necessary to finance and build the MLGS, including a turbine supply contract and an engineering, procurement and construction contract. (*Id.*) With these commitments in place, construction of the Marsh Landing Project is scheduled to commence as soon as late 2010 and Mirant Marsh Landing is prepared to release its vendors and counterparties to start their work in the Fall of 2010. (*Id*.)

We have reviewed the Revised Staff Assessment and other evidence in the record for this proceeding. Staff analyzed potential impacts of construction and operation of the Marsh Landing Project and evaluated compliance with applicable LORS in 19 technical and resource areas. (Exhibit 300, p. 1-4 – 1-5.) Based on its analysis, Staff concluded that, with the mitigation measures included in Staff's proposed Conditions of Certification, the Marsh Landing Project will comply with all applicable LORS and will not result in any significant direct, indirect, or cumulative adverse impacts to the environment or in any of the technical areas considered in the Energy Commission's licensing process.

(*Id*., p. 1-5.) Staff's analysis was consistent with the CEQA Guidelines, which define "cumulative impacts" as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, §15355.) Staff also considered the potential for the Marsh Landing Project to result in a disproportionate significant adverse impact on environmental justice communities and concluded that no such disproportionate impacts will occur. (Exhibit 300, p. 1-4.) Finally, Staff confirmed that construction and operation of the Marsh Landing Project will result in a number of noteworthy public benefits, which are identified throughout the Revised Staff Assessment and summarized in the Executive Summary. *(Id.,* pp. 1-6 – 1-7.)

We conclude that the Revised Staff Assessment provides a thorough analysis of all potential environmental impacts associated with the Marsh Landing Project and adequately evaluates compliance with applicable LORS and air quality and public health standards. Because there are no disputed issues among the parties in this proceeding and no party disagrees with Staff's analysis or conclusions in the Revised Staff Assessment, we are adopting Staff's analysis, supplemented by other evidence of record, as the basis for our findings and conclusions in this Decision. The Revised Staff Assessment is attached to and referenced throughout this Decision. This approach has

allowed the Energy Commission to issue a more abbreviated final Decision than is necessary in licensing proceedings that present difficult or contested issues.

We conclude that the Marsh Landing Project complies with all applicable laws, ordinances, regulations, and standards (LORS) and, with the mitigation measures reflected in the Conditions of Certification that we adopt in this Decision, will not have any significant direct, indirect or cumulative adverse impacts on the environment or in any of the resource or technical areas addressed below. Our findings and conclusions for the Marsh Landing Project are set forth below. Below we adopt the Conditions of Certification for the Marsh Landing Project that are recommended by Staff and specified in the Revised Staff Assessment, with the two changes requested by Mirant Marsh Landing in its written testimony. (Exhibits 300, 42.)

A day or two before we adopted this Decision we received letters commenting on the PMPD from two sister agencies and others. To the extent those comments present facts not previously contained in the record, they are improper. (See Cal. Code Regs., tit. 20, §§ 1751, subd. (a), 1754, subd. (b).) Nevertheless, in order to provide the fullest possible explanation of our determinations to the public, some of the discussion here deals with those matters.

I. PROJECT PURPOSE AND DESCRIPTION

The Revised Staff Assessment contains a project description for the Marsh Landing Project that Mirant Marsh Landing has confirmed is accurate. Mirant Marsh Landing also submitted a project description with its written testimony. (Exhibit 42(b).) Below is a complete project description that is supported by the evidence in this proceeding.

Project Overview

Mirant Marsh Landing filed its AFC for the Marsh Landing Project on May 30, 2008. On September 16, 2009, Mirant Marsh Landing filed an amendment to the AFC to reflect refinements to the project's design. As described in the amendment, the MLGS will be a nominal 760-megawatt (MW) electricity generating facility consisting of four simple cycle natural gas-fired combustion turbines. The MLGS will be a peaking facility and will be constructed, owned, and operated by Mirant Marsh Landing, an indirect, wholly owned subsidiary of Mirant Corporation.

The four simple-cycle unit configuration is the project that was selected by PG&E as a winning project in its most recent all-source competitive solicitation. PG&E and Mirant Marsh Landing have executed a long-term PPA that provides for PG&E to purchase the output of the MLGS. [The California Public Utilities Commission (CPUC) approved the PPA on July 29, 2010 in CPUC Decision 10-07-045.]

The MLGS has been designed to meet PG&E's identified needs for dispatchable and operationally flexible electricity generating resources. The MLGS will be capable of operating at a maximum capacity factor of 20 percent, which is a relatively high annual capacity factor for a peaking facility. Each of the four MLGS turbines will be capable of starting up and reaching full load in approximately 12 minutes and the MLGS will be capable of reaching 80 percent of full load in only 10 minutes. With this fast start and rapid ramping capability, MLGS will be able to provide approximately 600 MW of non-spinning reserves to the California Independent System Operator (CAISO). Non-spinning reserves are an ancillary service that the CAISO uses to integrate and backup intermittent renewable generation, among other purposes. MLGS also will have very low minimum operating times, which means that it can be started and ramped up quickly as renewable deliveries decline, operated for short periods of time, and then shut down to accommodate increased renewable generation as it becomes available. This allows MLGS to be operated to supply energy only when and for the time period needed. With these capabilities, the MLGS can be operated to maximize the system's use of renewable generation, which will help reduce system wide greenhouse gas emissions (GHG) emissions, as addressed in other portions of this Decision.

Project Location

The MLGS project site is located in unincorporated Contra Costa County, California, approximately one-tenth of a mile from the current City of Antioch limits. The City of Antioch intends to annex the project site and adjacent land in 2010. The general location of the project site is shown on Figure 1-1.

The MLGS project site is adjacent to the site of the existing Contra Costa Power Plant (CCPP), an older facility that is owned and operated by Mirant Delta, LLC (Mirant Delta). Mirant Delta is also an indirect wholly owned subsidiary of Mirant Corporation. Mirant Delta has announced that it will retire the remaining operating units at the CCPP (subject to regulatory approval) after the end of the day on April 30, 2013. The proposed MLGS will be an independent, stand-alone facility from the CCPP.

As shown on Figure 1-2 attached to this Decision, the MLGS site will occupy approximately 27 acres on the western portion of what is currently the CCPP site, generally within the footprint of the area occupied by five #6 fuel oil tanks and an area to the east of the location of the tanks. Mirant Delta is currently cleaning and removing the tanks and will complete this work before conveying the project site to Mirant Marsh Landing. The approximately 27-acre MLGS parcel will be created by subdividing the existing single parcel that constitutes the site of the CCPP. Mirant Delta has filed an application for subdivision with Contra Costa County and that process is pending. Mirant Delta will convey the project site to Mirant Marsh Landing via lease or sale, depending on when the subdivision process is complete.

The MLGS site is bordered on the north, east and south by the CCPP site and the PG&E switchyard, and on the west by a vacant industrial property. The nearest residential neighborhood is approximately 2,000 feet southwest of the site boundary. PG&E's Gateway Generating Station (GGS) is located immediately east of the CCPP site.

Project Objectives

Mirant Marsh Landing and Staff identified several basic objectives for the development of an electricity generating facility at the project site. These objectives include:

- Installing new quick start and intra-day ramping capability within a local reliability area to serve peak demand and potentially displace less efficient and less flexible natural gas-fired electric generating facilities;
- Meeting electricity peak demand and backing up and providing support for the integration of intermittent renewable resources that are being

constructed to advance the State's Renewable Portfolio Standard (RPS) and greenhouse gas (GHG) reduction goals; and

- Utilizing a brownfield site adjacent to an existing power plant site to construct new generating capacity without the need to disturb a greenfield site or construct significant new lateral facilities.

Project Construction

Construction and startup of the MLGS is expected to begin in late 2010 and to be completed within approximately 27 months. The MLGS is scheduled to commence commercial operation in Summer 2013.

Construction of the MLGS is estimated to cost approximately $550 million dollars. The construction work-force will peak at approximately 272 workers in the 22nd month of construction and average approximately 120 workers over the construction period.

Mirant Delta acquired the project site from PG&E. As the former owner, PG&E retained responsibility for certain remediation activities that may be required to address certain substances at the project site. PG&E is currently working with the California Environmental Protection Agency Department of Toxic Substances Control (DTSC) to achieve regulatory closure for the project site. As such, supplemental investigations are ongoing to delineate the extent of constituents of concern that were identified in previous investigations to support a potential remedial plan for the project site, as necessary. All DTSC-ordered remedial work at the project site will be required to be completed prior to the commencement of soil excavation or grading in those affected areas.

Approximately 14 acres within the existing CCPP site (but outside the MLGS project site) will be used for construction laydown, offices and parking (See Figure 1-2). Primary access to the project site during construction will be from State Route (SR) 4 and SR 160 via Wilbur Avenue. Existing entrances and access roads within the CCPP will be used.

The Staff analyzed the worst-case impacts of the site remediation that could be required to prepare the site for the MLGS. That analysis assessed the potential environmental impacts of removing and disposing of up to 11,000 cubic yards of contaminated soil using standard, feasible removal and protective techniques such as those required by the law implemented by DTSC (see Health & Saf. Code, ch. 6.5). Based on that analysis, we conclude that site remediation of up to that magnitude would have no significant impacts in the areas of air emissions (see Revised Staff Assessment, Appendix A to this Decision ("RSA") pp. 4.1 – 15-16), greenhouse gases (see RSA p. 4.1 – 73), traffic & transportation (see RSA p. 4.10 – 4), waste management (see RSA

pp. 4.13 – 5, 17-18, 26), or worker safety (see RSA pp. 4.14 – 14-15). Those are the only environmental resources that could suffer significant impacts as a result of the site remediation necessary for the MLGS. In fact, at the hearing at which we adopted this Decision it was stated, without contradiction, that the actual site remediation would likely require the removal of only 250 – 300 cubic yards of soil, obviously a much lower amount that the removal of 11,000 cubic yards that would still have no adverse impacts through the use of typical remediation practices.

Facility Description

The MLGS will consist of new natural-gas–fired generation facilities and ancillary systems. Figure 1-3 depicts the existing site and vicinity. A visual simulation of the project site after construction of the MLGS is shown on Figure 1-4. Major elements of the MLGS are shown on Figure 1-5 and are summarized below:

- Four simple cycle units consisting of four Siemens 5000F natural gas-fired combustion turbine generators (CTGs) equipped with ultra low NOX combustors and inlet air evaporative cooler;
- Four approximately 165 foot-tall stacks each discharging the exhaust from one CTG and equipped with continuous emissions monitoring systems;
- Natural gas compressors;
- Two fuel gas/dew point heaters;
- One 20,000 gallon aqueous ammonia storage tank, associated ammonia unloading station, in-plant distribution piping, and ammonia vaporizer;
- Water treatment system building, trailers and associated water storage tanks;
- A control building for housing the MLGS plant distributed control systems and electrical equipment and warehouse for storage of equipment; and
- An underground fire loop that will be supplied from the existing CCPP fire system.

The Marsh Landing Project also includes:

- A new well system in the southern portion of the CCPP site that includes two new wells and a pipeline to supply brackish groundwater to the MLGS for process water needs, if feasible;
- Connection to the existing potable water line on the CCPP site;
- A wastewater pipeline to convey process and sanitary wastewater to the City of Antioch's sewer main on Wilbur Avenue;
- A new MLGS metering station on the CCPP site and a natural gas pipeline to connect the MLGS with PG&E's existing natural gas transmission line

known as Line 400, located approximately 2,100 feet east of the MLGS metering station; and

- Two single circuit 230 kilovolt (kV) transmission lines to interconnect the four generators with the existing PG&E switchyard that is adjacent to the MLGS project site.

Project Operations

The MLGS will consist of four Siemens 5000F natural gas combustion turbine generators (CTGs) operating in simple-cycle mode. The MLGS will be a nominal 760 MW facility (at 75 degrees Fahrenheit [°F] temperature and 54 percent relative humidity). The MLGS is designed to provide peaking power and will operate at a maximum 20 percent annual capacity factor. The MLGS will be capable of producing 719 MW during peak July conditions (103.9 °F temperature and 31 percent relative humidity). The actual output of the MLGS will vary in response to ambient weather conditions. The overall annual availability of the MLGS as measured by equivalent availability factor (EAF) is expected to be approximately 94 to 98 percent.

An ultra low NOx combustor system will be used to control the NOx concentration exiting each CTG. As an additional post-combustion NOx control system, a selective catalytic reduction (SCR) system will be installed downstream of the CTG to further reduce NOx emissions. The SCR system will inject ammonia into the exhaust gas stream upstream of a catalyst bed to reduce NOx to inert nitrogen and water. Dilution air fans will temper flue gas temperatures to meet SCR catalyst temperature requirements. An oxidation catalyst system will also be incorporated into the air quality control system to control emissions of carbon monoxide and volatile organic compounds.

The MLGS will employ approximately 16 full-time employees once operational.

Water Supply

The MLGS will use a maximum of 50 acre-feet per year (AFY) of water to serve process water requirements. Process water requirements consist of evaporative cooler makeup, service water and combustion turbine washes. The MLGS will not include a steam cycle or utilize water for purposes of rejecting waste heat produced during power plant processes to the atmosphere. This avoids the need for the large water supply required by power generation projects that use water to reject waste heat from a steam cycle or other power plant processes.

Mirant Marsh Landing has proposed two potential sources of water for process uses. One source is brackish groundwater supplied by two wells located within the existing CCPP site. Each well will be designed to provide full demand for 100 percent

redundancy. A new 6-inch diameter 2,200-foot long pipeline will be constructed from the wells to the MLGS raw water storage tank generally along an existing CCPP access road. The groundwater is considered brackish and will undergo treatment for use at the MLGS.

As an alternative primary water supply, the City of Antioch has offered to supply water to the MLGS for all needs, including process uses. The City of Antioch has stated that it has adequate supplies of water to serve the MLGS's need for 50 AFY of process water. The City of Antioch and Mirant Marsh Landing have asked that the use of City of Antioch water be approved as an alternative, primary source of water that could be utilized for all project purposes in lieu of onsite groundwater.

The small amount of potable water needed for domestic and sanitary water will be supplied by the City of Antioch via a connection to an existing water line on the CCPP site.

Wastewater

Process wastewater will be stored onsite as necessary prior to discharge to the City of Antioch sewer line that is located along Wilbur Avenue. All project wastewater will be conveyed to this sewer line via a new 6-inch diameter, 3,000 foot-long pipeline that will be installed mostly within the CCPP site, with approximately 500 feet installed along Wilbur Avenue. Sanitary wastewater will be combined with the process wastewater and discharged to the sewer line. Process and sanitary wastewaters ultimately will discharge to the Delta Diablo Sanitation District (DDSD) wastewater system.

Fuel Supply

The MLGS CTGs will burn pipeline quality natural gas delivered by PG&E via PG&E's interstate natural gas transmission Line 400, which runs along the eastern boundary of the GGS property. Natural gas will be provided to the MLGS via a new pipeline that is approximately 2,100 feet long. The pipeline will connect to the main transmission line and run across the CCPP and GGS properties. The gas metering station will be located within the CCPP project site. The 12-inch-diameter gas pipeline extension from Line 400 to the MLGS gas metering station, and the gas metering station, will be owned, constructed, and maintained by PG&E in its capacity as the local gas utility company. The natural gas pipeline downstream of the metering station, the natural gas compression station, and the natural gas conditioning station will be owned, constructed, and maintained by Mirant Marsh Landing.

Electric Transmission

The MLGS project site is located adjacent to PG&E's switchyard. The four CTGs will generate power at 16.5 kilovolts (kV). The voltage at each generator will be stepped up by a dedicated step-up transformer to 230 kV. The four transformers will connect to two single-circuit 230 kV transmission lines that will intertie directly into the adjacent PG&E switchyard to deliver the project's electrical output to the transmission grid. The proposed lines will be supported on six steel pole structures that will be 100 feet tall and will utilize standard low-corona aluminum, steel-reinforced cables. The transmission line interconnections will be approximately 900 feet in total length.

The owner of the CCPP, Mirant Delta, has entered into an agreement with PG&E to retire the remaining units at the CCPP after the end of the day on April 30, 2013, subject to regulatory approval. The MLGS will utilize the capacity on the transmission system that is currently allocated to the CCPP. This is reflected in the Revised Large Generator Interconnection Process Request filed by Mirant Marsh Landing in September 2009. By taking over the transmission system capacity currently allocated to the CCPP, the MLGS only requires a net incremental capacity of 100 MW on the electric transmission system.

The CAISO has prepared the Phase II Interconnection Study for the MLGS (Phase II Study). The Phase II Study analyzes the impact of interconnecting all six projects remaining in the so-called Transition Cluster, which includes the MLGS. As noted above, with the retirement of the remaining CCPP units, the net increase in capacity associated with the MLGS will be only 100 MW. As such, the MLGS net increase in capacity is only 8.6 percent of the total 1,159 MW of new capacity being analyzed in the Transition Cluster.

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Ownership and Operation. Mirant Marsh Landing, LLC will own and operate the MLGS.
2. MLGS. The Marsh Landing Project will involve the construction and operation of a nominally rated 760 MW natural gas-fired simple cycle electrical generating facility on approximately 27 acres of land in Contra Costa County near the City of Antioch.
3. Electricity Transmission Lines. The Marsh Landing Project includes the construction of two single-circuit 230 kV electric transmission lines that will intertie directly into the existing PG&E switchyard to deliver electrical

output from the MLGS to the transmission system. The transmission lines will be supported on six steel pole structures that will be 100 feet tall and will utilize standard low-corona aluminum, steel-reinforced cables. The transmission lines will be approximately 900 feet in total length.

4. Natural Gas Pipeline. The Marsh Landing Project includes the construction of a new 2,100 foot long natural gas pipeline that will connect the MLGS with the PG&E interstate natural gas transmission system.

5. Water Supply. The MLGS will use up to 50 acre-feet per year of water for process uses. The water supply will be either brackish groundwater supplied by two new wells to be installed on the adjacent CCPP site, or water supplied by the City of Antioch. Pipelines will be installed at the MLGS and CCPP sites to deliver water to the MLGS. The selection of a project water supply is addressed further in the Soil and Water Resources section of this Decision.

6. Wastewater. Wastewater from the MLGS will discharge to the DDSD wastewater treatment system via a new wastewater discharge pipeline that will connect with the existing City of Antioch sewer system.

7. Site Remediation. The MLGS requires site remediation, which will be carried out under the direction of DTSC. Site remediation involving the removal of up to 11,000 cubic yards of contaminated soil, and using standard remediation techniques under DTSC's direction, would not cause any significant impacts. Site remediation for MLGS is likely to require removal of only 250 – 300 cubic yards of soil, and will therefore cause no significant adverse environmental impacts.

8. Adequacy of Record. The Marsh Landing Project and its objectives are adequately described by the Revised Staff Assessment, Mirant Marsh Landing's written testimony, and other documents in the record.

CONCLUSIONS OF LAW

1. The Marsh Landing Project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act (CEQA).

2. No Conditions of Certification are required for this topic area.

II. PROJECT ALTERNATIVES

The CEQA Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives that represent the basic objectives of a proposed power plant project, but would avoid or substantially lessen potentially significant environmental impacts. (Cal. Code Regs., tit. 14, §§ 15126.6 (c) and (e); see also, Cal. Code Regs., tit. 20, § 1765.) Public Resources Code section 25540.6(b) requires an Applicant seeking an Energy Commission license for a power plant project that is exempt from the Energy Commission's notice of intention process to include information on the site selection criteria, alternative sites, and the reasons for choosing the proposed site. Section 1765 of the Energy Commission's regulations requires the parties to present evidence on alternative sites and facilities. An alternative site analysis is not required, however, when a natural gas-fired thermal power plant project is (1) proposed for development at an existing industrial site, and (2) "the project has a strong relationship to the existing industrial site and therefore it is reasonable not to analyze alternative sites for the project." [Pub. Res. Code § 25540.6(b).]

The range of alternatives, including the "no project" alternative, is governed by the "rule of reason" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f).] Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project." (*Id*.)

Mirant Marsh Landing provided an alternatives analysis in the AFC describing the site selection process and project configuration in light of project objectives (Exhibits 1(h), 7(h). Staff conducted its own alternatives analysis that is presented in the Revised Staff Assessment. (Exhibit 300, pp. 6-1 through 6-13.)

Mirant Marsh Landing further described the project objectives and the basis for its selection of the current project design in its written testimony, explaining that the simple cycle configuration is the project that PG&E selected as a winning project in its 2008 all-source competitive solicitation (Exhibit 42, pp. 3-4). As stated above, Mirant Marsh Landing and PG&E have executed a long-term power purchase agreement for the MLGS that provides for PG&E to purchase the output of the MLGS. (*Id*.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. In presenting the results of its alternatives analysis, Staff stated that its objectives were to (1) describe the basic objectives of the Marsh Landing Project, (2) identify any potential significant impacts of the Marsh Landing Project, (3) identify and evaluate alternative locations or sites to determine whether the environmental impacts of the alternatives are the same, better, or worse than the Marsh Landing Project, (4) identify and evaluate technology alternatives to the Marsh Landing Project which would mitigate impacts, and (5) evaluate the impacts of not constructing the Marsh Landing Project to determine whether the "no project" alternative is superior to the Marsh Landing Project as proposed. (Exhibit 300, p. 6-4.) We find that Staff's analysis of alternatives is adequate and that it supports our Decision.

2. No Significant Adverse Impacts. Staff references the entirety of its analysis of the Marsh Landing Project as described in the Revised Staff Assessment and explains that Staff did not identify any significant adverse impacts that will not be adequately mitigated. (Exhibit 300, pp. 6-2, 6-5, 6-12.) As reflected in the entirety of this Decision, we agree with Staff's ultimate conclusion. We find that with the implementation of all Conditions of Certification adopted in this Decision, the construction and operation of the Marsh Landing Project will not create any significant direct, indirect, or cumulative adverse environmental impacts.

3. Existing Industrial Site. Because the Marsh Landing Project will not have any significant adverse impacts, Staff does not recommend any alternative site, generation technology, or project configuration over the Marsh Landing Project as proposed by Mirant Marsh Landing. (Exhibit 300, p. 6-2.) Staff also has confirmed that the MLGS will be located within the existing CCPP site, which is an existing industrial site, and will avoid the need for significant new transmission and natural gas transmission facilities. (*Id*., p. 6-1.) We find that the Warren-Alquist Act does not require an analysis of alternative sites in this proceeding. [Pub. Res. Code § 25540.6(b).]

4. Alternative Sites. To reduce or eliminate concerns that may be expressed by interested parties during the siting process, Staff examined five alternative project sites. Staff concluded that four of the alternative sites were not suitable due to insufficient space, the presence of sensitive biological habitats, the need for zoning changes, or the potential for other impacts (namely, greater visual presence or longer linear connections) than presented by the site proposed by Mirant Marsh Landing. (Exhibit 300, p. 6-7.) Staff concluded that these four sites did not meet the screening criteria. (*Id*.) Staff analyzed a fifth site that did not have significant disadvantages, but Staff concluded that this alternative site offered no environmental advantages over the site proposed by Mirant Marsh Landing. *(Id*.) We find that the Revised Staff Assessment contains

an adequate review of alternative project sites, and that no site alternative is capable of meeting the stated project objectives and applicable siting criteria.

5. Alternative Technologies. Staff analyzed a number of alternative technologies to the generation technology proposed by Mirant Marsh Landing. Staff considered conservation and demand management, noting that these measures are important for California's energy future, and that cost-effective energy efficiency is the resource of first choice for meeting California's energy needs. (Exhibit 300, p. 6-8.) Staff concluded, however, that with population growth and increasing demand for energy, conservation and demand management alone are not sufficient to address all of California's energy needs. (*Id*.) Staff also considered renewable generation technologies, including solar thermal, solar photovoltaic, wind, geothermal, biomass, and tidal and wave technologies. (*Id*., pp., 6-8 – 6-10.) Staff concluded that these renewable technologies do not provide quick-start-up and shut-down capabilities for meeting peak demand, whereas the MLGS will provide these capabilities. (*Id*., p. 6-8.) Power also cannot be generated at levels equivalent to the MLGS using renewable technologies at the proposed site. (*Id*.) Operational constraints at other locations limit the effectiveness of renewable technologies as alternatives to the MLGS. (*Id*.) We find that alternative fuels and technologies are not capable of meeting the Marsh Landing Project objectives.

6. Alternative Natural Gas-Fired Project Configurations. Staff considered several alternative configurations that would utilize natural gas-fired technology, including: (1) repowering the five existing CCPP units 1-5, which have been shut down and retired but are still located at the CCPP site; (2) demolishing the five existing CCPP units 1-5 and replacing them with new units in the same location; (3) replacing existing CCPP units 6-7 which are still operating and are anticipated to continue operating under existing contracts with PG&E through April 30, 2013; and (4) installing a combined cycle power plant in lieu of the four combustion turbine generators proposed for the MLGS. (Exhibit 300, p. 6-10.) Staff concluded that none of these configurations present an environmental advantage over the configuration proposed by Mirant Marsh Landing. With respect to the combined cycle configuration, Staff concluded that a combined cycle plant of comparable output would be less dispatchable and operationally flexible than the proposed MLGS. (*Id*.) Mirant Marsh Landing also has explained that the simple cycle configuration is the project selected by PG&E as a winning project in its solicitation, and reflects the project that Mirant Marsh Landing has agreed to construct pursuant to a long-term power purchase agreement with PG&E. (Exhibit 42.) We find that none of the generation alternatives to the MLGS offer a superior alternative in terms of feasibly meeting the Marsh Landing Project objectives or reducing significant potential environmental impacts.

7. No Project Alternative. Staff analyzed the "no project" alternative, which assumes that no project is constructed. Selection of this alternative would render all potential concerns about project impacts moot. Staff concluded that the no project alternative is not superior to the Marsh Landing Project because: (1) under the no project scenario, the region would not benefit from the local and efficient source of 760 MW of new peaking capacity that the MLGS will provide; (2) the local community would not benefit from the jobs that will be created in support of project construction and operation; and (3) the no project scenario could lead to increased operation of existing plants (and reliance on older technology) or development of new plants on undeveloped (greenfield) sites. (Exhibit 300, pp. 6-11 – 6-12.) We find that the "no project" alternative would not achieve the Marsh Landing Project objectives and would not be environmentally superior to the Marsh Landing Project as proposed by Mirant Marsh Landing.

8. Conclusion. We find that the Revised Staff Assessment presents an acceptable analysis of a reasonable range of site location and technology and configuration alternatives to the Marsh Landing Project as proposed. We find that there are no alternative sites, fuels, technologies, or configurations that would achieve the project objectives in a manner that would be environmentally superior to the Marsh Landing Project.

CONCLUSIONS OF LAW

1. The Marsh Landing Project's potential adverse environmental impacts will be mitigated to a level below the threshold of significance. The detailed analysis of the feasibility of alternatives that is discussed in the record is not legally required.

2. The Warren-Alquist Act does not require an analysis of alternative sites because the MLGS will be located within an existing industrial site and will avoid the need for significant new transmission and natural gas transmission facilities. [Pub. Res. Code § 25540.6(b).]

3. The Revised Staff Assessment contains a sufficient analysis of alternatives and complies with the requirements of CEQA, the Warren-Alquist Act, and their respective regulations.

4. No Conditions of Certification are required for this topic area.

III. COMPLIANCE AND CLOSURE

Public Resources Code section 25532 requires the Energy Commission to establish a post-certification monitoring system for the MLGS. This requirement is designed to ensure that power plants licensed by the Energy Commission are constructed and operated in compliance with applicable laws, ordinances, regulations, standards (LORS) and the Conditions of Certification adopted in the Energy Commission's licensing Decision.

The Revised Staff Assessment specifies General Compliance Conditions of Certification and a Compliance Monitoring and Closure Plan (Compliance Plan) for the Marsh Landing Project. Staff explained that the Compliance Plan provides a means for ensuring that the Marsh Landing Project will be constructed, operated, and closed in compliance with public health and safety, environmental, and other applicable regulations, guidelines and conditions adopted or established by the Energy Commission and specified in the written licensing decision or otherwise required by law. (Exhibit 300, p. 7-1 – 7-21.) The Compliance Plan specifies the responsibilities of the project owner and the Staff Compliance Project Manager (CPM) assigned to the Marsh Landing Project. (*Id*.)

As described in the Revised Staff Assessment (*Id*., p. 7-1), the Compliance Plan:

- Sets forth the duties and responsibilities of the CPM, the project owner, delegate agencies, and others;
- Sets forth the requirements for handling confidential records and maintaining the compliance record;
- Includes procedures for settling disputes and making post-certification changes;
- Specifies requirements for periodic compliance reports and other administrative procedures to verify the compliance status of all Conditions of Certification;
- Establishes requirements for facility closure plans; and
- Specifies Conditions of Certification for each technical area containing measures designed to mitigate any and all potential adverse project impacts associated with construction, operation and closure of the Marsh Landing Project to below a level of significance. Each Condition of Certification also includes a verification provision that describes the method of assuring that the Condition of Certification is satisfied.

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Implementation. Requirements contained in the Compliance Plan and Conditions of Certification that are specified in the Revised Staff Assessment and adopted in this Decision are intended to be implemented in conjunction with one another.
2. Sufficiency. We find that the Compliance Plan set forth in the Compliance and Closure section of the Revised Staff Assessment, Exhibit 300, pp. 7-1 through 7-21, meets applicable requirements of law and Energy Commission regulations and practice.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Compliance Plan set forth in the Compliance and Closure section of the Revised Staff Assessment satisfies the requirements of Public Resources Code section 25532.
2. The Compliance Plan and Conditions of Certification adopted in this Decision ensure that the Marsh Landing Project will be designed, constructed, operated, and closed in conformance with applicable LORS.
3. We adopt the Compliance Plan and the Conditions of Certification that are specified in the Compliance and Closure section of the Revised Staff Assessment and identified as **COMPLIANCE-1** through **COMPLIANCE-14.**

IV. ENGINEERING ASSESSMENT

Staff conducted a broad engineering assessment of the Marsh Landing Project consisting of separate analyses that examined its facility design, engineering, efficiency, and reliability aspects. These analyses are described in the Revised Staff Assessment (Exhibit 300, pp. 5.1-1 – 5.1-6) and addressed the on-site power generating equipment and linear facilities that are included in the Marsh Landing Project.

A. FACILITY DESIGN

Staff's review of facility design encompassed the civil, structural, mechanical, and electrical engineering design of the Marsh Landing Project. (Exhibit 300, pp. 5.1-1.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Preliminary Design Stage. The MLGS and associated facilities are currently in the preliminary design stage.
2. Compliance with LORS. The Revised Staff Assessment identifies the LORS applicable to each engineering discipline (civil, structural, mechanical, and electrical) for the Marsh Landing Project in Facility Design Table 1. (Exhibit 300, p. 5.1-2.) Staff analyzed the Marsh Landing Project to ensure that it will be built to applicable engineering codes to protect public health and safety Staff verified that applicable engineering LORS have been identified and that the Marsh Landing Project and all ancillary facilities have been described in adequate detail. Staff evaluated the proposed engineering LORS, design criteria, and design methods presented by Mirant Marsh Landing and concluded that the design, construction, and eventual closure of the Marsh Landing Project will comply with applicable engineering LORS. We find that the Revised Staff Assessment contains sufficient information to establish that the MLGS and all associated facilities included in the Marsh Landing Project can be designed and constructed in conformity with all applicable LORS.
3. Design Review, Plan Checking, Field Inspections. Staff proposes Conditions of Certification set forth in the Facility Design section of the Revised Staff Assessment to ensure that the Marsh Landing Project is designed and constructed in accordance with applicable engineering LORS. This will be accomplished through design review, plan checking, and field inspections that will be performed by the Chief Building Official (CBO) or other Commission delegate. Staff will audit the CBO to ensure

satisfactory performance. We find that the Conditions of Certification set forth in the Facility Design section of the Revised Staff Assessment and adopted herein provide for qualified personnel to perform design review, plan checking, and field inspections of the Marsh Landing Project.

4. Sufficiency of Conditions. We find that the Conditions of Certification set forth in the Facility Design section of the Revised Staff Assessment and adopted herein are appropriate to ensure that the Marsh Landing Project is designed and constructed both in accordance with applicable LORS and in a manner that protects environmental quality as well as public health and safety.

5. Closure. The General Conditions adopted in the Compliance and Closure section of this Decision establish requirements to be followed in the event of closure of the MLGS.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Conditions of Certification adopted below ensure that the Marsh Landing Project will be designed and constructed in conformance with the applicable LORS pertinent to the engineering aspects of the Marsh Landing Project that are summarized in the Revised Staff Assessment in Facility Design Table 1.

2. We adopt the Conditions of Certification that are specified in the Facility Design section of the Revised Staff Assessment and identified as: **GEN-1** through **GEN-8**; **CIVIL-1** through **CIVIL-4**; **STRUC-1** through **STRUC-4**; **MECH-1** through **MECH-3**; and **ELEC-1**.

B. POWER PLANT EFFICIENCY

The MLGS will use substantial amounts of natural gas for its fuel. Pursuant to CEQA, the Energy Commission determines whether the consumption of natural gas will result in substantial impacts upon energy resources. (Cal. Code Regs., tit. 14, § 15126.4(a)(1), Appen. F.)

In the Revised Staff Assessment, Staff evaluated: (1) whether the MLGS would likely present any adverse impacts on energy resources; (2) whether any such adverse impacts would be significant; and (3) whether feasible mitigation measures could eliminate those adverse impacts or reduce them to a level of insignificance. (Exhibit 300, pp. 5.3-1 – 5.3-6.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. MLGS Design. As described in the Revised Staff Assessment (Exhibit 300, pp. 5.3-1 – 5.3-2), and in Mirant Marsh Landing's amendment to the AFC (Exhibit 20) and written testimony (Exhibit 42), the MLGS will provide approximately 760 MW of peaking electrical power, operate in simple cycle mode, and utilize four Siemens STG6-5000F natural gas-fired combustion turbine generators.

2. Efficiency. In the Revised Staff Assessment, Staff concluded that the MLGS will generate 760 MW of electricity at an overall project fuel efficiency of 38 percent lower heating value (LHV) at annual average ambient conditions. (Exhibit 300, p. 5.3-2.) We find that this efficiency level compares favorably with the average fuel efficiency of a typical simple cycle power plant operating at base load.

3. Natural Gas Supply. Natural gas for the MLGS will be supplied from PG&E's existing natural gas transmission system. Staff concluded that the PG&E system draws from extensive supplies originating in the Southwest and Canada, and is capable of delivering the natural gas that MLGS will require to operate. Staff determined that this natural gas supply is a reliable source of natural gas for the MLGS. (Exhibit 300, pp. 5.3-2, 5.3-3.) We find that the Marsh Landing Project will not create a substantial increase in natural gas demand.

4. Alternative Fuels and Technologies. The Revised Staff Assessment contains a comparative analysis of alternative fuel sources and generation technologies. Staff examined other fossil fuels, nuclear, biomass, hydroelectric, solar, wind, and geothermal technologies and concluded that only natural gas-burning technologies are feasible for the Marsh Landing Project in light of its objectives, location, air pollution control

requirements, and commercial availability of alternatives. (Exhibit 300, p. 5.3-4.) Staff also evaluated the technology selected by Mirant Marsh Landing and concluded that the four-train combustion turbine generator configuration is highly efficient during unit turndown because one train can be shut down, leaving others fully loaded, allowing the efficient operation of three trains instead of the operation of all four trains at a less than full-load efficiency. (*Id*., p. 5.3-3.) Staff also concluded that use of the Siemens STG6-5000F combustion turbine generator represents one of the most modern and efficient machines available. (*Id*.) Based on Staff's analysis, we find that none of the alternatives is superior to the proposed Marsh Landing Project at meeting project objectives in an efficient manner.

5. Alternative Equipment. Staff also examined alternatives to the MLGS evaporative cooling system, including a mechanical chiller, adsorption chiller and evaporative fogger, and concluded that efficiency differences between these alternatives are relatively insignificant. (*Id*., pp., 5.3-4 – 5.4-5.) We find that Mirant Marsh Landing's choice of an evaporative gas turbine inlet air cooling system will have no significant adverse energy impacts.

6. Cumulative Impacts. Staff also conducted an analysis of potential cumulative impacts associated with the Marsh Landing Project in combination with other existing and probable future projects. Staff concluded that no nearby projects have been identified that could potentially combine with the MLGS to create cumulative impacts on natural gas resources. (Exhibit 300, p. 5.3-5.) Staff determined that the PG&E natural gas supply system is adequate to supply the MLGS without adversely impacting its other customers, and that MLGS will not create indirect impacts (in the form of additional fuel consumption) that would not have occurred without the Marsh Landing Project. Staff also found that the high efficiency of the MLGS should allow it to compete favorably and replace less efficient and less flexible power generating plants. (*Id*., pp. 5.3-5; also see the **Greenhouse Gas Emissions** section of this Decision.) We find that the Marsh Landing Project will not adversely impact the cumulative amount of natural gas consumed for power generation.

7. Reliability. The Revised Staff Assessment also notes that the Marsh Landing Project is expected to increase power supply reliability in the California electricity market by meeting the state's energy needs and contributing to regional electricity reserves. (*Id*., p. 5.3-5.) We find that the Marsh Landing Project will benefit electric consumers by installing modern combustion turbine generators with a high level of operating flexibility.

8. Conclusion. Staff concluded that while the MLGS will consume substantial amounts of energy, it will do so in the most efficient manner practicable, will not create significant adverse effects on energy supplies

or resources, will not require additional sources of energy supply, and will not consume energy in a wasteful or inefficient manner. No energy standards apply to the Marsh Landing Project. (Exhibit 300, pp. 5.3-1, 5.3-5.) We find that the Marsh Landing Project will present no significant adverse impacts on energy resources.

CONCLUSIONS OF LAW

1. The Marsh Landing Project will not create any adverse effects on energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.
2. No federal, state, or local LORS apply to the efficiency of the Marsh Landing Project.
3. No Conditions of Certification are required for this topic area.

C. POWER PLANT RELIABILITY

The Energy Commission determines whether the Marsh Landing Project will be appropriately designed and sited in order to ensure safe and reliable operation. [Pub. Res. Code, § 25520(b); Cal. Code Regs., tit. 20, § 1752(c)(2).] There are no applicable LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.

Staff analyzed this issue in the Revised Staff Assessment. Staff notes that the responsibility for maintaining system reliability falls largely to control area operators such as the CAISO that purchase, dispatch, and sell electric power throughout the State. (Exhibit 300, p. 5.4-1.) To ensure adequate system reliability, Staff examined whether the Marsh Landing Project will be built and operated to the traditional level of reliability reflected in the power generation industry. Staff takes the approach that a project is acceptable if it does not degrade the reliability of the utility system to which it is connected. (*Id*., p. 5.4-2.) Staff explains that this is likely the case if a project is at least as reliable as other power plants on the system. (*Id*.) Staff's analysis covered equipment availability, plant maintainability, fuel and water availability, and power plant reliability in relation to natural hazards. (*Id.*)

FINDINGS OF FACT

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

1. Applicable LORS. No federal, state, or local LORS apply to the reliability of the Marsh Landing Project.
2. Equivalent Availability Factor. Mirant Marsh Landing predicts an equivalent availability factor of 92 percent to 98 percent for the MLGS. The availability factor of a power plant is the percentage of time it is available to generate power. Planned and unplanned outages subtract from this availability. Staff analyzed the reliability factors for the MLGS and determined that they comply with industry norms. (Exhibit 300, p. 5.4-3.) We find that the MLGS will be as reliable or more reliable as other power plants on the electricity system and will not degrade system reliability.
3. Quality Assurance/Quality Control. Staff examined equipment availability for the MLGS, including Mirant Marsh Landing's proposed quality assurance/quality control program and concluded that it is typical of the power industry. (*Id*.) Staff also proposed a number of Conditions of

Certification in the Facility Design section of the Revised Staff Assessment, which we adopt below. Those Conditions of Certification further ensure that the MLGS will be adequately reliable.

4. Plant Maintainability. Staff analyzed plant maintainability, focusing on equipment redundancy and the Applicant's proposed maintenance program. *(Id.,* p. 5.4-4 – 5.4-5.) Based on Staff's analysis, we find that the MLGS proposed equipment redundancy will be sufficient for reliable operation, and that the project will be adequately maintained to ensure an acceptable level of reliability.

5. Fuel and Water Availability. Staff considered fuel and water availability for the MLGS, and found that (a) there will be adequate natural gas supply and pipeline capacity to meet the project's needs, and (b) the two proposed sources of water for the project (brackish groundwater and City of Antioch water) represent a reliable supply of water for the project. *(Id*., p. 5.4-4; see also **Soil and Water Resources**, pp. 4.9-17 – 4.9-20.) We agree and adopt Staff's findings.

6. Natural Forces. Staff evaluated natural forces that could threaten the reliable operation of a power plant. Based on Staff's analysis, we find that there are no special concerns with the MLGS's functional reliability during seismic events or due to flooding. High winds, tsunamis (tidal waves), and seiches (waves in inland bodies of water) are not likely to present hazards for the MLGS. (*Id*., pp. 4.9-21, 5.2-8 – 5.2-12, 5.4-5.)

7. Industry Standards. Staff considered industry statistics for availability factors and other reliability data maintained by the North American Electric Reliability Corporation (NERC). (*Id*., pp. 5.4-5 – 5.4-6.) For natural gas turbine units of 50 MW or more that operate in simple cycle mode, NERC reports a typical equivalent availability factor of 91.82 percent. (*Id*., p. 5.4-6.) We find that the expectation of an annual availability factor of 92 percent to 98 percent for the MLGS is reasonable when compared with NERC figures for similar plants.

8. Overall Benefits. Staff concludes that the Marsh Landing Project will enhance power supply reliability in the Northern California electricity market by meeting the state's growing energy demand, contributing to electricity reserves in the region, and providing operating flexibility (that is, the ability to start up, shut down, turn down, and provide load following and spinning reserve). *(Id*., p. 5.4-6.) The fact that the project consists of four combustion turbine generators, configured as independent equipment trains, provides inherent reliability, as a single equipment failure cannot disable more than one train, thereby allowing the plant to continue to generate. (*Id*.) We find that the Marsh Landing Project will enhance California's power supply reliability, contribute to electricity reserves in the region, and provide operating flexibility.

CONCLUSIONS OF LAW

1. There are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation.
2. The Marsh Landing Project will be constructed and operated in accordance with the typical power industry norms for reliable electricity generation and will not degrade overall system reliability.
3. No Conditions of Certification other than those adopted in the **Facility Design** section of this Decision are required for this topic area.

D. TRANSMISSION SYSTEM ENGINEERING

In its power plant licensing process, the Energy Commission considers "any electric power line carrying electric power from a thermal power plant …to a point of junction with an interconnected transmission system." (Pub. Res. Code, § 25107.) The Energy Commission assesses the engineering and planning design of new transmission facilities associated with a power plant project to ensure compliance with applicable law.

The MLGS interconnection facilities will consist of two 230 kV overhead generator tie-lines and associated interconnection equipment to connect with the existing PG&E switchyard located adjacent to the MLGS project site. (Exhibit 42, p. 8.) In the Revised Staff Assessment, Staff analyzed these interconnection facilities and determined that they are adequate and in conformance with applicable industry standards, good utility practices, and safety and reliability LORS. (Exhibit 300, p. 5.5-9 – 5.5-10.)

The MLGS will connect with the electricity transmission network owned by PG&E and operated by the CAISO. PG&E and the CAISO are responsible for ensuring the reliability of the electricity transmission system that they respectively own and control. For the interconnection of a proposed generating facility, PG&E and the CAISO work together to prepare interconnection studies that evaluate potential impacts to the transmission system and identify any mitigation measures that are needed to ensure system conformance with performance levels required by applicable reliability criteria and planning standards. The interconnection studies typically assess an individual project's potential effect on the transmission system and identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards. If the identified mitigation measures includes modifications or additions to the transmission system that require CEQA review, then the Energy Commission will analyze the environmental impacts of those modifications or additions as part of its review of the "whole of the action" of a power plant project.

Mirant Marsh Landing has applied for interconnection for the MLGS under the CAISO's Large Generator Interconnection Process (LGIP). In the CAISO's reformed LGIP, the CAISO is processing interconnection requests together in clusters or groups. The MLGS is part of the Bay Area Transition Cluster (Transition Cluster), which initially included twelve projects. The CAISO prepared a Phase I Interconnection Study that evaluated the addition of all Transition Cluster projects collectively (Phase I Study) and the resultant need for transmission network upgrades. (See Exhibit 22.) The Phase I Study considered the impacts of 4,707 MW of new generation in the Transition Cluster, which included 1,087 MW of new capacity for the MLGS. (*Id*.)

Conditions have changed significantly since the Phase I Study was prepared. After the Phase I Study was prepared, Mirant Marsh Landing modified the project design for the MLGS (reducing its total capacity) and revised its interconnection request to utilize transmission capacity currently assigned to the existing CCPP units owned and operated by Mirant Delta. The CCPP units are scheduled to retire after the end of the day on April 30, 2013, whereas the MLGS is scheduled to commence commercial operation in Summer 2013. These factors allowed Mirant Marsh Landing to amend its interconnection request to reduce the net increase in transmission network capacity required by MLGS to only 100 MW. This is a significant decrease from the original MLGS interconnection request, which asked the CAISO to consider the addition of 1,087 MW of new capacity. (Exhibit 42.) A number of Transition Cluster projects also have dropped out of the interconnection queue, which significantly reduced the amount of new capacity to be added by the Transition Cluster projects collectively. Instead of 4,707 MW of new capacity as considered in the Phase I Study, the Transition Cluster projects now include only 1,159 MW of new capacity. Staff analyzed the Phase I Study but concluded that, due to the significant changes discussed above, the Phase I Study analysis is too speculative to be relied upon for the Energy Commission's analysis. (Exhibit 300, p. 5.5-10.)

The CAISO prepared a Phase II Interconnection Study for the Transition Cluster projects that was released on July 30, 2010 and docketed in this proceeding on August 10, 2010. The Phase II Interconnection Study does not identify upgrades that are required specifically for the MLGS. The Phase II Interconnection Study instead determines that the addition of all six Transition Cluster projects collectively would require upgrades to the transmission system that are consistent with expectations discussed in the Revised Staff Assessment and during the evidentiary hearing. As confirmed at the hearing, the need for the upgrades identified in the Phase II Interconnection Study remains speculative until all Transition Cluster LGIAs are executed. (7/1/10 RT 28-29.) Now that the Phase II Interconnection Study is complete, MLGS will progress through the LGIP and will not be allowed to interconnect with the CAISO transmission system without an executed Large Generator Interconnection Agreement (LGIA). In its capacity as the operator of the transmission system, the CAISO will not approve the MLGS interconnection or execute the LGIA until it has determined that the MLGS will comply with all applicable LORS in the area of transmission system engineering and that all potential impacts to the transmission system are adequately mitigated such that interconnection of the MLGS complies with all applicable reliability standards. The LGIA Process and the requirement for an executed LGIA thus ensures that interconnection of the MLGS will comply with all applicable reliability standards and transmission system engineering LORS.

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Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Interconnection Facilities. Staff analyzed the proposed interconnection facilities that are needed to connect with MLGS with the CAISO transmission system. (Exhibit 300, p. 5.5-1 – 5.5-18.) Based on Staff's analysis, we find that the proposed interconnection facilities, including the two 230 kV overhead electric transmission tie-line and associated interconnection equipment, are adequate and acceptable in accordance with applicable industry standards, good utility practices, and engineering and reliability LORS.

2. Indirect Project Impacts. The CAISO completed the Phase I Study for the Transition Cluster group of projects. Staff analyzed the Phase I Study and confirmed that it does not provide an accurate forecast of the reliability impacts of the Transition Cluster projects collectively or the proposed MLGS individually. (Exhibit 300, p. 5.5-10.) The Phase I Study analyzed the impacts associated with interconnecting 12 projects representing a total of 4,707 MW of new capacity. Half of these projects have now dropped out of the Transition Cluster and the total new capacity has been reduced to 1,159 MW. The Phase I Study also assumed that MLGS would require 1,087 MW of new transmission network capacity, but the MLGS interconnection has been reduced to require a total of 100 MW of new transmission network capacity. (*Id*., p. 5.5-4; Exhibit 42, p. 69.) For these reasons, the Phase I Study does not provide an accurate forecast of potential impacts of the MLGS on the electricity transmission system and the upgrades identified in the Phase I Study are not reasonably foreseeable consequences of the Marsh Landing Project. Relying on available information, Staff found that it had not identified any likely indirect transmission impacts associated with the addition of the MLGS to the transmission system. (*Id*., p. 5.5-8.) We find that the Phase I Study does not provide a reasonable forecast of potential reliability impacts and is too speculative to be used for purposes of the Energy Commission's licensing process. Relying on the information that was available when the Revised Staff Assessment was issued, we have not identified any likely indirect project transmission impacts that require assessment in this proceeding.

3. Phase II Interconnection Study. The CAISO has completed its Phase II interconnection study (Phase II Study) for the Transition Cluster. The Phase II Study analyzes the potential reliability impacts associated with the remaining 6 projects in the Transition Cluster and assesses a total of 1,159 MW of new capacity (rather than 4.707 MW), including 100 MW of new capacity for the MLGS (rather than 1,087 MW). (Exhibit 300, pp. 5.5-10; Phase II Study, pp. 1-2.) Staff concluded that the Phase II Study will provide a much better forecast of the reliability impacts of the MLGS and

the other Transition Cluster projects than the Phase I Study. (Id., p. 5.5-9.) Staff expected that the reliability impacts of 1,159 MW would be significantly smaller than the impacts of the 4,707 MW that were studied in the Phase I Study. (Id., p. 5.5-10.) The Phase II Study results are consistent with the Revised Staff Assessment and testimony provided at the evidentiary hearing. Staff also expects that the MLGS will conform to reliability LORS after completion of the Phase II Study and execution of the LGIA. (Id.) We find that the MLGS will conform to all applicable transmission and reliability LORS upon completion of the LGIP.

4. Indirect Impacts Identified in Phase II Study. Staff concluded that if the Phase II Study and the remaining LGIP evaluation identify and confirm the need for the construction or upgrade of transmission facilities to maintain electricity system reliability, those transmission facilities will be reviewed and approved by an appropriate permitting agency such as the California Public Utilities Commission, which would satisfy applicable CEQA requirements. (Exhibit 300, p. 5.5-5.) We find that the requirements of CEQA will be satisfied through other permitting processes as necessary.

5. Compliance with LORS. Following completion of the Phase II Study and the remainder of the LGIP, the CAISO will execute an LGIA with Mirant Marsh Landing before interconnecting the MLGS to the transmission system. The requirement for an LGIA will ensure that the MLGS complies with applicable transmission system engineering and reliability LORS. Conformance with applicable transmission system engineering and reliability LORS is further assured by Staff's proposed Condition of Certification TSE 5, which requires the submittal of the Phase II Study and the executed LGIA prior to the start of construction of the MLGS transmission facilities, and requires the project owner to ensure that the design, construction, and operation of the transmission facilities conform to all applicable LORS. We find that adoption of Condition of Certification TSE-5 will ensure that the design, construction, and operation of any transmission facilities that may be directly or indirectly required for the MLGS will conform to applicable LORS.

6. Cumulative Impacts. Potential cumulative impacts on the transmission system also will be identified and addressed in the Phase II Study and the remainder of the LGIP. By considering the addition of new generating facilities in clusters or groups, the CAISO's reformed LGIP is studying cumulative impacts associated with the contemporaneous addition of multiple new units. (Exhibit 300, p. 5.5-9.) Through the LGIP, the CAISO will identify and require the most efficient means to interconnect all of the projects that remain in the Transition Cluster. We find that the CAISO's LGIP will ensure that all potential cumulative reliability impacts are adequately addressed for the MLGS.

7. Conclusion. The Conditions of Certification proposed by Staff and adopted below are adequate to ensure that Marsh Landing Project will not adversely impact the transmission grid.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The interconnection facilities proposed for the MLGS are acceptable and will comply with all applicable LORS.
2. The Conditions of Certification adopted in this Decision ensure that the transmission-related aspects of the Marsh Landing Project will be designed, constructed, and operated in conformance with the applicable LORS identified in the Transmission System Engineering section of the Revised Staff Assessment.
3. Condition of Certification **TSE-5** and the CAISO's LGIP ensure that interconnection of the MLGS conforms with applicable engineering and safety and reliability LORS, and will not result in any significant adverse impacts on the reliability or stability of the transmission system.
4. We adopt the Conditions of Certification that are specified in the Transmission System Engineering section of the Revised Staff Assessment and identified as **TSE-1** through **TSE-7**.

E. TRANSMISSION LINE SAFETY AND NUISANCE

Staff analyzed Mirant Marsh Landing's proposal to transmit power from the MLGS to the electricity transmission system owned by PG&E and operated by the CAISO via two new single-circuit overhead 230-kV transmission lines that will connect the MLGS to the existing PG&E switchyard located adjacent to the MLGS site. Staff concluded that these lines and the related interconnection equipment will be designed, built, and maintained according to the local utility's (which is PG&E) guidelines for line safety and field management that conform to applicable LORS. (Exhibit 300, p. 4.11-1.) Staff concluded that with the adoption of Staff's proposed Conditions of Certification set forth in the Transmission Line Safety and Nuisance section of the Revised Staff Assessment, any safety and nuisance impacts that may be associated with use of the proposed MLGS transmission lines will be less than significant. (Id., pp. 4.11-1, 4.11-10 – 4.11-11.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. As described in the Revised Staff Assessment, Staff analyzed the design and operational plan for the transmission lines proposed for transmitting power from the MLGS to determine whether their related field and non-field impacts would constitute a significant environmental hazard in the area around the proposed routes. Staff's assessment included analyses of potential impacts from the transmission lines involving aviation safety, interference with radio frequency communication, audible noise, fire hazards, hazardous shocks, nuisance shocks, and electric and magnetic field (EMF) exposure. (Exhibit 300, pp. 4.11-1.) Staff also examined the Marsh Landing Project's compliance with federal, state, and local LORS applicable to the control of the field and non-field impacts of electric power lines, as identified in Transmission Line Safety and Nuisance Table 1 in the Revised Staff Assessment. (*Id*., pp. 4.11-2 – 4.11-3.) We find that Staff's analysis provides a sufficient basis for demonstrating that the Marsh Landing Project will not result in any significant adverse impacts and supports our Decision.

2. Line Safety and Field Management. Staff analyzed Mirant Marsh Landing's proposal to construct two new 230-kilovolt (kV) transmission lines and associated interconnection equipment to transmit electricity from the MLGS to the existing PG&E switchyard located adjacent to the MLGS site. (Exhibit 300, pp. 4.11-3, 3-1, 5.5-1.) Staff found that the lines and related interconnection equipment will be designed, constructed, and maintained according to PG&E guidelines for line safety and field

management that conform to applicable LORS. (*Id*., p. 4.11-9.) We agree and adopt Staff's finding.

3. Compliance with LORS and Potential Impacts. Staff's analysis of potential transmission line impacts focused on compliance with the design-related LORS and industry standards that are identified in the Transmission Line Safety and Nuisance section of the Revised Staff Assessment. These LORS and standards have been established to maintain impacts associated with transmission lines to below levels of potential significance. Staff determined that the MLGS transmission lines will comply with applicable LORS. We therefore find that any transmission line-related safety and nuisance impacts will be less than significant.

4. Electric and Magnetic Fields. Staff confirmed that there are no residences located near the MLGS site or its proposed transmission facilities, and that there will be no new residential exposure to any associated electric and magnetic fields (EMF). (*Id*., p. 4.11-10.) Staff explained that CPUC policy on safe EMF management requires that any high-voltage line within a given area be designed to incorporate the field strength-reducing guidelines of the main area utility lines to be interconnected. Staff concluded that the MLGS transmission lines will incorporate standard EMF-reducing measures established by the CPUC and used by PG&E. Staff confirmed that the proposed transmission line designs and operational plans will be adequate to ensure that EMFs are managed in accordance with applicable CPUC requirements. Given the absence of residences along the route of the transmission lines, there are no health concerns associated with EMF for the Marsh Landing Project. On-site worker or public exposure will be short term and at levels expected for PG&E lines of similar design and current-carrying capacity. Such exposure is well understood and has not been established as posing a significant human health hazard. The available scientific evidence does not establish that EMF pose a significant health hazard to humans. (*Id.,* p. 4.11-6.) We find that EMF generated by the Marsh Landing Project's transmission lines will not create a significant adverse health impact.

5. Cumulative Impacts. Staff evaluated field intensities that reflect the interactive, and therefore, cumulative effects of fields from all contributing conductors. The conductors for the MLGS transmission lines will be located entirely within the boundaries of the MLGS, CCPP, and PG&E switchyard sites, close to existing line corridors. (Id. p. 4.11-9.) As a result, any measured intensities will reflect the interactive and thus cumulative impacts of fields from the proposed and contributing lines. Because the proposed lines will be designed according to applicable field-reducing PG&E guidelines (as currently required by the CPUC for effective field management), any contribution to total area exposures should be at levels expected for PG&E lines of similar voltage and current-carrying capacity. It is this similarity in intensity that constitutes compliance with current CPUC requirements on EMF management. The

actual field strengths and contribution levels for the MLGS transmission line design will be assessed from the results of the field strength measurements specified in Condition of Certification **TLSN-3**. We find that the transmission lines installed for the Marsh Landing Project will not result in any significant adverse cumulative impacts.

6. Aviation Hazards. Staff analyzed potential aviation hazards associated with the MLGS transmission lines and concluded that none is presented. There are no major airports in the vicinity of the MLGS site and its associated transmission lines. The maximum height of the Marsh Landing Project structures is also below the Federal Aviation Administration's' 200-foot threshold of concern. (Exhibit 300, p. 4.11-4.) We find that it is not necessary to recommend location changes on the basis of a potential hazard to aviation.

7. Shocks, Fire Hazards, Corona Noise. Staff confirmed that the potential for nuisance shocks from the MLGS transmission lines will be minimized through grounding and other field-reducing measures to be implemented in keeping with current PG&E guidelines (reflecting standard industry practices). These field-reducing measures will maintain the generated fields within levels not associated with radio-frequency interference or audible noise. The potential for hazardous shocks will be minimized through compliance with the height and clearance requirements of the CPUC's General Order 95. Compliance with Title 14, California Code of Regulations, Section 1250, will minimize fire hazards while the use of low-corona line design, together with appropriate corona-minimizing construction practices, would minimize the potential for corona noise and its related interference with radio-frequency communication in the area around the proposed route. We find that Staff properly analyzed the potential for shocks, fire hazards, and corona noise. We find that potential impacts associated with these areas will be mitigated to less than significant levels through compliance with applicable LORS, safety standards, and industry guidelines.

8. Conclusion. Based on Staff's analysis, we find that the new transmission lines for the MLGS will not result in significant adverse environmental impacts to public health and safety or cause significant adverse direct, indirect, or cumulative impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure. We find that the Marsh Landing Project's transmission line will comply with existing LORS for public health and safety.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Conditions of Certification adopted below ensure that the Marsh Landing Project's transmission lines comply with all applicable LORS relating to Transmission Line Safety and Nuisance as identified in the Transmission Line and Safety section of the Revised Staff Assessment.
2. The Marsh Landing Project's new transmission lines will not have a significant adverse impact on the environment due to transmission line safety and nuisance factors.
3. We adopt the Conditions of Certification specified in the Transmission Line Safety and Nuisance section of the Revised Staff Assessment and identified as **TSLN-1** through **TSLN-5**.

V. PUBLIC HEALTH AND SAFETY

The Revised Staff Analysis contained a detailed and thorough analysis of the potential for the Marsh Landing Project to cause adverse health effects to the general public and workers at the MLGS site. The following sections discuss Staff's analysis and conclusions in the areas of Greenhouse Gas Emissions, Air Quality, Public Health, Worker Safety and Fire Protection, Hazardous Materials Management, and Waste Management, as well as other relevant evidence, and sets forth our findings and conclusions in each area.

A. GREENHOUSE GAS EMISSIONS

The generation of electricity using fossil fuels such as natural gas produces emissions of "criteria pollutants" and greenhouse gases (GHG). Criteria pollutants are emissions for which regulatory agencies have established legal "criteria" that limit the amount of the pollutants that may be emitted and the concentrations of the pollutants in the air. The Marsh Landing Project's emissions of criteria pollutants and compliance with applicable air quality LORS are discussed in the **Air Quality** section of this Decision.

This section of the Decision assesses the GHG emissions that are likely to result from the construction and the operation of the Marsh Landing Project. These emissions will consist primarily of carbon dioxide (CO_2), with much smaller amounts of nitrous oxide (N_2O), methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perflurocarbons (PFC). In our Decision and Staff's analysis, all GHG emissions have been converted into carbon dioxide equivalent (CO_2E) metric tonnes (MT) for ease of comparison. (Exhibit 300, p. 4.1-69.)

The *Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications*, CEC-700-2009-004 (Committee CEQA Guidance), of which we have taken official notice in this proceeding, describes our approach in evaluating potential impacts associated with GHG emissions from a power plant. The Committee CEQA Guidance explains that, due to the nature of the interconnected electricity system and the manner in which power plants are operated as part of that system, GHG emissions from power plants must be analyzed by evaluating how their operation affects GHG emissions throughout the interconnected system. California's electricity system is part of an interconnected transmission system that serves the entire western region of the United States, Canada, and Mexico. In that system, hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Electricity is produced and

consumed instantaneously on the integrated system. Any change in output from a particular generation source is likely to affect the output from other generating sources. (See Committee CEQA Guidance, pp. 10-12.)

The western electricity system is also operated in an integrated manner. The MLGS will interconnect with the portion of the electricity transmission system that is owned by PG&E and operated by the CAISO. The CAISO is responsible for operating the system so that it provides power reliably and at the lowest cost. The CAISO generally dispatches generating facilities in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). (*Id*., p. 20.) Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), when one power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated. (*Id*.; see also 2007 IEPR, p. 63.) In sum, the unique way power plants operate in an integrated system means that we must assess their operational GHG emissions on a system wide basis. Staff used this approach in analyzing the GHG emissions of the Marsh Landing Project in the Revised Staff Assessment. (Exhibit 300, pp. 4.1-64 – 4.1-84.)

The Energy Commission also has established a three-part test to aid in its analysis of a natural gas-fired plant's ability to advance the State's goals and policies for reducing system wide GHG emissions. As specified in the Energy Commission's decision on the Avenal Energy Project (08-AFC-1), natural gas-fired plants must:

- not increase the overall system heat rate for natural gas plants;
- not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and
- reduce system wide GHG emissions and support the goals and policies of AB 32.

In the Revised Staff Assessment, Staff presented its detailed analysis of potential impacts associated with the Marsh Landing Project's GHG emissions. Staff considered whether the Marsh Landing Project's GHG emissions during construction will have significant adverse impacts, and whether the Marsh Landing Project's GHG emissions during operation will be consistent with applicable LORS and California's policies and goals for reducing overall GHG emissions. (Exhibit 300, p. 4.1-64 – 4.1-84.)

Staff concluded that the MLGS will be an efficient, highly dispatchable natural gas-fired simple-cycle power plant. (*Id*., pp. 4.1-74 – 4.1-75, 4.1-82.) Staff found that the addition of the MLGS to the electricity system is likely to displace other less efficient, slower starting, and less flexible plants, and will facilitate the integration of renewable

resources, all of which will contribute to a net reduction in total GHG emissions. (*Id*., p. 4.1-82.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Construction. Staff determined that total GHG emissions from the Marsh Landing Project during the 27-month construction period are likely to be 10,303 $MTCO_2$ equivalent ($MTCO_2E$). (Exhibit 300, p. 4.1-70.) Staff concluded that GHG emissions from the Marsh Landing Project's construction activities will not be significant because the period of construction will be short-term and the control measures that Staff recommends to address criteria pollutant emissions during construction (see the **Air Quality** section of this Decision) will minimize GHG emissions to the extent feasible. (*Id.*, p. 4.1-72.) We find that GHG emissions from construction of the Marsh Landing Project will not result in a significant adverse impact.

2. Operation. Staff explained that the primary sources of GHG emissions during operation of the MLGS will be the four natural gas-fired combustion turbine generators. (Exhibit 300, p. 4.1-70 – 4.1-72.) There will be a small amount of sulfur hexafluoride emissions from electrical components. (*Id*., p. 4.1-70.) Staff found that the MLGS is expected to produce a maximum of 756,981 $MTCO_2E$ annually. (*Id.*, p. 4.1-71.) We adopt Staff's finding.

3. SB 1368 Emissions Performance Standard. The law adopted in California Senate Bill 1368 (SB 1368) and associated implementing regulations prohibit California's electric utilities from entering into long-term contracts to purchase power produced by base load power plants whose CO_2 emissions exceed the Emissions Performance Standard (EPS) of 0.500 metric tones of CO_2 per megawatt-hour ($MTCO_2$/MWh). (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC Decision 07-01-039.) A base load power plant is one with an annual capacity factor of 60 percent or greater. (*Id*.) Currently the SB 1368 EPS is the only LORS that could apply to limit GHG emissions from the Marsh Landing Project. Staff confirmed that the MLGS annual capacity factor will not exceed 20 percent. (Exhibit 300, p. 4.1-71.) The MLGS thus is not a base load plant and the SB 1368 EPS does not apply to the Marsh Landing Project. (*Id*.) Staff concluded that annual GHG emissions from operation of the MLGS will equate to an emissions performance factor of 0.601 $MTCO_2$/MWh. (*Id.*) We find that the MLGS will comply with the SB 1368 EPS.

4. State Policies and Goals. As stated above, the SB 1368 EPS is the only LORS that currently could apply to limit GHG emissions from the Marsh Landing Project. In the Revised Staff Assessment, however, Staff also

analyzed the Marsh Landing Project for consistency with the goals of other laws and policies that are designed to reduce overall GHG emissions in the State. Staff considered whether the Marsh Landing Project will be consistent with the California Global Warming Solutions Act of 2006, Assembly Bill 32, codified in Health & Safety Code, § 38560 et seq., (AB 32), which requires the California Air Resources Board (CARB) to adopt regulations that will reduce statewide GHG emissions by the year 2020 to the level of statewide GHG emissions that existed in 1990, as well as gubernatorial Executive Order S-3-05 (June 1, 2005), which requires a further reduction to a level that is 80 percent below the 1990 GHG emissions by the year 2050. (Exhibit 300, p. 4.1-67.) Staff found that the owner of the MLGS will be required to comply with mandatory GHG reporting requirements pursuant to CARB's regulations, and that this reporting will enable CARB to gather the information needed to advance AB 32 goals and requirements. *(Id.,* p. 4.1-80.) Staff found that the Marsh Landing Project will be consistent with AB 32 goals. *(Id*., 4.1-81.) We adopt Staff's finding.

5. System Wide Approach. Consistent with the Committee CEQA Guidance referenced above, Staff analyzed how operation of the MLGS will affect GHG reductions across the entire California and western electricity system. In a Staff report issued pursuant to the Committee CEQA Guidance, Staff adopted a "blueprint" to describe the long-term roles of fossil-fueled power plants in California's electricity system. Staff determined that natural gas-fired power plants will be needed to fulfill five roles in a future high-renewables, low-GHG system: (1) intermittent generation support; (2) local capacity requirements; (3) grid operations support; (4) extreme load and system emergencies support; and (5) general energy support. (Exhibit 300, p. 4.1-69.) In the Revised Staff Assessment, Staff analyzed the MLGS for its role in providing local capacity and generation, intermittent generation support, and general energy support for expected generation retirements or replacements. (*Id.,* p. 4.1-71 – 4.1-72.) We find that Staff's analysis is consistent with the Committee CEQA Guidance and the related Staff blueprint.

6. Role in Providing Local Capacity and Generation – Efficiency Benefits. The MLGS will be within the Greater Bay Area local reliability area. Staff noted that the MLGS will have a net worst case heat rate of approximately 11,124 Btu/kWh. (Exhibit 300, p. 4.1-73.) Staff determined that the MLGS will have a lower heat rate than many of the existing generating facilities that are currently used to provide local reliability support and peaking capacity in the Greater Bay Area. This is shown in Greenhouse Gas Table 4 in the Revised Staff Assessment. (*Id*., p. 4.1-74.) Local generating units with the best (lowest) heat rate or lowest GHG performance factor generally operate more than other units with higher heat rates, as shown by the relative amount of energy (GWh) produced in 2009 from the local units. *(Id.)* This reflects the fact that the dispatch order generally follows economic or efficiency dispatch. Staff concluded

that the MLGS is likely to displace some less efficient local generation in the dispatch order of gas-fired facilities, and that the MLGS will be more efficient and emit fewer GHG emissions during any hour of operation than other existing units in the local reliability area that are used to supply power during periods of peak demand. *(Id.,* p. 4.1-73.) Staff also found that the MLGS will not increase the overall system heat rate for natural gas-fired power plants. (*Id*.) We find that the MLGS is likely to lead to a net reduction in total GHG emissions as a result of its improved efficiency as compared with other existing power plants that currently provide local reliability and peaking capacity. We also find that the MLGS will not increase the overall system heat rate for natural gas-fired power plants.

7. Role in Providing Local Capacity and Generation – Operating Benefits. Staff also explained that the MLGS will offer more flexible operating capabilities, including fast start capabilities and very low minimal operating times, as compared with existing peaking resources. (Exhibit 300, p. 4.1-73.) The MLGS will be capable of being started up, ramped up and down to meet specific needs, and then shut down, resulting in fewer GHG emissions overall when operated to meet demand currently served by older, less flexible resources. *(Id.)* This is due to the fact that some older facilities (which may have a similar heat rate to the MLGS) can take hours to start and have substantial minimum run times once started. (*Id.*) The superior flexibility of MLGS compared to existing units further ensures that MLGS will not increase the overall system heat rate for natural gas-fired power plants because it will provide the same reliability service without operating during times when existing units otherwise would be starting or operating. (*Id*.) The flexibility of MLGS to respond quickly to changing conditions on the transmission system also will make it preferential to existing units in the dispatch order. *(Id*.) We find that the MLGS is likely to result in a net reduction in total GHG emissions due to its improved operating flexibility as compared with other existing power plants that currently provide local reliability and peaking capacity.

8. Intermittent Generating Support. Staff expects intermittent solar and wind generation to account for most new renewable generation in the next few decades. (Exhibit 300, p. 4.1-74 – 4.1-76.) Intermittent generation requires support from dispatchable generation to be integrated effectively into the electricity system. *(Id.)* Staff found that the MLGS will provide fast-start and rapid ramping capabilities that can be used to integrate intermittent renewable generation. (*Id.*) Each of the four MLGS turbines will be capable of starting up and reaching full load in approximately 12 minutes, and the MLGS will be capable of reaching 80 percent of full load in only 10 minutes. (*Id.)* The MLGS will be capable of providing 600 MW of non-spinning reserves, which is an ancillary service that the CAISO requires to integrate intermittent renewable generation. (*Id.*) As noted above, the MLGS also will have very low minimum operating times, which means that it can be started and ramped up quickly, then shut down after a short duration to enhance the integration and backup of intermittent

renewable deliveries. (*Id*.) Availability and operation of the MLGS will support the addition of renewable generation into the electricity system, which will further reduce total system GHG emissions. (*Id.*) We find that the MLGS will help facilitate a net reduction in total GHG emissions through its role in integrating increased amounts of renewable generation. We find that the MLGS will not interfere with generation from existing renewable facilities or with the integration of new renewable generation. We also find that the MLGS will be more likely to foster integration of renewable energy than comparable non-renewable base load or intermediate energy resources.

9. Displacement of Coal-Fired Resources. Staff concluded that the MLGS will facilitate to some degree the replacement of out-of-state coal electricity generation that will not be eligible for long-term contracts pursuant to the SB 1368 EPS. (Exhibit 300, p. 4.1-76 – 4.1-77.) Staff found that between now and 2020, more than 18,000 GWh of energy procured by California utilities under existing contracts will have to be replaced, as listed in Greenhouse Gas Table 6 in the Revised Staff Assessment. (*Id*.) Staff concluded that new and existing generation resources are likely to replace the coal-fired energy and capacity, including both renewable generation and natural gas fired generation. (*Id.*) Staff found that MLGS will emit significantly less GHG than existing coal and petroleum coke-fired generation, which average about 1.0 MTCO2/MWh. (*Id.)* We find that the MLGS is likely to further contribute to reducing total GHG emissions by displacing the need for coal-fired resources.

10. Once-Through Cooling Facilities. Staff concluded that the MLGS is likely to displace capacity and energy currently provided by aging power plants that utilize once-through cooling technology. In **Greenhouse Gas Table 7** in the Revised Staff Assessment, Staff summarized the existing units that will be affected by new regulation regarding once-through cooling technology. (Exhibit 300, p. 4.1-77 – 4.1-79.) Staff found that these existing units are generally less efficient than the MLGS. (*Id*.) As noted above, the MLGS also offers superior operating flexibility as compared with many of the aging units, making it even more likely to displace less flexible local resources in the dispatch order. We find that the potential for the MLGS to displace aging generating resources will help reduce total GHG emissions.

11. Cumulative Impacts. Staff's entire analysis of potential impacts associated with the Marsh Landing Project's GHG emissions is a cumulative impacts analysis. (Exhibit 300, p. 4.1-79.) The MLGS has been analyzed as a potential cumulative impact in the context of its effect on the electricity system, resulting GHG emissions from the system, and existing GHG regulatory requirements and GHG energy policies. (*Id*.) Staff concluded that the MLGS will help reduce total GHG emissions across the electricity system. We find that the MLGS will result in a

cumulative overall reduction in GHG emissions on the electricity system and therefore will not result in adverse impacts that are cumulatively significant.

12. Precedent Finding. The Energy Commission established a precedent finding in its final decision for the Avenal Energy Project specifying that all new natural gas fired power plants certified by the Energy Commission must: (1) not increase the overall system heat rate for natural gas plants; (2) not interfere with generation from existing renewable facilities nor interfere with the integration of new renewable generation; and (3) taking these factors into account, help ensure a reduction of system wide GHG emissions and support the goals and policies of AB 32. Staff concluded that the MLGS, with its low heat rate and superior operating flexibility as compared with other peaking resources, its rapid start and fast ramping capabilities, and its low annual capacity factor, will satisfy these conditions. (Exhibit 300, p. 4.1-80.) As discussed above, Staff concluded that the MLGS will lead to a net reduction in GHG emissions across the electricity system. We find that the MLGS will not increase the overall system heat rate for natural gas-fired power plants, will not interfere with generation from existing renewable generation or interfere with the integration of new renewable generation, and, taking into account these factors, will reduce system wide GHG emissions and support the goals and policies of AB 32. We find that MLGS is consistent with the precedent finding regarding GHG emissions that we established in our final decision on the Avenal Energy Project.

CONCLUSIONS OF LAW

1. The Marsh Landing Project's construction-related GHG emissions will not cause a significant adverse environmental impact.
2. The GHG emissions from a power plant's operation should be assessed in the context of the operation of the entire electricity system of which the plant is an integrated part. The GHG emissions of any power plant must be assessed within the system on a case-by-case basis.
3. The Marsh Landing Project's operational GHG emissions will not cause a significant adverse environmental impact.
4. The Marsh Landing Project is a simple-cycle power plant, not designed, or intended, or permitted for base load generation and is therefore not subject to SB 1368 EPS.
5. The Marsh Landing Project's operation will foster the achievement of the GHG goals of AB 32 and Executive Order S-3-05.
6. The Marsh Landing Project will not increase the overall system heat rate for natural gas plants.

7. The Marsh Landing Project will not interfere with generation from existing renewable or with the integration of new renewable generation.
8. Taking into account Conclusions of Law 6 and 7 above, the Marsh Landing Project will reduce system wide GHG emissions.
9. No Conditions of Certification are required for this topic area.

B. AIR QUALITY

This section examines the potential air quality impacts associated with emissions of criteria air pollutants from construction and operation of the Marsh Landing Project. In consultation with the local air pollution control district, which in this case is the Bay Area Air Quality Management District (BAAQMD), the Energy Commission determines whether a power plant project will conform with applicable air quality LORS, whether it will likely result in significant air quality impacts (including violations of ambient air quality standards), and whether the mitigation measures proposed for the project will likely reduce potential impacts to insignificant levels.

Staff analyzed these issues in detail as reflected in the Revised Staff Assessment (Exhibit 300, pp. 4.1-1 – 4.1-63.) In particular, Staff considered: (1) whether the Marsh Landing Project is likely to conform with applicable federal, state, and BAAQMD air quality LORS (consistent with Title 20, California Code of Regulations, section 1744 (b)); (2) whether the Marsh Landing Project is likely to cause significant air quality impacts, including new violations of ambient air quality standards or substantial contributions to existing violations of those standards (consistent with Title 20, California Code of Regulations, section 1743); and (3) whether the mitigation measures proposed for the Marsh Landing Project by the Applicant, the BAAQMD and Staff are adequate to lessen any potential impacts to a level of insignificance (consistent with Title 20, California Code of Regulations, section 1742 (b)). (Id., p. 4.1-2.)

Staff evaluated the expected air quality impacts of the emissions of criteria air pollutants from both the construction and operation of the Marsh Landing Project. As noted above, "criteria" air pollutants are substances for which the state and/or federal government has established an ambient air quality standard to protect public health. The applicable standards are set forth in Air Quality Table 2 in the Revised Staff Assessment. These standards are set at levels that contain a margin of safety to adequately protect the health of all people, including those most sensitive to adverse air quality impacts such as the elderly, persons with existing illnesses, children, and infants. (*Id.*, pp. 4.1-6, 4.1-21.)

The criteria pollutants analyzed in the Revised Staff Assessment are nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), inhalable particulate matter less than 10 microns in diameter (PM_{10}), and fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). (*Id.*, p. 4.1-1.) Staff also analyzed nitrogen oxides (NOx, consisting primarily of nitric oxide (NO) and NO_2), sulfur oxides (SO_x), and volatile organic compounds (VOC), also known as precursor organic compounds (POC). (Id.) Staff analyzed NO_x and VOC due, in part, to their potential to react in the atmosphere

as precursors to ozone. Staff analyzed NO_x and SO_x due to their potential to react in the atmosphere to form particular matter and contribute to acid rain. (*Id.*) Staff also analyzed emissions of ammonia (NH_3) due to its potential to contribute to the formation of particulate matter. (*Id.,* p. 4.1-26.) Staff considers all emissions of a criteria pollutant for which the local air district is in non-attainment (meaning that ambient air quality in the region does not meet an applicable federal or state air quality standard for that criteria pollutant), and all emissions of any precursor to a nonattainment criteria pollutant, to be significant. Staff takes the position that all such emissions (in this case, NO_x, VOC, PM_{10}, PM2.5, SO_x, and NH_3) must be mitigated. (*Id*., p. 4.1-21.) No party disagrees with this approach.

In preparing its Revised Staff Assessment, Staff reviewed the BAAQMD's Preliminary Determination of Compliance for the MLGS (PDOC) and consulted with BAAQMD regarding final permit conditions that will be included in the BAAQMD's Final Determination of Compliance for the MLGS (FDOC). (Exhibit 300, pp. 1.6, 4.1-37.) The BAAQMD released its FDOC on June 25, 2010 confirming that the Marsh Landing Project will comply with all BAAQMD rules and regulations. (Exhibit 301). Staff's expert witness, who is the author of the Air Quality section of the Revised Staff Assessment, confirmed that all permit conditions in the FDOC are reflected in the Conditions of Certification specified in the Revised Staff Assessment. (7/1/10 RT 16:3-14.)

Staff concluded that, with the Conditions of Certification in the Revised Staff Assessment, the Marsh Landing Project will conform to all applicable federal, state and BAAQMD LORS and will not result in significant adverse air quality-related impacts. (Exhibit 300, p. 4.1-1, 4.1-38, 4.1-39.) Staff concluded that the MLGS will comply with applicable BAAQMD rules and regulations, including New Source Review, Best Available Control Technology (BACT) requirements, and requirements to offset emission increases. (*Id.*, p. 4.1-38.) Staff also concluded that, in conjunction with offsets required by BAAQMD, additional emission reduction credits (ERCs) should be surrendered for mitigation of the Marsh Landing Project's emissions of particulate matter and sulfur dioxide. (*Id*., p. 4.1-32.) Staff requires these ERCs to provide additional mitigation pursuant to CEQA. (*Id*.)

Our air quality analysis properly determined that a PSD permit was not required. Despite assertions by commenters that the Gateway facility and/or the CCPP are under "common control" with the MLGS, both the BAAQMD and Staff concluded that the MLGS is a separate facility from both Gateway and the CCPP for purposes of PSD permitting. The Gateway and CCPP facilities were appropriately considered in the cumulative Air Quality analysis.

Our analysis did not consider the CCPP and the MLGS as a single source of air contaminants, which the BAAQMD did not determine it to be.

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. BAAQMD. The Marsh Landing Project is located within the jurisdiction of the BAAQMD. The federal and state attainment status of the BAAQMD for all criteria pollutants is specified in Air Quality Table 3 in the Revised Staff Assessment. (Exhibit 300, p. 4.1-8.) The BAAQMD is in nonattainment with federal standards for ozone (O_3) (marginal nonattainment with the 8-hour standard) and $PM_{2.5}$. (Id.) The BAAQMD is in nonattainment with state standards for ozone (O_3) (1-hour and 8-hour standards), PM_{10}, and $PM_{2.5}$. (*Id.)* The BAAQMD's status is unclassified for the federal PM_{10} standard. (*Id*.) The BAAQMD meets applicable federal and standards for other criteria pollutants (CO, NO_2, SO_2). (*Id.*) We find that Staff properly considered the BAAQMD's attainment status.

2. MLGS Stationary Sources. The MLGS will include four Siemens 5000-F natural gas-fired combustion turbines (CTGs) operating in simple cycle mode. (Exhibit 300, p. 4.1-15.) Each of the four CTGs has a nominal capacity rating of 190 MW and a heat input capacity of up to 1,984 MMBtu/hr (lower heating value). (*Id*.) The MLGS also will include two natural gas-fired fuel gas preheaters each with a heat input capacity of 5 MMBtu/hr. (*Id.*) The MLGS is designed to provide peaking capacity and will operate at a maximum annual capacity factor of 20 percent. (*Id.*) Each CTG will be equipped with evaporative coolers to decrease the temperature of the inlet air. (*Id.)* The MLGS also will include other facilities causing minor exempt levels of emissions such as an administrative and control room building, an ammonia storage tank, an oil/water separator, and electrical circuit breakers and transformers. (*Id.*) We find that Staff properly identified the stationary sources of emissions for the Marsh Landing Project.

3. Construction Emissions. Staff analyzed potential air quality impacts associated with emissions during construction of the Marsh Landing Project, which is expected to take approximately 27 months. For short-term construction activities that essentially cease before operation of the power plant begins, Staff's assessment is qualitative and mitigation consists of controlling construction equipment tailpipe emissions and fugitive dust emissions to the maximum extent feasible. Staff analyzed the results of a modeling analysis for the Marsh Landing Project's construction activities. (Exhibit 300, p. 4.1-23.) Staff determined that the Marsh Landing Project's construction-related impacts will be temporary and short-term in nature, but could temporarily contribute to violations of

the ozone, PM_{10}, and $PM_{2.5}$ ambient air quality standards. *(Id.,* p. 4.1-24.) Staff concluded that construction emissions will not create a new violation of the California one-hour or annual NO_2 ambient air quality standard and will not cause or contribute to a violation of the standards for CO and SO_2. *(Id.)* Staff also does not expect a violation of the new federal 1-hour NO_2 standard based on a conservative estimate of construction emissions. (*Id.)* Staff recommended mitigation measures in Conditions of Certification AQ-SC-1 through AQ-SC-5 to reduce construction emissions. (Id., pp. 4.1-24- 4.1-25.) Staff found that compliance with these conditions will eliminate the potential for significant air quality impacts during construction of the Marsh Landing Project. We find that the Marsh Landing Project's construction-related air quality impacts will be mitigated to below a level of significance with the mitigation measures in Staff's proposed Conditions of Certification AQ-SC-1 through AQ-SC-5, which we adopt below.

4. Analysis of Emissions During Operation. Staff analyzed the potential for the Marsh Landing Project's emissions during operation to cause an increase in ambient concentrations of the criteria pollutants or their precursors. (Exhibit 300, p. 4.1-22.) The analysis consists of quantifying the Marsh Landing Project's emissions, and then using an atmospheric dispersion model to determine the probable change in ground-level concentrations caused by those emissions. (*Id*.) Staff reviewed the results of the modeling analyses performed by Mirant Marsh Landing, which consisted of a number of direct modeling analyses, including both fumigation modeling and modeling for impacts during commissioning. (*Id*., p. 4.1-25.) For routine operation impacts, Mirant Marsh Landing prepared a refined dispersion modeling analysis to identify off-site criteria pollutant impacts. (*Id.)* The BAAQMD conducted its own dispersion modeling analysis and independent impact assessment. (*Id.)* Staff confirmed that the modeled impacts are extremely conservative because the maximum impacts are evaluated under a combination of highest allowable emission rates and the most extreme meteorological conditions, which are unlikely to occur simultaneously. (Id.) Staff also analyzed the potential for higher short-term concentrations of pollutants to occur during fumigation conditions. (*Id.*, 4.1-27.) Fumigation conditions are generally short-term in nature and only compared to standards with averaging times of 24 hours or shorter. (*Id.*) The applicant and the BAAQMD analyzed the air quality impacts of the MLGS under shoreline fumigation conditions and thermal inversion breakup conditions, both of which can cause temporarily higher concentrations of ground level pollutants. (*Id.)* Staff also considered potential air quality impacts during the commissioning phase of the MLGS. Commissioning impacts would occur over short-terms within a window of 90 days allowed for completing the commissioning period. Estimates of commissioning emissions are based on partial load operations before the MLGS emission control systems become operational. (Id., 4.1-28.) We find that Staff's analysis of potential impacts

during operation of the MLGS is adequate to support our findings and conclusions herein.

5. Potential Operational Impacts. Based on the analysis above, Staff makes the following findings in the Revised Staff Assessment:

- The Marsh Landing Project will neither cause new violations of any NO_2, CO, or SO_2 ambient air quality standards nor contribute to existing violations for these pollutants. Therefore, the Marsh Landing Project's direct NO_2, CO, and SO_2 impacts are less than significant. (Exhibit 300, pp. 4.1-4.1-26, 4.1.39.)
- The Marsh Landing Project's NO_x and VOC emissions would contribute to existing violations of state and federal ozone ambient air quality standards, but the ozone precursor offsets required by BAAQMD and shown in Condition of Certification AQ-SC7 will mitigate the ozone impact to a less than significant level. (*Id*.)
- The Marsh Landing Project's PM_{10} and $PM_{2.5}$ emissions and its emissions of SO_x, which is a PM_{10} and $PM_{2.5}$ precursor emission, would contribute to the existing violations of state PM_{10} and state and federal $PM_{2.5}$ ambient air quality standards. (*Id.*, p. 4.1-26.) BAAQMD rules do not require offsets for these emissions, but Mirant Marsh Landing has agreed to provide additional ERCs that will mitigate these impacts to a less than significant level. (*Id*., p. 4.1-39.) Staff recommends Condition of Certification AQ-SC7 to ensure that, in conjunction with the offsets required by BAAQMD for other emissions, additional offsets will be surrendered in sufficient quantities to offset all nonattainment pollutant and precursor emissions at a ratio of at least one-to-one. These offsets will mitigate the Marsh Landing Project's particulate matter and precursor emissions to less than significant levels. (*Id*.)
- Staff concluded that short-term fumigation impacts for NO_2 will be higher than the impacts under routine operation but will not create any new violation of the limiting standard. (Id., p. 4.1-27 – 4.1.28.)
- Staff concluded that impacts due to emissions of PM_{10}, $PM_{2.5}$, and SO_2 during commissioning would occur under similar exhaust conditions as those for startup while in routine operation because these emissions are proportional to fuel use. Staff recommends Condition of Certification AQ-SC9 to ensure that the applicant will conduct initial commissioning on no more than two CTGs of the four CTGs simultaneously. (*Id*., p. 4.1-28.)

We find that Staff thoroughly and adequately analyzed potential impacts associated with emissions during operation of the Marsh Landing Project. We find that, with the mitigation measures recommended by Staff and reflected in the Conditions of Certification adopted in this Decision, the

Marsh Landing Project's emissions of criteria pollutants and their precursors will be mitigated to levels of insignificance.

6. Ammonia Emissions. The Revised Staff Assessment contains a detailed analysis of the Marsh Landing Project's emissions of ammonia (NH_3). (Exhibit 300, pp. 4.1-26 – 4.1-27.) Ammonia is not a criteria pollutant and the BAAQMD does not restrict ammonia except for purposes of avoiding excessive health risks. (Id.) Staff evaluated potential impacts associated with ammonia emissions in light of ongoing BAAQMD studies that are examining the relationship of ammonia emission inventory to ambient particulate levels. (*Id.*) Staff explained that the feasibility of reducing ammonia slip for a particular project depends on the power plant technology being used, the design of the NOx control system, the expected operating profile, and the cost-effectiveness for the particular project being considered. *(Id.)* Based on the information gathered during review of this case, which has been incorporated into the evidentiary record, and consistent with most other simple-cycle power plants reviewed by the Energy Commission, Staff recommends that the Marsh Landing Project be required to achieve an ammonia slip limit of 10 ppmvd, as reflected in the BAAQMD's FDOC and associated permit conditions. (*Id*.) The BAAQMD also has recommended a permit condition, now reflected in Staff's proposed Condition of Certification AQ-17(e) in the Revised Staff Assessment, which specifies that the Air Pollution Control Officer (APCO) may require the installation on one exhaust point of a continuous emission monitor (CEM) if the APCO determines that a commercially available CEM has been proven to be accurate and reliable and that an adequate Quality Assurance/Quality Control protocol for the CEM has been established. (See Exhibit 300, p. 4.1-50; Exhibit 42, p. 15.) We find that 10 ppmvd is the appropriate limit for the Marsh Landing Project and adequately mitigates MLGS ammonia emissions.

7. Mitigation – BACT. For operating emissions, Staff's proposed mitigation includes both the Best Available Control Technology (BACT) and ERCs or other valid emission reductions to offset emissions of both nonattainment criteria pollutants and their precursors. For routine operation, Staff confirmed that the MLGS will mitigate air quality impacts by limiting emissions to the maximum extent feasible with the BACT and by providing ERCs to offset emissions. (Exhibit 300, pp. 4.1-29 – 4.1-30.) For post-combustion emission controls, the CTGs at the MLGS will include two catalyst systems: the selective catalyst reduction (SCR) system to reduce NO_x; and the oxidation catalyst system to reduce CO and VOC. (*Id.*, p. 4.1-29.) The MLGS will operate exclusively with pipeline quality natural gas delivered via the PG&E gas transmission system. This limits SO_x and particulate matter emissions. (*Id*.) Additionally, the MLGS will use combustion turbine inlet air filters to minimize particulate emissions. (Id.) Staff concluded that the MLGS will comply with applicable BACT requirements of the BAAQMD's rules and regulations. (Id., p. 4.1-38.) We

find that the Marsh Landing Project will employ applicable BACT requirements to control emissions of criteria and precursor pollutants.

8. Mitigation – Offsets. Staff reviewed the offset package proposed for the Marsh Landing Project. Mirant Marsh Landing proposes to provide offsets in the form of ERCs that meet the requirements of applicable BAAQMD rules. Staff confirmed that Mirant Marsh Landing has access to sufficient ERCs to comply with BAAQMD offsetting requirements. (Exhibit 300, pp. 4.1-19 – 4.1-32.) Staff concluded that the Marsh Landing Project will comply with BAAQMD's NO_x and VOC offset requirements and will provide overall total ERCs for its ozone precursor emissions at an offset ratio of at least one-to-one. (*Id*.) The BAAQMD has confirmed that offsets will be provided as required by Public Resources Code section 25523(d)(2). (Exhibit 301.) We find that the Marsh Landing Project's nonattainment and nonattainment precursor criteria pollutant emissions will be fully offset.

9. CEQA Mitigation. Staff concluded that the ERCs required by BAAQMD rules also satisfy all CEQA mitigation requirements for ozone impacts consistent with mitigation required in other recent licensing cases. (Exhibit 300, p. 4.1-31.) Staff noted that BAAQMD rules do not require offsets for particulate matter or SO_x, which can contribute to formation of the sulfate fraction of fine particulate matter. (*Id*., p. 4.1-31 – 4.1-32.) Staff proposed that offsets also be required for these emissions and Mirant Marsh Landing has agreed to surrender the necessary ERCs. (Id.; Exhibit 42.) Staff examined the ERCs that will be surrendered for particulate emissions and confirmed that they mitigate both PM_{10} and $PM_{2.5}$ emissions. (Exhibit 300, p. 4.1-32.) Staff confirmed that these ERCs were created by shutting down a large combustion source, such as a boiler or a furnace fired on wood, gas, or oil, and these reductions of combustion-related PM_{10} provide substantial $PM_{2.5}$ benefits because nearly all combustion-related PM_{10} is also categorized as $PM_{2.5}$. (*Id.*) Staff therefore concluded that Mirant Marsh Landing's proposed PM_{10} offsets also offset $PM_{2.5}$. (Id.) We agree with this finding. We find that the requirement for providing overall total PM_{10} and SO_2 ERCs for emissions of PM_{10}/$PM_{2.5}$ plus SO_x emissions at an offset ratio of at least one-to-one satisfies all CEQA mitigation requirements for particulate matter impacts from the Marsh Landing Project.

10. Sufficiency of Offset Package. We find that the use of ERCs in this case is appropriate and is consistent with applicable federal and state emission control strategies. We find that the Marsh Landing Project's offset package complies with Public Resources Code, Section 25523(d)(2). We find that the proposed offset package fully mitigates all potential air quality impacts under CEQA. We find that the emission offset package proposed for the Marsh Landing Project, along with the proposed emissions controls, will mitigate all air quality impacts associated with the Marsh Landing Project to less than significant levels.

11. Cumulative Impacts. Staff analyzed the Marsh Landing Project's potential cumulative air quality impacts. (Exhibit 300, p. 4.1-33 – 4.1-37.) Staff noted that air districts attempt to reduce background criteria pollutant levels by adopting attainment plans, which are multi-faceted programmatic approaches to attainment. (*Id.*) Attainment plans typically include new source review requirements that provide offsets and use BACT, combined with more stringent emissions controls on existing sources. (*Id.)* Staff therefore evaluated: (1) BAAQMD projections for criteria pollutants and programmatic efforts to abate these pollutants; and (2) the Marsh Landing Project's potential "localized cumulative impacts" caused by direct emissions when combined with other local major emission sources. (*Id*.) Staff also conducted a cumulative impacts assessment for the Marsh Landing Project's GHG emissions, which is discussed in the **Greenhouse Gas Emissions** section above. Staff concluded that the Marsh Landing Project's compliance with BAAQMD rules and regulations and the mitigation recommended by Staff for offsetting $PM_{10}/PM_{2.5}$ and SO_x emissions (Condition of Certification AQ-SC7) ensure that the Marsh Landing Project's emissions of $PM_{10}/PM_{2.5}$ and precursor impacts will be consistent with the forecasted BAAQMD trends. (Id.) Staff also considered the combined air quality impacts of the Marsh Landing Project, neighboring electric generating facilities, and other reasonably foreseeable future projects. (Id.) The cumulative impacts analysis included the nearby proposed Oakley powerplant. (See RSA pp. 4.1 – 35, 4.2 – 18, 4.3 – 15-16, 4.6 – 14, 4.8 – 8-9, 4.13 – 18, 4.14 – 13.) Staff reviewed Mirant Marsh Landing's analysis of cumulative impacts in light of these sources, noting that the total impact was conservatively estimated by the maximum modeled impact plus existing maximum background pollutant levels. (*Id*.) Staff concluded that, compared with the impacts from the proposed Marsh Landing Project alone, maximum cumulative impacts caused by the sources in this assessment would be substantially higher for $PM_{10}/PM_{2.5}$ and NO_2 but will not create any new violation of the limiting standards. *(Id.,* p. 4.1-36 - 4.1-37.) Staff concluded that particulate matter emissions from the MLGS would be cumulatively considerable because they would contribute to existing violations of the PM_{10} and $PM_{2.5}$ ambient air quality standards, and that secondary impacts would also be cumulatively considerable for PM_{10}, $PM_{2.5}$, and ozone because emissions of particulate matter precursors (including SO_x) and ozone precursors (NO_x and VOC) would contribute to existing violations of the PM_{10}, $PM_{2.5}$, and ozone standards. (Id.) Staff therefore proposed mitigation that will offset all of the Marsh Landing Project's emissions of nonattainment pollutants and their precursors at a minimum ratio of one-to-one. (Id.) We find that Staff's proposed mitigation, which is adopted below, is adequate to reduce all impacts from operation of the Marsh Landing Project, including potential cumulative impacts, to below the level of significance.

12. FDOC Conditions. On June 25, 2010, the BAAQMD issued an FDOC finding that the Marsh Landing Project will comply with all applicable

BAAQMD rules for operation. (Exhibit 301.) The FDOC conditions are included in the Conditions of Certification in the Revised Staff Assessment. (7/1/10 RT 16:3-14.) The record establishes that Staff independently evaluated the BAAQMD analysis and determined that it is accurate. (*Id.*) We find that the Energy Commission has properly considered the analysis and comments of the BAAQMD in an area in which the BAAQMD has demonstrated expertise and jurisdiction.

13. Compliance with LORS. Staff concluded that the Marsh Landing Project will comply with all applicable federal, state and BAAQMD LORS. (Exhibit 300, pp. 4.1-17 – 4.1-38.) The BAAQMD and Staff confirmed that Marsh Landing Project is not required to obtain a Prevention of Significant Deterioration (PSD) permit because it is not a new major source or a major modification to an existing major source. (*Id.*; Exhibit 301.) We find that the Marsh Landing Project complies with all applicable federal, state and BAAQMD LORS.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS relating to air quality.

2. The Conditions of Certification adopted below ensure that the Marsh Landing Project will not result in any significant direct, indirect, or cumulative adverse impacts to air quality, or cause or contribute to violations of air quality standards.

3. We adopt the Conditions of Certification that are specified in the Air Quality section of the Revised Staff Assessment and identified as **AQ-SC1** through **AQ-SC9** and **AQ-1** through **AQ-40**.

C. PUBLIC HEALTH

The Energy Commission's public health analysis supplements its analysis of air quality impacts and considers the potential public health effects of a power plant project's emissions of toxic air contaminants. Our public health analysis considers whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.

Staff analyzed the potential public health risks from the toxic air pollutants associated with construction and operation of the Marsh Landing Project. Staff concluded that the Marsh Landing Project will not result in any significant adverse cancer or short-term or long-term adverse health effects. (Exhibit 300, pp. 4.7-1 – 4.7-13.) The toxic pollutants, also referred to herein as noncriteria pollutants) that Staff considered are pollutants for which there are no established air quality standards. (*Id.*, p. 4.7-1.) The **Air Quality** section of our Decision discusses the potential for significant public health impacts from emissions of pollutants for which there are specific ambient air quality standards (referred to as criteria pollutants).

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Criteria Pollutants. Construction and operation of the Marsh Landing Project will result in the release of criteria and noncriteria pollutants. As specified in the **Air Quality** section of our Decision, the Marsh Landing Project's emissions of criteria pollutants will be mitigated to levels that are consistent with applicable standards that ensure adequate protection of public health.

2. Noncriteria Pollutants – Health Risk Assessment. Staff and Mirant Marsh Landing conducted a health risk assessment to determine whether people could be exposed to the Marsh Landing Project's emissions of noncriteria pollutants at unhealthy levels. (Exhibit 300, p. 4.7-2.) A screening level risk assessment was prepared that overestimated potential public health impacts from exposure to the Marsh Landing Project emissions. *(Id.,* p. 4.7-3.) This was done to assess worst-case public health risks. (*Id*.) The risk assessment evaluated noncriteria pollutants in three categories of potential health impacts: acute (short-term) health effects; chronic (long-term) noncancer effects; and cancer risk (also long-term). (*Id*.) Staff used the hazard index method, which is accepted and used by state regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects. A similar method is used for assessing the significance of potential carcinogenic effects. (*Id*., pp., 4.7-4 – 4.7-5.)

Staff also assessed the health effects of exposure to toxic emissions by considering the impacts on the maximally exposed individual. (*Id.)* This individual is the person hypothetically exposed to project emissions at a location where the highest ambient impacts were calculated using worst-case assumptions. (*Id.*) If the potential risk to this individual is below established levels of significance, Staff considers the potential risk to be less than significant everywhere else in the project area. (*Id.)* We find that the potential public health impacts from the Marsh Landing Project's emissions of non-criteria pollutants have been adequately assessed and that Staff's analysis supports our findings and conclusions herein.

3. Construction Impacts – Dust. Staff analyzed the potential health impacts of the Marsh Landing Project's emissions of noncriteria pollutants during the construction phase, which include those from human exposure to the windblown dust from site excavation and grading, demolition, and emissions from construction-related equipment. (Exhibit 300, p. 4.7-8.) The dust-related impacts may result from exposure to the dust itself as PM_{10}, or $PM_{2.5}$, or exposure to any toxic contaminants that might be adsorbed on to the dust particles. *(Id.)* Staff also examined potential safety concerns for workers and the off-site public due to exposure to constituents of concern known to exist at the Marsh Landing Project site. (*Id.)* The results of this analysis are discussed in the **Waste Management** section of this Decision, which adopts measures for ensuring safe handling of those constituents. Staff confirmed that its Air Quality Conditions of Certification are adequate to minimize construction-related fugitive dust as required by BAAQMD Regulation 6. (*Id.*) We find that exposure to fugitive dust due to excavation and construction activities will be mitigated to insignificant levels by implementing measures to reduce dust protection and dispersal. With the Conditions of Certification adopted in the **Air Quality** and **Waste Management** sections of this Decision, potential construction-related adverse health effects from fugitive dust will be mitigated to insignificant levels.

4. Construction Impacts – Diesel-Fueled Equipment. Staff also examined potential health impacts from exhaust from diesel-fueled construction and other equipment. (Exhibit 300, p. 4.7-9.) These emissions could add to the carcinogenic risk addressed in Staff's health risk analysis. (*Id.*) Staff confirmed that its Air Quality Conditions of Certification are adequate to minimize this construction-related cancer risk. (Id.) We find that exposure to diesel particulate emissions from construction equipment is short-term and will not result in long-term carcinogenic or non-cancer effects. We find that exposure to construction-related diesel particulates will be mitigated to the extent feasible with the Conditions of Certification specified in the **Air Quality** section of this Decision. With those Conditions of Certification, potential construction-related adverse health effects from diesel emissions will be mitigated to insignificant levels.

5. Operational Impacts. Staff concluded that the main health risk from operation of the MLGS is associated with emissions from its four natural gas-fired CTGs and two fuel gas heaters. (Exhibit 300, p. 4.7-9.) Staff reviewed the results of Mirant Marsh Landing's screening-level health risk assessment, which was conducted according to applicable guidelines. *(Id.)* As shown in the Revised Staff Assessment in Public Health Table 2, the chronic hazard index for the maximally exposed individual is 0.001 while the maximum hazard index for acute effects is 0.052. (*Id.*, p. 4.7-10 – 4.7-11.) These values are well below the significance criterion of 1.0, demonstrating that noncriteria pollutants from the MLGS will not pose a significant risk of chronic or acute noncancer health effects anywhere in the Marsh Landing Project area. (*Id.*) Staff also found that the cancer risk to the maximally exposed individual from normal project operation is 0.026 in one million, which is well below the significance criterion of 10 in one million. (*Id.)* Staff concluded that the cancer risk from routine operations of the MLGS will be less than significant for all individuals in the Marsh Landing Project area. (*Id.*) Staff also confirmed that even at the maximum impact locations for the proposed MLGS, Staff found that operation of the MLGS will not result in any significant changes in the lifetime risk to any person. (*Id.)* This reflects the calculated incremental cancer risk of only 0.026 in one million, which Staff regards as not potentially contributing significantly to the average lifetime individual cancer risk of 330,000 in one million. (*Id.*) The worst-case long-term noncancer health impact from operation of the MLGS (represented as a chronic hazard index of 0.001) is well below Staff's significance level of 1.0 at the location of maximum impact. (*Id.)* This shows that operation of the MLGS will not have a significant contribution to the incidence of the area's noncancer health symptoms from cumulative toxic exposures. (*Id.*) We find that application of the hazard index method establishes that emissions of noncriteria pollutants from the Marsh Landing Project during operation will not cause acute or chronic adverse public health effects. We also find that the maximum non-cancer and the maximum cancer risks associated with the Marsh Landing Project are substantially below the significance thresholds commonly accepted for risk analysis purposes.

6. Cumulative Impacts. Staff considered potential cumulative impacts from non-criteria pollutants in accordance with the provisions of CEQA. (Exhibit 300, p. 4.7-11 – 4.7-12.) Staff evaluated the potential cumulative impacts from the proposed Marsh Landing Project, the existing CCPP Units 6 and 7, and Units 1 and 2 and the natural gas preheater of the existing GGS to estimate the cumulative impacts of emissions from identifiable pollutant sources in the area of potentially significant impacts. (*Id.)* Staff presented these cumulative impacts in terms of potential cancer risks and indices of acute and chronic health effects. (*Id.)* Staff calculated the maximum cancer risk as 0.298 in one million with indices of 0.095 and 0.018 for acute and chronic impacts, respectively. (*Id.*) Staff concluded that these health risk values are significantly below levels of significance

as established by Staff and the BAAQMD. (Id.) Because the Marsh Landing Project's contributions to heath risks are well below the significance level, we find that the Marsh Landing Project will not contribute to a significant cumulative adverse health impact.

7. Adequacy of Assessment. We find that the Marsh Landing Project's emissions of noncriteria pollutants or toxic air contaminants have been adequately assessed according to procedures developed by state and federal regulatory agencies to evaluate potential health effects. We find that emissions from construction and operation of the Marsh Landing Project will not have a significant adverse impact on the public health of the surrounding population.

8. Environmental Justice. Staff evaluated census figures and determined that the minority population in the 6-mile area surrounding the Marsh Landing Project site is less than 50 percent, but found that but there are some locations in the area with minority populations of more than 50 percent. (Exhibit 300, p. 4.7-6.) Staff evaluated the impacts of the Marsh Landing Project for potential environmental justice concerns. (*Id.*, p. 4.7-12.) Staff determined that the toxic air emissions from construction and operation of the Marsh Landing Project are at levels that do not require mitigation beyond the specific emission control measures noted above. Staff found that because potential impacts will be at insignificant levels, no environmental justice issues will result from the Marsh Landing Project. (*Id.*) We find that because the Marsh Landing Project will not result in any significant adverse impacts, it does not present environmental justice concerns.

CONCLUSIONS OF LAW

1. Emissions from the Marsh Landing Project do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. The Marsh Landing Project complies with the applicable LORS specified in the Public Health section of the Revised Staff Assessment.

3. No Conditions of Certification are required for this topic area.

C. WORKER SAFETY/FIRE PROTECTION

This section focuses on whether the health and safety plans proposed for the Marsh Landing Project are in accordance with all applicable LORS and thus will be adequate to protect industrial workers. We also address the availability and adequacy of fire protection and emergency response services. Potential site contamination concerns and measures to protect workers are addressed in the **Waste Management** section of this Decision.

Staff analyzed worker safety and fire protection issues and concluded that, with Staff's proposed Conditions of Certification, which include a Project Construction Safety and Health Program and a Project Operations and Maintenance Safety and Health Program, the Marsh Landing Project will incorporate sufficient measures to ensure adequate levels of industrial safety and comply with applicable LORS. (Exhibit 300, p. 4.14-1.) Staff proposes Conditions of Certification to ensure that Mirant Marsh Landing's Construction Safety and Health Program and Operations and Maintenance Safety and Health Program will be reviewed by the appropriate agencies before implementation. (Id.)

Staff concluded that the Marsh Landing Project will not have significant impacts on local fire protection services. *(Id.)* The MLGS will be located in an area that is currently served by the local fire department and the fire risks at the MLGS do not pose significant added demands on local fire protection services. (*Id.*) Additionally, Staff confirmed that the Contra Costa County Hazmat Team located in Martinez is adequately equipped and staffed to respond to hazardous materials incidents at the MLGS with an adequate response time. *(Id.)*

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff examined the potential for impacts on the safety of workers during demolition, construction, and operation activities for the Marsh Landing Project. (Exhibit 300, p. 4.14-4.) To protect workers from job-related injuries and illnesses, Staff confirmed that Mirant Marsh Landing will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the Marsh Landing Project. (*Id.*, p. 4.14-5.) Prior to the start of demolition and site-preparation for the MLGS, detailed programs and plans will be provided to the CPM. (*Id.*, p. 4.14-6.) Staff outlines detailed requirements of LORS that dictate worker safety protections and confirms that the written plans

and programs to be submitted by Mirant Marsh Landing and reviewed by the CPM and other agencies will ensure compliance with applicable requirements. (*Id*., pp. 4.14-2 – 4.14-9.) We find that the requirements imposed in the Conditions of Certification that we adopt in this Decision are adequate to ensure compliance with worker safety and fire protection LORS, and will mitigate all potential adverse impacts to workers to below significant levels.

2. Construction Safety Supervisor. Staff recommended that Mirant Marsh Landing be required to designate and provide for a Construction Safety Supervisor. (Exhibit 300, pp. 4.14-9 -4.14-10.) This is specified in Staff's proposed Condition of Certification **WORKER SAFETY-3**. *(Id.)* We find that this requirement will help provide for a safe workplace during power plant construction.

3. Safety Monitor. Staff also recommended that the Energy Commission assign a professional Safety Monitor to be present on site to track compliance with CalOSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. (Exhibit 300, p. 4.14-11.) This requirement is included in Staff's proposed Condition of Certification **WORKER SAFETY-4**. (*Id.*) We find that this requirement will help ensure compliance with workplace safety requirements during the construction period.

4. Fire Hazards. Staff notes that during construction and operation of the Marsh Landing Project, there is the potential for fires to occur. (Exhibit 300, p. 4.14-11.) Staff found that compliance with all LORS will be adequate to assure protection from all fire hazards. (*Id.*) We adopt Staff's finding.

5. On-Site Fire Fighting Systems. Staff reviewed and evaluated the on-site fire-fighting systems proposed by Mirant Marsh Landing. The Marsh Landing Project will rely on both on-site fire protection systems and local fire protection services. (Exhibit 300, p. 4.14-11 – 4.14-12.) The on-site fire protection system provides the first line of defense for small fires. *(Id.)* In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the Contra Costa County Fire Protection District (CCCFPD). *(Id.)* During construction, the permanent fire protection system would be installed as soon as practical. Until then, portable fire extinguishers and small hose lines would be placed throughout the Marsh Landing Project site at appropriate intervals and periodically maintained. (*Id.*) Staff confirmed that a sufficient supply of firefighting water will be provided, and safety procedures and training will be implemented according to the guidelines of the Construction Fire Protection and Prevention Plan. (*Id*.) For operation, Staff confirmed that the Marsh Landing Project will meet the fire protection and suppression requirements of the California Fire Code and other applicable LORS. (*Id.*) Fire suppression elements in the Marsh Landing Project will include both fixed and portable fire extinguishing systems.

(Id.) The existing underground firewater loop will be extended to supply the hydrants and fixed suppression systems installed for the MLGS structures. (*Id.*) The same firewater source (San Joaquin River water) and pumps currently in use at the CCPP will maintain the water supply and pressure in the MLGS loop extension. (*Id.*) We find that the Marsh Landing Project will include adequate on-site fire protection and suppression systems as the first line of defense in the event of a fire.

6. Local Fire Protection Capabilities. Staff reviewed and evaluated the local fire department capabilities and response time and interviewed the local fire officials to determine if they are adequately trained, manned, and equipped to respond to the needs of the Marsh Landing Project. (Exhibit 300, p. 4.14-11.) The CCFPD will provide fire protection and emergency response services to the Marsh Landing Project. (*Id*.) We find that existing fire and emergency service resources are adequate to meet project needs.

7. Cumulative Impacts. Staff reviewed the potential for the construction and operation of the Marsh Landing Project combined with existing industrial facilities and expected new facilities to determine impacts on the fire and emergency service capabilities of the CCCFPD. (Exhibit 300, p. 4.14-13.) Staff confirmed that the CCCFPD is adequately staffed and equipped to respond to incidents and does not anticipate that the Marsh Landing Project will impact the CCCFPD. (*Id.)* Staff concluded that given the lack of unique fire hazards associated with a modern natural gas-fired power plant, the Marsh Landing Project will not have any significant incremental or cumulative burden on the local fire department's ability to respond to a fire or medical emergency. (*Id*.) We find that the Marsh Landing Project will not create cumulative adverse impacts upon the fire and emergency response capabilities of the CCFPD.

8. Automatic Defibrillator. Staff conducted a statewide survey to determine the frequency of Emergency Medical Services (EMS) response and off-site fire-fighter response for natural gas-fired power plants in California. (Exhibit 400, p. 4.14-12.) The purpose was to determine what impact, if any, power plants may have on local emergency services. (*Id.*) Staff concluded that incidents at power plants that require fire or EMS response are infrequent and represent an insignificant impact on the local fire departments, except for rare instances in which a rural fire department has mostly volunteer fire-fighting staff. (*Id.*) Staff determined, however, that the potential for work related and non work related heart attacks exists at power plants. (*Id.)* Staff believes that the quickest medical intervention can be achieved with the use of an on-site automatic external defibrillator (AED). (*Id.*) Staff therefore proposes to require that a portable AED be located at the MLGS site, that all power plant employees on site during operations be trained in its use, and that a representative number of workers on site during demolition, construction, and commissioning also be trained in its use. (*Id.)* We find that this requirement helps provide

immediate response in the event of a medical emergency and adopt Staff's proposed Condition of Certification below.

9. Compliance with LORS. Staff confirmed that worker safety issues are thoroughly addressed by regulations of the California Occupational Safety and Health Administration (CalOSHA.) (Exhibit 300, p. 4.14-4.) Staff concluded that if all applicable LORS are followed, workers at the Marsh Landing Project will be adequately protected. Thus, the standard for Staff's review and determination of significant impacts on workers is whether or not the applicant has demonstrated adequate knowledge about and dedication to implementing all pertinent and relevant Cal/OSHA standards. (*Id.*) Staff confirmed that Mirant Marsh Landing has demonstrated such knowledge. (*Id*., p. 4.14-1.) We find that compliance with applicable LORS ensures that workers at the Marsh Landing Project will be adequately protected from health and safety hazards.

10. Soil Contamination. If soil contamination is discovered during construction, Conditions of Certification contained in the **Waste Management** section of this Decision will assure adequate mitigation of potential risks to workers and compliance with applicable LORS.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Marsh Landing Project will not create significant health and safety impacts to workers and complies with all applicable LORS listed in the Worker Safety/Fire Protection section of the Revised Staff Assessment.

2. The Conditions of Certification adopted below ensure that the Marsh Landing Project conforms with all applicable LORS on industrial worker health and safety.

3. We adopt the Conditions of Certification that are specified in the Worker Safety/Fire Protection section of the Revised Staff Assessment and identified as **WORKER SAFETY-1** through **WORKER SAFETY-5**.

D. HAZARDOUS MATERIALS MANAGEMENT

This section considers whether the Marsh Landing Project will create significant adverse impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials.

Staff evaluated the Marsh Landing Project and concluded that, with the adoption of Staff's proposed Conditions of Certification, use of hazardous materials at the MLGS site will not present a significant adverse impact to the public and will comply with applicable LORS. (Exhibit 300, p. 4.4-1.) Mirant Marsh Landing will be required to develop a risk management plan and Staff's proposed Conditions of Certification require that plan to be submitted for concurrent review by the Contra Costa County Health Services Department, Hazardous Materials Program (CCCHSD-HMP) and the CPM, who must approve the plan before delivery of any hazardous materials to the MLGS site. (*Id.)* Staff proposed additional Conditions of Certification to ensure adequate protections for the transportation, storage, and use of aqueous ammonia. (*Id*.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff reviewed and assessed the potential for the Marsh Landing Project's transportation, handling, and use of hazardous materials to have a significant adverse effect on the surrounding community. (Exhibit 300, p. 4.4-6.) Staff evaluated all chemicals proposed for use at the Marsh Landing Project site and natural gas. (*Id*.) Staff also evaluated Mirant Marsh Landing's proposed engineering and administrative controls concerning hazardous materials storage. (*Id*.) Staff addressed the potential impacts on all members of the population including the young, the elderly, and people with existing medical conditions that may make them more sensitive to the adverse effects of hazardous materials. (*Id.)* Staff found that with Staff's proposed Conditions of Certification the Marsh Landing Project's use, storage and handling of hazardous materials will pose no significant impact to the public. (*Id*., p. 4.4-1.) We agree and adopt Staff's finding. We also find that Staff adequately considered the potential adverse impacts associated with the Marsh Landing Project's transportation, storage, handling, and use of hazardous materials and that Staff's analysis supports our findings and conclusions herein.
2. Engineering and Administrative Controls. Staff reviewed Mirant Marsh Landing's proposed engineering and administrative controls concerning hazardous materials usage. (Exhibit 300, p. 4.4-11.) Engineering controls are the physical or mechanical systems, such as storage tanks or

automatic shut-off valves, that can prevent the spill of hazardous material from occurring, or limit the spill to a small amount or confine it to a small area. *(Id.)* Administrative controls are the rules and procedures that workers at the facility must follow that will help prevent accidents or keep them small if they do occur. (*Id.*) We find that the engineering and administrative controls proposed for the Marsh Landing Project are adequate to protect workers and the off-site public.

3. Small Quantity Hazardous Materials. Staff determined that that some hazardous materials, although present at the Marsh Landing Project site, will pose a minimal potential for off-site impacts since they will be stored in a solid form or in smaller quantities, have low mobility, or have low levels of toxicity. These materials include paint, paint thinner, flushing and cleaning fluids, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, lubricants, antifreeze, and pesticides. (Exhibit 300, p. 4.4-7.) Staff also concluded that petroleum hydrocarbon-based motor fuels, mineral oil, lube oil, and diesel fuel are all very low volatility and represent limited off-site hazards even in larger quantities. (Id.) We find that Staff appropriately eliminated these hazardous materials from further consideration. We find that potential impacts from these hazardous substances are not significant because quantities will be limited and appropriate storage will be maintained in accordance with applicable LORS.

4. Demolition Wastes. Staff considered the hazardous waste that will be generated during demolition of existing structures, including asbestos-containing materials. (Exhibit 300, p. 4.4-7.) These are discussed in the **Waste Management** section of this Decision. Staff concluded that handling of hazardous materials during demolition and construction will follow administrative and engineering controls designed to minimize environmental impacts. (Id.) All construction employees will be trained in the proper procedures for handling hazardous materials and specific mitigation measures will be implemented during fueling and maintenance of construction equipment. (Id.) We find that any adverse impacts from these materials will be less than significant.

5. Natural Gas. Staff determined that the major public health and safety dangers associated with hazardous materials at the Marsh Landing Project are the accidental release of aqueous ammonia and the potential for fire and explosion from natural gas. (Exhibit 300, p. 4.4-8.) For natural gas, Staff concluded that potential impacts will be minimized because natural gas will not be stored on-site. (Id.) Natural gas will be delivered via a new gas pipeline that will connect with PG&E's existing interstate gas transmission system, located 2,100 feet from the MLGS site. (*Id.*) The risk of fire or explosion will be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. (Id.) The safety management plan proposed by Mirant Marsh Landing will address the handling and use

of natural gas and significantly reduces the potential for equipment failure due to improper maintenance or human error. *(Id.)* We find that existing LORS are sufficient to ensure minimal risks of pipeline failure. We find that the risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

6. Aqueous Ammonia. Staff conducted a thorough analysis of the Marsh Landing Project's use, storage, and transportation of aqueous ammonia. (Exhibit 300, pp. 4.4-9 – 4.4-10.) Aqueous ammonia will be used to control the emission of oxides of nitrogen (NO_x) from the combustion of natural gas at the MLGS. (*Id.*) Staff concluded that aqueous ammonia is the only hazardous material proposed for use at the Marsh Landing Project that may pose the risk of off-site impact. (*Id.*) Staff confirmed, however, that the Marsh Landing Project's use of aqueous ammonia poses far less risk than the use of the more hazardous anhydrous ammonia (ammonia that is not diluted with water). (*Id.)* Staff conducted an analysis of the potential impacts associated with an accidental release of aqueous ammonia and evaluated the applicant's off-site consequence analysis, which modeled results for worst-case and alternative accidental releases of aqueous ammonia. (*Id.)* These analyses showed that concentrations exceeding the Energy Commission's level of significance of 75 ppm would extend slightly beyond the MLGS fence line to the north and west of the MLGS site for both the worst-case and alternative scenarios. *(Id.)* The area immediately north of the MLGS site is within the CCPP boundary and the area immediately west of the MLGS site consists of vacant industrial space that does not contain any public receptors. (*Id.*) Staff conducted a hazardous materials and site security site visit at the existing CCPP site on September 30, 2009. Staff reviewed the existing aqueous ammonia storage and piping systems and spill prevention and control measures and found them to be more than adequate for the Marsh Landing Project. (*Id.)* Staff also concluded that the potential for accidents resulting in the release of hazardous materials is greatly reduced through implementation of a safety management program that includes engineering and administrative controls. (*Id.*) We find that no off-site public will experience a significant risk of an adverse health effect should an accidental release of aqueous ammonia occur due to tank failure or transfer activities at the Marsh Landing Project. We find that a concentration of 75 ppm or less of aqueous ammonia will not cause significant impacts. We find that a worst-case catastrophic release of aqueous ammonia from the MLGS will not pose a hazard to the public, nor result in offsite concentrations of greater than 75 ppm in populated areas or in areas with sensitive receptors. We also find that compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of aqueous ammonia, as reflected in the Conditions of Certification adopted below, will reduce potential risks of accidental release to insignificant levels.

7. Transportation. Staff evaluated potential impacts associated with the transportation of hazardous materials for the Marsh Landing Project. (Exhibit 300, pp. 4.4-12 – 4.4-14.) Hazardous materials including aqueous ammonia will be transported to the facility by tanker truck. Staff focused on the transport of aqueous ammonia as presenting the predominant risk associated with hazardous materials transport. *(Id.)* Staff reviewed the proposed transportation routes for hazardous materials delivery and evaluated the risk of an accidental transportation release in the Marsh Landing Project area. (*Id.*) Staff relied on the extensive regulatory program that applies to the shipment of hazardous materials on California highways to ensure safe handling in general transportation. (*Id.)* Staff proposed Condition of Certification **HAZ-5** to ensure that, regardless of which vendor supplies the aqueous ammonia, delivery will be made in a tanker that meets or exceeds the specifications provided by applicable LORS. (*Id*.) Staff also analyzed the potential for an accident involving the transportation of hazardous materials and concluded that the risk of a transportation accident is insignificant. (*Id*.) We find that the risk of exposure to significant concentrations of aqueous ammonia during transportation to the MLGS does not present a significant adverse impact to the public. We find that Staff's analysis of the transportation of aqueous ammonia to the MLGS demonstrates that the risk of accident and exposure is less than significant.

8. Earthquake. Staff analyzed the potential for an earthquake to cause the failure of a hazardous materials storage tank. (Exhibit 300, pp. 4.4-14 – 4.4-15.) Staff conducted an analysis of the codes and standards that must be followed when designing and building storage tanks and containment areas to withstand a large earthquake, and the results from recent earthquakes on the West Coast. (*Id.*) Based on that analysis, Staff found that tank failures during seismic events are not probable and do not present a significant risk to the public. (*Id*.) We adopt Staff's finding.

9. Site Security. Staff examined the proposed site security measures to prevent unauthorized access to the MLGS site. (Exhibit 300, p. 4.4-15 – 4.4-16.) To ensure that neither the Marsh Landing Project nor a shipment of hazardous material is the target of unauthorized access, Staff proposes Conditions of Certification **HAZ-7** and **HAZ-8** to address both construction security and operation security plans. (Id.) We find that Staff's proposed Conditions of Certification provide a level of security that is sufficient to protect the Marsh Landing Project and the public from exposure to hazardous materials.

10. Cumulative Impacts. Staff also analyzed the potential for the existence of cumulative impacts due to the use, storage, handling or transportation of hazardous materials. (Exhibit 300, pp. 4.4-16 – 4.4-19.) A significant cumulative hazardous materials impact is defined as the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact where the release

of one hazardous material alone would not cause a significant impact. *(Id.)* Staff considered existing locations that use or store gaseous or liquid hazardous materials and locations where such facilities might be built in the future. Staff believes that while cumulative impacts are theoretically possible, they are not probable because of the many safeguards implemented to both prevent and control an uncontrolled release. (*Id.)* The chances of one uncontrolled release occurring are remote. The chance of two or more occurring simultaneously, with resulting airborne plumes mingling to create a significant impact, are even more remote. (*Id.*) Staff concluded that the Marsh Landing Project, with Staff's proposed Conditions of Certification, poses a less than significant risk of accidental release that could result in off-site impacts. (*Id.*) We find that the Marsh Landing Project will not contribute to a significant hazardous materials-related cumulative adverse impact.

11. Compliance with LORS. Staff found that construction and operation of the Marsh Landing Project will comply with all applicable LORS regarding long-term and short-term project impacts in the area of hazardous materials management. (Exhibit 300, p. 4.4-21.) We adopt Staff's finding.

12. Conclusion. Implementation of the mitigation measures contained in the Conditions of Certification adopted in this Decision will ensure that the Marsh Landing Project will not cause significant adverse impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials. We find that the Marsh Landing Project will comply with all applicable LORS related to hazardous materials management as identified in the Hazardous Materials section of the Revised Staff Assessment.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The storage, use, and transportation of hazardous materials associated with the Marsh Landing Project will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

2. The Conditions of Certification adopted below ensure that the Marsh Landing Project will not cause significant adverse impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

3. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS related to hazardous materials management as identified in the Hazardous Materials section of the Revised Staff Assessment.

4. We adopt the Conditions of Certification that are specified in the Hazardous Materials section of the Revised Staff Assessment and identified as **HAZ-1** through **HAZ-8**.

E. WASTE MANAGEMENT

The Marsh Landing Project will generate nonhazardous and hazardous wastes during construction and operation. Nonhazardous wastes are degradable or inert materials that do not contain concentrations of soluble pollutants with the potential to degrade water quality and are therefore eligible for disposal at Class II or III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.) Hazardous wastes are materials that exceed DTSC's criteria for toxicity, corrosivity, ignitability, or reactivity. State law requires hazardous waste generators to obtain U.S. EPA identification numbers and contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

Staff analyzed the Marsh Landing Project's plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of nonhazardous and hazardous wastes. Staff concluded that management of the wastes generated during demolition, construction and operation of the Marsh Landing Project will not result in any significant adverse impacts and will comply with applicable waste management LORS if Staff's proposed Conditions of Certification **WASTE-1** through **WASTE-10** are implemented. (Exhibit 300, 4.13-1.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff's Waste Management analysis addressed existing site conditions and the potential for contamination associated with prior activities on or near the MLGS site, and potential impacts from the generation and management of wastes during Marsh Landing Project construction and operation. (Exhibit 300, pp. 4.13-1 – 4.13-25.) We find that Staff's analysis is adequate to support our findings and conclusions herein.

2. Environmental Site Assessments. Staff reviewed two Phase I Environmental Site Assessments prepared for the Marsh Landing Project. (Exhibit 300, pp. 4.13-10 – 4.13-13.) The Phase I ESAs were conducted to identify conditions indicative of releases and threatened releases of hazardous substances at the MLGS site and related linear routes and to identify any areas known to be contaminated (or a source of contamination). *(Id.)* Staff also considered results from previous environmental assessments, which were discussed in the Phase I ESAs. (Id.) The Phase I ESAs and prior environmental assessments identified a number of Recognized Environmental Conditions (RECs) and areas of concern at the MLGS site associated with past operation of the CCPP and industrial activities at surrounding property. (Id.) Staff reviewed the

Phase I ESAs and supporting documentation and consulted with DTSC staff. (*Id.*) DTSC is the state agency with oversight authority for site assessment and corrective action/remediation at the entire CCPP property, including the portion that will be the MLGS site. (*Id.)* Staff confirmed that some areas of the MLGS site cannot be fully assessed and remediated until after demolition of the existing aboveground tanks and structures. (*Id.)* At Staff's request, Mirant Marsh Landing submitted the results of additional investigations for the MLGS site. (*Id.)* Those investigations included groundwater and soil sampling and analysis at the MLGS site and adjacent property, and a short form Human Health Risk Assessment (HRA) based upon existing data and new data obtained from the additional investigations. *(Id.)* Staff reviewed the resulting Focused Site Investigation Report and Human Health Risk Assessment and confirmed that the site investigation and HRA were acceptable and demonstrated that the MLGS site has been adequately characterized so that the data can be used in a HRA. (*Id*.) Staff also concluded that the HRA was both transparent and verifiable, it adequately and accurately depicts the upper-bound risk for the receptors assessed, it was conducted according to California Environmental Protection Agency (Cal EPA) standards and methods, and therefore can be used to show that risks to workers and the off-site public will be below a level of significance. (*Id.*) We agree and adopt Staff's findings.

3. Supplemental Investigations. Mirant Marsh Landing and Staff have confirmed that the former owner of the site, PG&E, is working with DTSC to achieve regulatory closure for the MLGS site. (Exhibit 300, pp. 4.13-10 – 4.13-13; Exhibit 42.) Supplemental investigations thus are ongoing to delineate the extent of constituents of concern that were identified in previous investigations. This is being done to support a potential remedial plan for the MLGS site, as necessary. (*Id.*) Mirant Marsh Landing submitted the results of these supplemental investigations to Staff for review, but Staff confirmed that the investigations of the MLGS site that were analyzed in the Revised Staff Assessment were sufficient to support the preparation of Conditions of Certification that will protect workers and the off-site public. (*Id.)* Staff proposes Conditions of Certification **WASTE-3** and **WASTE-4** to address any additional soil contamination that may be encountered during project construction. (*Id.,* p. 3.13-14.) **WASTE-3** requires an experienced and qualified Professional Engineer or Professional Geologist to be available for consultation in the event contaminated soil is encountered. (*Id.)* If contaminated soil is identified, **WASTE-4** requires the Professional Engineer or Professional Geologist to inspect the site, determine what is required to characterize the nature and extent of contamination, and provide a report to the CPM and DTSC with findings and recommended actions. (*Id.*) Staff also proposed Condition of Certification **WASTE-10**, which requires all DTSC-ordered remedial work at the MLGS site to be completed prior to the commencement of soil excavation or grading in those affected areas. (*Id.*, 4.13-1.) We find that

Condition of Certification **WASTE-10**, along with Staff's other proposed Conditions of Certification for Waste Management, ensure that the Marsh Landing Project will comply with applicable LORS and also ensure that workers and the off-site public will be adequately protected during construction of the Marsh Landing Project.

4. Project-Related Demolition. Staff analyzed potential impacts associated with demolition of the buildings and structures that will be present on the MLGS site when Mirant Marsh Landing acquires site control. (Exhibit 300, pp. 4.13-13 – 4.13-14.) Staff's estimates of waste to be generated during project demolition are likely overestimated because they include waste to be generated by demolition of five above ground storage tanks. Mirant Delta is removing those tanks prior to conveying the MLGS site to Mirant Marsh Landing. As a result, Marsh Landing Project demolition may result in smaller quantities of demolition wastes than estimated by Staff. *(Id.)* Staff confirmed that all demolition wastes will be managed and recycled or disposed of in a manner to comply with applicable regulatory requirements. (*Id.)* Staff proposed Condition of Certification WASTE-5 to reinforce compliance with applicable recycling requirements. We find that with implementation of staff's proposed Conditions of Certification, management and disposal of project-related demolition wastes will have a less than significant impact on the environment and will comply with applicable LORS.

5. Construction Wastes. Staff confirmed that the project owner will be required to obtain a unique hazardous waste generator identification number for the MLGS site prior to starting construction, as also specified in Staff's proposed Condition of Certification **WASTE-6**. (Exhibit 300, p. 4.13-15.) Staff reviewed the waste management methods described by Mirant Marsh Landing and concluded that construction wastes will be managed in accordance with all applicable LORS. (*Id.*) Absent any unusual circumstances, staff considers project compliance with LORS to be sufficient to ensure that no significant impacts would occur as a result of project waste management activities. (*Id.*) We agree and adopt Staff's finding.

6. Operation Wastes. Staff determined that the four tons of hazardous wastes that likely will be generated each year during the operation of MLGS project will be nominal, with source reduction and recycling of wastes implemented whenever possible. (Exhibit 300, pp. 4.13-16 – 4.13-17.) The hazardous wastes will be temporarily stored on site, transported off site by licensed hazardous waste haulers, and recycled or disposed of at authorized disposal facilities in accordance with established standards applicable to generators of hazardous waste (*Id*., citing Title 22, CCR, §66262.10 et seq.). In addition to the routinely generated waste, once every seven to ten years, the MLGS will generate up to 129 tons of spent SCR and carbon monoxide catalysts that would likely be recycled by the catalyst manufacturer. (*Id*., p. 4.13-17.) This waste will be removed by

licensed contractors and returned to the manufacturer or properly disposed of at a Class I landfill. (*Id.*) To facilitate proper management of project operation wastes, Staff proposes Condition of Certification **WASTE-7** requiring the project owner to develop and implement an Operations Waste Management Plan. (*Id.*) To ensure proper cleanup and management of any contaminated soils or waste materials generated from hazardous materials spills, staff proposes Condition of Certification **WASTE-8** requiring the project owner to document, clean up, and properly manage and dispose of wastes from any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements. (*Id.)* Should any operations waste management-related enforcement action be taken or initiated by a regulatory agency, the project owner also will be required by proposed Condition of Certification **WASTE-9** to notify the CPM of the impending action and provide a description and timeline for steps to be taken to address the action. (*Id.)* We find that these Conditions of Certification will reduce all potential adverse impacts associated with waste management during operation to below significant levels.

7. Off-Site Disposal Sites. Staff also reviewed the capacity available at off-site treatment and disposal sites to determine whether the Marsh Landing Project's waste will have a significant impact on the volume of waste a facility is permitted to accept. (Exhibit 300, pp. 4.13-17 – 4.13-18.) Staff concluded that the total amount of nonhazardous waste generated from construction and operation will contribute less than 0.01% of the available landfill capacity. (*Id.*) Staff also analyzed hazardous wastes to be generated during construction and operation. (*Id.*) Any hazardous wastes that cannot be recycled would be transported off site to a permitted TSDF or Class I landfill. (*Id.)* Given the availability of recycling facilities for high volume hazardous wastes such as used oil and solvents, along with the remaining capacity available at Class I disposal facilities, Staff concluded that the volume of hazardous waste from the Marsh Landing Project requiring off-site disposal will be less than 0.01% of remaining disposal capacity and will not have a significant impact on the capacity or remaining life of the Class I waste facilities. *(Id.)* We find that the disposal of project generated wastes will not have a significant adverse impact on existing waste disposal facilities.

8. Cumulative Impacts. Staff analyzed the potential for the Marsh Landing Project to create significant adverse cumulative impacts due to wastes. (Exhibit 300, p. 4.13-18.) Staff analyzed potential cumulative impacts from the Marsh Landing Project and several existing and planned projects in the area. *(Id.)* Staff concluded that Marsh Landing Project wastes will be generated in modest quantities, waste recycling will be employed wherever feasible, and sufficient capacity is available at several treatment and disposal facilities to handle the volumes of wastes generated by the Marsh Landing Project and the other existing and proposed power plant facilities. (*Id.)* We find that wastes generated by the Marsh Landing

Project will not result in significant cumulative adverse waste management impacts.

9. Compliance with LORS. Staff found that the Marsh Landing Project will comply with all applicable LORS regulating the management of hazardous and nonhazardous wastes generated during project demolition, construction and operation. (Exhibit 300, p. 4.13-18.) We adopt Staff's finding.

10. Environmental Justice. Staff concluded that construction and operation of the Marsh Landing Project will not result in any waste management-related environmental justice issues. While the Socioeconomics section of the Revised Staff Assessment presents census information identifying minority populations within a six mile radius of the Marsh Landing Project, Staff proposed Waste Management Conditions of Certification that will reduce any risks associated with management of project wastes to a less than significant level. We find that minority or low income populations in the vicinity of the Marsh Landing Project will not experience disproportionate significant adverse impacts from Marsh Landing Project waste generation and management.

11. Liquid Waste. We find that liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the Soil and Water Resources section of the Revised Staff Assessment and adopted below.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Conditions of Certification adopted below reduce potential impacts to insignificant levels and ensure that Marsh Landing Project wastes will be handled in an environmentally safe manner.

2. The management of Marsh Landing Project wastes complies with all applicable LORS related to waste management as identified in the Waste Management section of the Revised Staff Assessment.

3. We adopt the Conditions of Certification that are specified in the Waste Management section of the Revised Staff Assessment and identified as **WASTE-1** through **WASTE-10**.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

In its power plant licensing process, the Energy Commission considers potential impacts on biological resources, including state and federally listed species, species of special concern, wetlands, and other resources of critical biological interest such as unique habitats.

Staff conducted a detailed analysis of potential biological impacts associated with the Marsh Landing Project. (Exhibit 300, pp. 4.2-1 – 4.2-32.) The MLGS will occupy approximately 27 acres within the existing CCPP site. Staff confirmed that potential impacts to biological resources largely will be avoided because the MLGS site, construction laydown areas, and routes of proposed linear facilities (*i.e.*, electric transmission, water, wastewater discharge, and natural gas) are highly disturbed or developed and surrounded by heavy industrial uses including the CCPP and GGS. (*Id.*, p. 4.2-1.) The potential for the Marsh Landing Project area to support sensitive biological resources is low and the immediate vicinity supports wildlife that is likely habituated to frequent disturbance. (*Id.*) Staff concluded that with implementation of Staff's proposed Conditions of Certification, any potential adverse direct, indirect and cumulative impacts to biological resources will be less than significant. *(Id.)* Staff also concluded that the Marsh Landing Project will be consistent with applicable LORS pertaining to the protection of biological resources and that with implementation of Staff's proposed Conditions of Certification the Marsh Landing Project will not cause a significant adverse impact under CEQA. *(Id.)*

Mirant Marsh Landing has agreed to accept all of Staff's proposed Conditions of Certification for Biological Resources. (Exhibit 42, p. 20-21.) Mirant Marsh Landing disagrees, however, with Staff's conclusion regarding the potential for the Marsh Landing Project's nitrogen emissions to create a significant indirect adverse impact to listed species at the Antioch Dunes National Wildlife Refuge (NWR). The Antioch Dunes NWR contains the last known populations of the federally endangered Lange's metalmark butterfly, federally and state endangered Antioch Dunes evening primrose, and federally and state endangered Contra Costa wallflower. Staff believes that noxious weed invasion and the resultant cascading effects (*e.g.*, competition, wildfire) have an effect on these species and is concerned that noxious weed proliferation may be exacerbated by nitrogen deposition from emissions at power plants such as the MLGS. Staff concluded that because the Antioch Dunes NWR is already experiencing

habitat degradation likely caused by nitrogen fertilization, additional nitrogen deposition from MLGS would lead to a significant impact. (Exhibit 300, pp. 4.2-15 – 4.2-18.)

Mirant Marsh Landing disagrees with this conclusion. Mirant Marsh Landing has explained that its analysis shows that the MLGS nitrogen deposition rates at Antioch Dunes NWR are extremely small (between 0.03 and 0.045 kg/ha/yr). (Exhibit 42, pp. 20-21.) A significant portion of these already minimal amounts will be mitigated by the offsets that Mirant Marsh Landing will surrender for the MLGS. Mirant Marsh Landing will provide NOx offsets (not just POCs, as alleged by Staff) at a BAAQMD-mandated ratio of 1.15:1.0. *(Id.)* These NOx offsets are local as they were generated primarily by facilities located immediately adjacent to the MLGS site. (*Id.*) Any remaining nitrogen deposition will be mitigated by the scheduled retirement of CCPP units 6 and 7, which is not taken into account in Staff's analysis. (*Id.)* For these reasons, Mirant Marsh Landing concluded that the MLGS will not have a significant adverse impact on species at the ADNWR and no additional mitigation is needed. (*Id.)*

Mirant Marsh Landing nevertheless has agreed voluntarily to accept a Condition of Certification that requires an annual payment in support of weed mitigation efforts at the Antioch Dunes NWR. This is reflected in Staff's proposed Condition of Certification BIO-8. Staff confirmed that implementation of this Condition of Certification will mitigate any potential adverse impacts to biological resources at the Antioch Dunes NWR to levels that are less than significant. In response to a PMPD comment from the United States Fish and Wildlife Service (USFWS) alleging the annual payment required by Condition BIO-8 was inadequate mitigation, Mirant Marsh Landing agreed to add $20,000.00 to the $2,693 annual payment recommended by Staff as its proportionate share of the costs of weed mitigation. The condition as adopted below, contains additional requirements that the moneys be specifically directed to the removal of noxious weeds and that a report on the use of the funds be provided to Staff.

The applicant's voluntary acceptance of the mitigation described in Condition BIO-8 means that the project now includes those actions. The project as thus constituted will, therefore, have no significant adverse impacts on biological resources. Moreover, the project would not (either individually or cumulatively) cause an impermissible "take" of a protected species under section 9 of the federal Endangered Species Act ("ESA"). This is because the definition of "harm" under the regulations implementing the ESA is not met here. (We also note that section 7 of the ESA does not apply here, because that section applies only to activities directly carried out by federal agencies, but not to activities simply approved by state agencies, as we approve MLGS here.) In sum, we find that the Conditions of Certification recommended by Staff and accepted by Mirant Marsh Landing will adequately mitigate any and all potential direct, indirect, and cumulative adverse impacts from the Marsh Landing Project on biological resources to

levels that are not significant. Based on the Revised Staff Assessment, Mirant Marsh Landing's written testimony, and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Construction. For construction of the Marsh Landing Project, Staff recommended that a Designated Biologist and biological monitor(s) be assigned to ensure avoidance and minimization of potential adverse impacts to the biological resources described in the Revised Staff Assessment. (Exhibit 300, p. 4.2-9 – 4.2-10.) Selection of the Designated Biologist and the associated duties and authority are described in Staff's proposed Conditions of Certification **BIO-2** and **BIO-3**. (*Id*.) The Designated Biologist will be responsible, in part, for developing and implementing the Worker Environmental Awareness Program (WEAP) (see Condition of Certification **BIO-4**), which is a mechanism for training workers on protection of the biological resources described in the Revised Staff Assessment. We find that these Conditions of Certification are adequate mitigation for potential adverse impacts to biological resources during the construction period.

2. Vegetation. Staff considered whether adverse impacts to vegetation could occur through the direct removal of plants during construction. (Exhibit 300, p. 4.2-10.) As these impacts are generally localized and temporary, they are not usually considered significant unless the habitat type is regionally unique or is known to support special-status species. (Id.) The Marsh Landing Project will result in the permanent disturbance of approximately 27 acres. Staff confirmed, however, that the Marsh Landing Project will be located entirely within a highly disturbed and previously graded or paved area that is largely devoid of vegetation. (*Id*.) We find that no significant adverse impacts to vegetation will occur and that no mitigation for potential impacts to vegetation is necessary.

3. General Wildlife. Staff considered whether construction could cause potential adverse impacts to wildlife in general. (Exhibit 300, pp. 4.2-10 – 4.2-11.) Staff concluded that the direct loss of small mammals, reptiles, and other less mobile species could occur during construction of the Marsh Landing Project. (*Id*.) This would result primarily from the use of construction vehicles and equipment at the MLGS site. (*Id*.) Staff concluded that due to a lack of vegetation, suitable habitat for most wildlife species does not occur on the MLGS site or linear routes. (*Id.*) Only species that are acclimated to highly disturbed areas will occur within the proposed project area. (*Id.*) We find that construction of the Marsh Landing Project will not result in significant adverse impacts to wildlife.

4. Bird Species. Staff determined that the MLGS site provides marginally suitable nesting habitat for a variety of common bird species. (Exhibit 300, p. 4.2-10.) Mirant Marsh Landing proposes to conduct pre-construction

nest surveys and to monitor any nests that may be discovered. (Exhibit 1(g)(2), p. 7.2-18.) Staff incorporated this measure into Condition of Certification **BIO-7** (Pre-Construction Nest Surveys and Impact Avoidance and Minimization Measures for Breeding Birds), which provides additional detail on survey timing and recommendations to avoid disturbance to active nests and ensure compliance with the Migratory Bird Treaty Act. (Exhibit 300, p. 4.2-10.) We find that with implementation of Condition of Certification **BIO-7**, no significant adverse impacts to nesting birds will result from Marsh Landing Project construction activities.

5. Detention Basin. Staff considered the detention basin in the southern portion of the CCPP property, which is assumed to contain several isolated wetlands and provides suitable foraging habitat for several bird species, including various waterfowl. (Exhibit 300, pp. 4.2-10 – 4.2-11.) Mirant Marsh Landing proposed several impact avoidance and minimization measures, which Staff found to be adequate to reduce potential impacts to biological resources at the detention basin to less than significant. (*Id*.) Those measures are incorporated into Staff's proposed Condition of Certification **BIO-5**. (*Id.*) We find that construction activities near the detention basin will not result in significant adverse impacts to wildlife.

6. Special Status Species. Staff considered potential construction Impacts to special-status species, and confirmed that the Marsh Landing Project area does not support suitable habitat for special-status species. (Exhibit 300, p. 4.2-11.) Staff noted that the marsh, riparian, and dune habitats associated with the San Joaquin River provide suitable habitat for several listed plants and animals, but Staff concluded that construction activities will not directly affect the San Joaquin River or associated habitats. (*Id.*) We find that construction activities will not result in significant adverse impacts to any special-status species.

7. Construction Noise. Staff considered the potential for noise from construction activities to create temporary impacts to biological resources. (Exhibit 300, p. 4.2-11.) Construction activities associated with the Marsh Landing Project will result in a short-term, temporary increase in the ambient noise level. (*Id*.) The existing CCPP, GGS, traffic on Wilbur Road, and the Burlington Northern Santa Fe Railroad in the immediate vicinity of the MLGS site create elevated ambient noise levels to which most local wildlife species have acclimated. (*Id.*) Staff analyzed potential impacts of construction noise, including pile driving, the loudest proposed construction activity. (*Id*.) To minimize noise impacts to breeding birds at the shoreline and detention basin, staff recommends Condition of Certification **BIO-7**, which requires a qualified biologist to monitor any nest locations exposed to excessive construction noise. (*Id*.) We find that with implementation of this condition, any impacts to nesting birds and other wildlife from Marsh Landing Project construction activities will be less than significant.

8. Construction Lighting. Staff considered the potential for lighting associated with construction activities to disturb or disorient various species of wildlife. (Exhibit 300, p. 4.2-12.) Existing operations at the CCPP and Gateway Generating Station as well as traffic on Wilbur Road provide an elevated ambient level of lighting to which some local wildlife species have acclimated. (*Id.*) Staff considered the lighting avoidance and minimization measures proposed by Mirant Marsh Landing and determined that those measures will ensure that temporary construction lighting will not create substantial sources of new light. (*Id.*) Staff incorporated those measures by reference into Staff's proposed Condition of Certification **BIO-5**. (*Id.)* Staff also recommended that lighting be specifically directed away from biologically sensitive areas (*i.e*., the San Joaquin River shoreline), as specified in Condition of Certification **BIO-6.** (*Id.)* We find that with implementation of these conditions, there will be no significant adverse impacts to sensitive wildlife from lighting during construction.

9. Operation Impacts – Collision Hazard. Staff considered potential operation-related impacts from the Marsh Landing Project. (Exhibit 300, pp. 4.2-12 – 4.2-15.) Staff concluded that the Marsh Landing Project site and immediate vicinity provide only marginally suitable habitat and are not known to support special-status birds. (*Id.)* Staff found that the transmission lines do not pose a collision threat to birds because they are short in length and located near the center of MLGS property surrounded by taller structures. (*Id.*) Staff also noted that structures over 500 feet tall present a greater risk to migratory songbirds than shorter structures and that bird mortality is significantly lower at towers shorter than 350 feet. *(Id.)* Because the MLGS exhaust stacks will be significantly shorter than 350 feet tall and shorter than the existing 450-foot-tall CCPP exhaust stacks, the MLGS exhaust stacks pose a relatively low collision risk to migrating birds. *(Id.)* We find that potential collision impacts to resident or migratory bird populations will be less than significant.

10. Operation Impacts – Electrocution Hazard. Staff considered potential electrocution risks to bird such as egrets, herons, raptors, and other large aerial perching birds that are susceptible to transmission line electrocution if they simultaneously contact two energized phase conductors or an energized conductor and grounded hardware. (Exhibit 300, pp. 4.2-12 – 4.2-15.) This happens most frequently when a bird attempts to perch on a transmission tower or pole with insufficient clearance between these energized elements. (*Id*.) The majority of bird electrocutions are caused by lines that are energized at voltage levels between 1-kV and 60-kV, and the likelihood of electrocutions occurring at voltages greater than 60-kV is low because phase-to-phase and phase-to-ground clearances for lines greater than 60-kV are typically sufficient to prevent bird electrocution. (*Id.)* Because the MLGS transmission lines will be 230-kV, phase-to-phase and phase-to-ground clearances will be sufficient to minimize bird electrocutions. (*Id.)* Also, due to the highly industrialized nature of the

transmission line routes, birds with wingspans large enough to be susceptible to electrocution are not likely to perch on the transmission conductors or support structures. (*Id.*) To avoid potential electrocution impacts, Mirant Marsh Landing proposed to construct the transmission lines in accordance with Avian Powerline Interaction Committee guidelines specifically designed to reduce the risk of bird electrocution. Staff agrees with this impact avoidance and minimization measure and has incorporated it into Staff's proposed Condition of Certification **BIO-6**. (*Id*.) We find that with this condition, electrocution impacts to birds will be less than significant.

11. Operation Impacts – Lighting. Staff analyzed potential impacts associated with lighting during operation of the MLGS. (Exhibit 300, pp. 4.2-14.) Several existing light sources surround the MLGS site, including the CCPP and GGS as well as traffic on Wilbur Road. (*Id.*) A slight increase in light is expected to occur during operation of the MLGS. (*Id.*) No sensitive species were found in the area of the MLGS site that would be impacted by operational lighting. (*Id*.) Staff therefore concluded that there will be no significant impacts to sensitive species from the minimal amount of lighting associated with operation of the Marsh Landing Project. (*Id.*) We agree and find that no mitigation is required.

12. Other Operational Impacts. Staff considered potential impacts associated with noise from operation of the MLGS. (Exhibit 300, pp. 4.2-14.) The MLGS site is zoned as Heavy Industrial pursuant to the Contra Costa County General Plan and is surrounded by other energy facilities including the CCPP and GGS. (*Id.*) The MLGS site is immediately north of Wilbur Road, approximately 0.6 mile west of State Highway 160 and 0.3 mile north of the Burlington Northern Santa Fe Railroad. Staff found that it is likely that animals in this area have become habituated to an elevated level of ambient noise. (*Id.*) Operation of the MLGS will produce slightly elevated noise levels, but no sensitive species that could be impacted by this nominal increase in noise are known to occur in the immediate vicinity. (*Id.)* Staff concluded that there will be no significant impacts to biological resources from increased operational noise. We agree and find that no mitigation is required.

13. Stormwater Runoff. Staff evaluated potential impacts from stormwater runoff from open areas on the MLGS project site, which will be discharged to the San Joaquin River via the existing CCPP stormwater outfall in accordance with the National Pollutant Discharge Elimination System (NPDES) General Industrial Permit requirements. (Exhibit 300, pp. 4.2-14 – 4.2-15.) Mirant Marsh Landing proposes to gravel, rather than pave, most of the MLGS surfaces; therefore the amount of stormwater discharge is expected to be the same or less than under existing conditions. (*Id*.) We find that stormwater runoff will not result in any significant adverse impacts to the San Joaquin River. Water quality impacts are addressed in more detail in the **Soil and Water Resources** section of this Decision.

14. Nitrogen Deposition. As noted above, Staff evaluated potential impacts associated with nitrogen deposition from the MLGS. Staff concluded that nitrogen deposition could result in a potentially significant indirect adverse impact at the Antioch Dunes NWR by contributing to noxious weed invasion. (Exhibit 300, pp. 4.2-15 – 4.2-17.) Mirant Marsh Landing has provided evidence that indirect adverse impacts associated with MLGS nitrogen deposition will be less than significant, as discussed above. (Exhibit 42.) The project as approved here, which includes the applicant's acceptance of the actions described in Condition BIO-8, will cause no significant adverse impacts on biological resources, and will not cause a "take" of endangered species under the federal ESA, at the Antioch Dunes NWR.

15. Cumulative Impacts. Staff analyzed potential cumulative impacts to biological resources. Staff's cumulative impacts analysis focuses on other sources of emissions that could contribute to nitrogen deposition at Antioch Dunes NWR. (Exhibit 300, pp. 4.2-17 – 4.2-18.) The annual payment Mirant Marsh Landing has agreed to make pursuant to Condition of Certification BIO-8 ($2,693.00, adjusted for inflation, plus an additional $20,000.00 annually) will more than adequately mitigate impacts resulting from MLGS nitrogen deposition at the Antioch Dunes NWR, thereby eliminating any contribution to cumulatively considerable effects. (Id.) We find that any potential adverse cumulative impacts from the Marsh Landing Project will be mitigated to levels that are less than significant.

16. Compliance with LORS. Staff confirmed that the Marsh Landing Project will comply with state and federal LORS that address state and federally listed species, as well as other sensitive species and their habitats. (Exhibit 300, pp. 4.2-18 – 4.2-19.) Applicable LORS are presented in Table 1 in the Biological Resources Section of the Revised Staff Assessment. (*Id*., pp. 4.2.-2 – 4.2-4.) We find that the Marsh Landing Project will comply with all applicable LORS that address biological resources.

17. Mitigation of Impacts. The Marsh Landing Project will avoid impacts to biological resources because the power plant site, construction laydown areas, and routes of linear facilities (*i.e.*, electric transmission, water, wastewater, and natural gas) are highly disturbed or developed and surrounded by heavy industrial uses including the CCPP and GGS. The potential for the Marsh Landing Project area to support sensitive biological resources is low and the immediate vicinity supports wildlife that are likely habituated to frequent disturbance. We find that with implementation of Staff's proposed Conditions of Certification **BIO-1** through **BIO-8**, which we adopt below, any potential adverse direct, indirect, or cumulative impacts to biological resources will be less than significant.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.
2. The Conditions of Certification adopted below ensure that the Marsh Landing Project will not result in significant direct, indirect, or cumulative adverse impacts to special status species or other biological resources.
3. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS related to biological resources, as identified in the Revised Staff Assessment.
4. We adopt the Conditions of Certification that are specified in the Biological Resources section of the Revised Staff Assessment and identified as **BIO-1** through **BIO-7** and **BIO-8** modified as follows:

> **BIO-8** The project owner shall provide an annual payment to Friends of San Pablo Bay to assist in noxious weed management at the Antioch Dunes National Wildlife Refuge. The first annual payment shall be at least equal to $2,693.00.
>
> Each subsequent annual payment as calculated above shall be adjusted for inflation in accordance with the Employment Cost Index – West or its successor, as reported by the U.S. Department of Labor's Bureau of Labor Statistics. Payment shall be made annually for the duration of project operation.
>
> The project owner has voluntarily offered to contribute additional annual funding for weed management efforts at the Antioch Dunes National Wildlife Refuge in an amount equal to $20,000 per year and has agreed to include that additional payment as a requirement in this condition of certification. The additional annual payment shall be made at the same time as the annual payment specified above and shall be made for the duration of project operation, but shall not be adjusted for inflation.

Verification: No later than 30 days following the start of project operation, the project owner shall provide written verification to the CPM, USFWS, and CDFG that the first-annual payment was made to the Friends of San Pablo Bay in accordance with this condition of certification. The project owner shall provide evidence that it has specified that its annual payment to Friends of San Pablo Bay can be used only to assist in noxious weed management at the Antioch Dunes National Wildlife Refuge.

Thereafter, within 30 days after each anniversary date of the commencement of project operation, the project owner shall provide written verification to the CPM, USFWS, and CDFG that payment has been made to the Friends of San Pablo Bay in accordance with this condition of certification. This verification shall be provided annually for the operating life of the project. The project owner also shall request an annual report from the Friends of San Pablo Bay documenting how each annual payment required hereunder was used and applied to assist in noxious weed management at the Antioch Dunes National Wildlife Refuge. The project owner shall provide copies of such reports to the CPM within thirty (30) days after receipt.

B. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the Marsh Landing Project, including its potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. Staff analyzed these issues and concluded that, with implementation of Staff's proposed Conditions of Certification **SOIL & WATER-1** through **SOIL & WATER-6**, the Marsh Landing Project will have no significant adverse impacts on soil and water resources and will comply with all applicable LORS. (Exhibit 300, pp. 4.9-1 – 4.9-31.)

Mirant Marsh Landing agrees with Staff's conclusions as set forth in the Soil and Water Resources and Waste Management sections of the Revised Staff Assessment. (Exhibit 42, pp. 39, 43.) Mirant Marsh Landing is willing to accept the requirements in Staff's proposed Conditions of Certification **SOIL & WATER-1** through **SOIL & WATER-6,** but has requested one modification to **SOIL & WATER-6** and one correction to the Verification for **SOIL & WATER 4**. *(Id*., pp. 44-46.) Staff has agreed with the requested modification. (7/1/10 RT 14:5-9.) We find that Mirant Marsh Landing's requested changes are reasonable and adopt them in this Decision, as specified below.

Based on the Revised Staff Assessment, Mirant Marsh Landing's written testimony, and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Overview of Analysis. Staff analyzed the Marsh Landing Project to determine whether its construction or operation would contribute to erosion, sedimentation, flooding, and degradation of water quality and water supply. (Exhibit 300, p. 4.9-10.) Staff stated that compliance with existing comprehensive regulatory procedures will, absent unusual circumstances, ensure that such impacts will not occur. *(Id.)* Staff analyzed the Marsh Landing Project's compliance with the federal and state LORS and state and local policies that are presented in Table 1 in the Soil and Water Resources section of the Revised Staff Assessment. (Id., pp. 4.9-2 – 4.9-4.) Staff then analyzed potential direct and indirect impacts associated with the construction and operation of the Marsh Landing Project, evaluated Mirant Marsh Landing's proposed mitigation measures and, suggested additional mitigation measures in Staff's proposed Soil and Water Conditions of Certification. *(Id.,* pp. 4.9-10 – 4.9-29.) We find that Staff's analysis of potential soil and water impacts is adequate to support our findings and conclusions in this Decision.

2. Surface Water Quality. Staff evaluated the potential for construction and operation of the Marsh Landing Project to affect surface water quality

through the discharge of sediment-laden runoff, the migration of existing on-site pollutants, and the release of hazardous materials during construction. (Exhibit 300, pp. 4.9-11 – 4.9-16.) Staff concluded that potential adverse impacts caused by erosion and storm water flows during construction and operation of the Marsh Landing Project will be mitigated with the development and implementation of a Drainage, Erosion, and Sedimentation Control Plan (DESCP), a construction Storm Water Pollution Prevention Plan (SWPPP), and an industrial SWPPP, that each will incorporate applicable regulatory requirements and be subject to review and approval by the CPM. (Id.) Staff also recommended that these storm water management plans be consistent with, the Storm Water Control Plan (SWCP) requirements of the Contra Costa Clean Water Program. *(Id.,* pp. 4.9-15 - 4.9-16.) Staff concluded that adherence to the procedures in an approved construction SWPPP and DESCP will limit erosion and the migration of the contaminants in storm water runoff from entering the San Joaquin River during construction. (*Id*.) To control erosion and sedimentation impacts during operation, Staff confirmed that Mirant Marsh Landing will be required to comply with applicable LORS and prepare an industrial SWPPP. (*Id.*) This will include permanent stormwater management facilities and best management practices to control stormwater runoff and volumes after the construction process is completed. (*Id.*) Staff recommended Condition of Certification **SOIL & WATER 1** for the final preparation and implementation of the construction SWPPP, along with **SOIL & WATER 2** for the final preparation and implementation of the DESCP. Staff also recommended Condition of Certification **SOIL & WATER-4**, which requires the project owner to comply with the General NPDES Permit for discharges of storm water associated with industrial activity. *(Id.)* We find that approval and implementation of a site-specific construction SWPPP, a DESCP, and an industrial SWPPP will ensure that all potential adverse erosion, sedimentation, and contamination impacts to water quality are reduced to less than significant levels during construction and operation of the Marsh Landing Project.

3. Groundwater Contamination. Staff considered the potential for adverse impacts to occur to groundwater resources. Groundwater may be encountered during construction. Groundwater beneath the site is expected to be contaminated and its storage, testing, and proper disposal are required under Condition of Certification **SOIL & WATER-3** that requires the development and implementation of a groundwater dewatering plan such that construction activities will not adversely impact groundwater or surface water. (Exhibit 300, pp. 4.9-13 – 4.9-14.) There will be no underground chemical storage tanks proposed at the project site that could adversely impact groundwater. (*Id*., p. 4.9-20.) Staff also explained that no release of contaminated storm water from the MLGS site is expected; therefore, no contaminated stormwater contact with groundwater will occur. *(Id.)* Staff found that no significant impacts to

groundwater resources will result from discharges from the Marsh Landing Project if the site specific construction SWPPP, DESCP, and the industrial SWPPP are implemented as required by Conditions of Certification **SOIL & WATER-1, SOIL & WATER-2**, and **SOIL & WATER-4**. *(Id.)* We agree and adopt Staff's findings.

4. Existing Soil Contamination. Staff referenced the supplemental investigations that are being performed by Mirant Marsh Landing and PG&E at the MLGS site to support a potential remedial action plan for the MLGS site, if necessary, and ultimately to facilitate regulatory closure. (Exhibit 300, p. 4.9-13.) Staff stated that it was not able to fully assess all potential impacts to soil and water resources due to the unknown extent of contaminated soil and possibly contaminated groundwater. (*Id.*, p. 4.9-1.) As discussed in the **Waste Management** section of this Decision, however, Staff concluded that the MLGS site has been adequately characterized to support the formulation of the Waste Management Conditions of Certification and to support our finding that all potential adverse impacts to workers and off-site public will be mitigated through those Conditions of Certification. Staff proposed Condition of Certification **WASTE-10**, which we adopt in the **Waste Management** section of this Decision, which requires all DTSC-ordered remedial work at the MLGS project site to be completed prior to the commencement of soil excavation or grading in the affected areas. We find that all potential adverse impacts to soil and water resources from contamination at the MLGS site will be adequately mitigated through the Waste Management Conditions of Certification that are adopted in this Decision. We find that compliance with the Waste Management Conditions of Certification, and Conditions of Certification **SOIL & WATER-1** and **SOIL & WATER-2**, will reduce all potential adverse impacts to soil and water resources that could be associated with any dispersion of pollutants by wind or water erosion to less than significant levels.

5. Construction Dewatering. Staff evaluated the potential for construction activities to adversely affect groundwater quality through inadvertent spills or discharge that could then infiltrate and percolate into the groundwater. (Exhibit 300, pp. 4.9-13 – 4.9-14.) Staff evaluated Mirant Marsh Landing's proposal to develop a dewatering plan prior to excavation. (*Id.*) Staff proposed Condition of Certification **SOIL & WATER-3**, which requires the project owner to submit a complete Notice of Intent (NOI) for compliance with Central Valley RWQCB Order No. R5-2008-0081 for Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters. (*Id.*) We find that Condition of Certification **SOIL & WATER-3** will prevent significant impacts to both groundwater and surface water resources from construction dewatering activities.

6. Water Supply for Construction. Staff analyzed Mirant Marsh Landing's proposal to use fresh water supplied by the City of Antioch for construction. (Exhibit 300, p. 4.9-14.) Staff concluded that any potential

impacts associated with this use of fresh water will be adequately mitigated by the payment of a one-time fee to the City of Antioch. (*Id.)* The City of Antioch can use this payment to fund water conservation programs. The requirement to make this one-time payment is included in Condition of Certification **SOIL & WATER-6**. (*Id*.) We find that the Marsh Landing Project's use of City of Antioch water for construction purposes will not create any significant adverse impacts on other water users.

7. Flooding. Staff considered the potential for the Marsh Landing Project to contribute to flood flows or increase the elevation of the 100-year floodplain during construction or operation. Staff evaluated flooding potential for the Marsh Landing Project and concluded that the 100-year base flood elevation is 7-feet above mean sea level as determined by the Federal Emergency Management Agency. (Exhibit 300, p. 4.9-16.) We find that the potential for flooding is minimal and will not cause or contribute to an adverse impact.

8. Tsunamis and Seiches. Staff evaluated potential impacts associated with tsunamis (waves typically generated offshore or within large bodies of water during a subaqueous fault rupture or subaqueous landslide event) and seiches (waves generated within a large body of water caused by the horizontal movement of an earthquake). (Exhibit 4.9-16 – 4.9-17.) Staff concluded that the MLGS site will not be impacted by a 100-year tsunami due to its location well east of the Golden Gate Bridge and the many embayments the wave would flow through prior to reaching the site. Staff also concluded that seiches do not pose a risk of a significant adverse impact because a seiche originating in Suisun Bay is likely to dissipate rapidly prior to reaching the MLGS site. (*Id*.) We find that tsunamis and seiches do not pose a risk of significant adverse impact to the MLGS site.

9. Sea Level Rise. Staff considered potential adverse impacts associated with expected sea level rise due to global climate change. (Exhibit 300, p. 4.9-17.) Staff evaluated the maximum projected sea level rise of 18 inches by 2050 and found that this will not pose a threat to the MLGS site or its operation. (*Id*.) We agree and adopt Staff's finding.

10. Water Supply for Operation – Brackish Groundwater. Staff analyzed Mirant Marsh Landing's proposal to use brackish groundwater as a potential source of process water for the Marsh Landing Project. (Exhibit 300, pp. 4.9-17 – 4.9-18.) Two new wells will be installed, with one providing 100 percent redundancy, and could pump as much as 50 AFY for process water use. After reviewing the applicant's analysis of potential impacts, Staff concluded that there will be no significant impacts to other users or environmental resources due to groundwater pumping. (*Id*.) Staff recommends Condition of Certification **SOIL & WATER-6**, which requires metering devices to be installed prior to the use of groundwater or potable water for MLGS operation. Data from the metering devices would be used to prepare an annual water use summary that would be submitted to the CPM in an annual compliance report. (*Id.*)

We find that the Marsh Landing Project's use of groundwater and the associated pumping will not have a significant adverse impact on water supplies, other water users, or environmental resources.

11. Water Supply for Operation – City of Antioch Water. Staff also considered the potential for the Marsh Landing Project to use fresh water supplied by the City of Antioch for process purposes, either as a backup source if groundwater is the primary supply, or as an alternate primary water source for all process needs in lieu of brackish groundwater. (Exhibit 300, pp. 4.9-18 – 4.9-20.) Staff concluded that the MLGS use of City of Antioch water, either temporarily or an alternate primary supply for process needs, will not result in a significant adverse impact to water quality or water supplies. (*Id.*) Staff proposed that, prior to using City of Antioch water as its primary supply of process water, Mirant Marsh Landing be required to submit documentation to the CPM explaining the selection of City water as the primary source, which may be based on technical feasibility and/or project economics. (*Id.*) If City water is selected as the primary process water source, then Staff's proposed Condition of Certification **SOIL & WATER-6** requires the project owner to contribute to a water conservation program. (*Id.*) Staff explained that these contributions would enhance the City of Antioch's existing water conservation programs and offset the Marsh Landing Project's use of City of Antioch water. (*Id.*) The contributions are structured as a specified dollar amount for each AFY of City of Antioch water that is used by the MLGS for process needs. (*Id.*) Mirant Marsh Landing agreed to make the annual mitigation payments requested by Staff, but asked for one change to the language in **SOIL & WATER-6**. (Exhibit 42, pp. 44-46.) We find that Mirant Marsh Landing's requested change is reasonable and we adopt it below.

12. Consistency with Water Policy. Staff evaluated the Marsh Landing Project's two potential water sources for consistency with the Energy Commission's policy on the use of fresh water for power plant cooling, as set forth in the Energy Commission's 2003 Integrated Energy Policy Report (IEPR), and the similar policy in State Water Quality Control Board (SWQCB) Resolution 75-58. (Exhibit 300, pp. 4.9-23 – 4.9-25.) These policies specify that the use of fresh water for cooling purposes by power plants will be approved only when alternative water supply sources and alternative cooling technologies are shown to be environmentally undesirable or economically unsound. Staff concluded that the proposed use of a maximum of 50 AFY of either brackish groundwater or the contingent use of fresh water supplied by the City of Antioch is consistent with these policies. (*Id.*) The MLGS will use water in CTG inlet air evaporative coolers and for service water and other industrial purposes. The inlet air evaporative coolers use a relatively small amount of water to reduce the temperature of the ambient air as it enters the combustion turbines to improve power output and efficiency. In this process, water is introduced into the ambient air as it is drawn through the turbine. The MLGS will not use water for wet cooling or as part of a steam cycle or for

steam condensation purposes. (Id.) The MLGS also will not use any water for the purpose of rejecting waste heat produced by power plant processes to the atmosphere. (*Id*.) Staff concluded that the MLGS will not use water for cooling purposes because it utilizes a project design that minimizes the use of water. *(Id.)* This is particularly apparent when the project's water use is evaluated as a function of total AFY of water required for each MW of total MLGS power plant capacity. In this respect, even if MLGS uses its maximum 50 AFY of water, it will use only 0.06 AFY of water for each MW of power plant capacity. This demonstrates that the MLGS is proposing the use of technologies that reduce water consumption which are consistent with state policies designed to conserve fresh water supplies. (*Id.)* Staff also notes that if the MLGS uses City of Antioch water as its primary source of process water, the project owner will be required to fund water conservation measures in an amount that is tied to the project's actual total annual consumption of City of Antioch water for process purposes. The intent of this measure is to establish or fund a conservation program designed to achieve water savings equal to the amount of fresh water used annually by MLGS. This mitigation is consistent with state policies intended to encourage the conservation of fresh water. (*Id.*) We find that the Marsh Landing Project's use of either brackish groundwater or fresh water supplied by the City of Antioch for process uses will comply with Energy Commission water policy and SWQCB Resolution 75-58.

13. Process and Sanitary Wastewater. Staff notes that the Marsh Landing Project will discharge process and sanitary wastewater to the Delta Diablo Sanitation District (DDSD) wastewater treatment facility in accordance with an Industrial Wastewater Discharge Permit. (Exhibit 300, p. 4.9-21.) To ensure that the proposed MLGS discharges its wastewater to a licensed wastewater treatment facility, Staff recommends that Mirant Marsh Landing be required to provide a copy of a long-term wastewater discharge agreement in accordance with Condition of Certification **SOIL & WATER-5**. (*Id*.) We find that Condition of Certification **SOIL & WATER-5** will ensure that no significant impacts to soil or water resources will occur due to discharge of MLGS wastewater to DDSD's treatment facility.

14. Discharge Policy. Staff also notes that the Energy Commission's water policy is designed to protect water resources from power plant wastewater discharges. (Exhibit 300, p. 4.9-25.) To that end, the water policy specifies that the Energy Commission will require zero liquid discharge technologies (for management of power plant wastewaters) unless such technologies are shown to be environmentally undesirable or economically unsound. (*Id.*) The MLGS will utilize a discharge system where sanitary and process wastewater will be delivered to DDSD. The MLGS will use a small amount of water and has a maximum annual capacity factor of 20 percent, which results in a small quantity of wastewater discharge. Staff finds that the minimization of process wastewater complies with the water policies. (*Id.*) We find that the

discharge methods proposed for the Marsh Landing Project are acceptable and consistent with Energy Commission water policy.

15. Cumulative Impacts. Staff analyzed potential cumulative impacts and found that the Marsh Landing Project will neither cause nor contribute to cumulative impacts to soil and water resources. (Exhibit 300, pp. 4.9-21 – 4.9-23.) We agree and adopt Staff's finding.

16. Compliance with LORS. Based on the results of its analysis, Staff concluded that the Marsh Landing Project will not result in any significant adverse impacts to soil or water resources and will comply with applicable LORS if Staff's proposed Conditions of Certification are implemented. (Exhibit 300, pp. 4.9-23 – 4.9-25.) We find that the Marsh Landing Project will comply with all applicable LORS with implementation of the Conditions of Certification adopted below.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Marsh Landing Project will not result in any unmitigated, significant project specific or cumulative adverse impacts to soil or water resources.

2. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS applicable to soil and water resources.

3. The Marsh Landing Project will not use water as part of a steam cycle or for purposes of rejecting process or waste heat to the atmosphere and is therefore consistent with the SWRCB Regulation 75-58 and the Energy Commission's policy of discouraging the use of fresh water for power plant cooling.

4. We adopt the Conditions of Certification that are specified in the Soil and Water Resources section of the Revised Staff Assessment and identified as **SOIL & WATER-1** through **SOIL & WATER-6**, with the following modifications to **SOIL & WATER-6** and the verification for **SOIL & WATER-4**:

> **SOIL & WATER-6:** Prior to the use of groundwater or potable water for operation of the MLGS, 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 volume of groundwater and potable water supplied to the MLGS. The metering devices shall be operational for the life of the project. An annual summary of daily water use by the MLGS, differentiating between groundwater, potable water, and recycled water (if applicable) shall be submitted to the CPM in

the annual compliance report. Process water use shall not exceed 50 AFY from any source. Water supplied to MLGS shall be used for evaporative cooler makeup, service water, and water for combustion turbine washes and meet the following condition:

The primary MLGS water source shall be brackish groundwater. Once annually, the project owner shall sample groundwater quality at both pumping wells. The project owner shall treat plant wastewater (effluent) to meet Delta Diablo Sanitation District's (DDSD's) discharge requirements or implement zero liquid discharge technologies to manage the plant's process wastewater. Laboratory test results from the groundwater quality sample and the effluent sample, shall be submitted to the CPM in the annual compliance report.

Prior to installing a connection to the City of Antioch water supply system for an alternative source, the project owner shall provide evidence to the CPM that City has agreed to supply emergency backup water to the project in sufficient quantities to meet the project's needs at a flow rate comparable with the flow rate provided by one on-site well. For the purpose of this condition, the term emergency shall mean the operation and/or emergency issues that arise with the two proposed wells or with mobile water filtration and ion exchange trailers, or the permanent water treatment plant. The City's supply must provide access to a quantity sufficient to meet MLGS demand due to Acts of God, natural disaster and other circumstances beyond the control of the project owner and it is necessary for the MLGS to continue to operate at peaking load capacity. Any connection to a water supply line shall be properly metered throughout the period of time of the emergency.

The project owner may provide evidence to the CPM that the water source described above is not feasible. Such evidence may be based on technical feasibility and/or project economics.

The project owner, at the recommendation of the CPM, shall identify a primary alternative water supply as described herein:

The primary alternative MLGS water source shall be City of Antioch fresh water supply. No more than 50 acre-feet of fresh water shall be supplied annually. The project owner shall pay a fee equal to no more than $1,000 per acre-foot of City of Antioch water consumed annually (potable water for personnel consumption, eyewash stations, showers, and sanitary needs not included) to City of Antioch's water conservation program to implement new water conservation measures. The water conservation program may change with CPM approval. A payment of $15,000 shall be made to the City to offset fresh water used for construction and initiate the water conservation program. Water conservation fees are not required for use of recycled water during construction or operation. The project owner shall maintain the facilities necessary to obtain brackish groundwater as a back up water supply. Brackish groundwater or recycled water (when feasible) may be used to supplement the fresh water sources.

SOIL & WATER-4:

Verification: Prior to commercial operation, the project owner shall submit to the CPM a copy of the industrial SWPPP prepared in accordance with General NPDES Permit for Discharges of Storm Water Associated with Industrial Activities (Order No. 97-03-DWQ). The project owner shall submit copies to the CPM of all correspondence between the project owner and the Central Valley RWQCB regarding the Industrial SWPPP within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent for compliance with the General NPDES permit for operation of the MLGS.

C. CULTURAL RESOURCES

The Energy Commission determines the potential for a power plant project to result in significant adverse impacts to cultural resources. Staff evaluated the potential for the Marsh Landing Project to result in a significant adverse impact to cultural resources. Staff concluded that the Marsh Landing Project will have no impacts on known significant archaeological resources, ethnographic resources, historic standing structures, historic districts, or cultural landscapes. (Exhibit 300, p. 4.3-1.) Staff recommended Conditions of Certification **CUL-1** through **CUL-2** to protect any cultural resources that may be discovered during construction or operation. (Id.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Archeological Resources. To identify potential construction-related impacts to cultural resources, Staff first identified all cultural resources that are eligible for inclusion in the California Register of Historic Resources (CRHR). Impacts to CRHR-eligible cultural resources are the only cultural impacts that require mitigation and they must be evaluated to determine if they are substantial and adverse. (Exhibit 300, p. 4.3-12.) Neither Mirant Marsh Landing nor Staff identified any prehistoric or historic-period archaeological sites in the area. Contacts with Native Americans also disclosed no archaeological sites in the area. Staff found that construction impacts from the Marsh Landing Project will not affect known archaeological resources and that no mitigation is required for known archaeological resources. (Id., p. 4.3-13.) We agree and adopt Staff's finding.
2. Ethnographic Resources. Staff confirmed that no ethnographic resources, either previously recorded or newly disclosed in communications with Native Americans, were identified in the vicinity of the Marsh Landing Project. (Exhibit 300, p. 4.3-14.) Staff found that the Marsh Landing Project will have no significant impact on ethnographic resources and that no mitigation for impacts to this class of cultural resources is required. (Id.) We agree and adopt Staff's finding.
3. Historic Standing Structures. Staff confirmed that no built-environment resources that qualify as historical resources for the purpose of CEQA analysis are now known or likely to be found in the Marsh Landing Project area. (Exhibit 300, p. 4.3-15.) Staff found that the Marsh Landing Project will have no significant impact on built-environment resources, and that no mitigation for impacts to this class of cultural resources is required. (Id.) We agree and adopt Staff's finding.

4. Indirect Impacts. Staff confirmed that no potential indirect impacts to any identified cultural resources were identified in the impact areas of the Marsh Landing Project. (Exhibit 300, p. 4.3-15.) Staff found that no mitigation measures for indirect impacts are required for any class of cultural resources. (Id.) We agree and adopt Staff's finding.

5. Conditions of Certification. Staff's cultural resources analysis determined that the Marsh Landing Project will have no impact on known significant archaeological resources, ethnographic resources, historic standing structures, historic districts, or cultural landscapes. To address any resources that may be discovered in the future, Staff recommends the adoption of Conditions of Certification, CUL-1 through CUL-8. (Exhibit 300, p. 4.3-14.) These measures are intended to facilitate the identification and assessment of unanticipated discoveries of historical resources encountered during construction and to mitigate any significant impacts from the Marsh Landing Project on these resources if they are found to be significant. (Id.) The Conditions of Certification provide for the hiring of a Cultural Resources Specialist and archaeological monitors, cultural resources awareness training for construction workers, archaeological and Native American monitoring of ground-disturbing activities, recovery of data from significant discovered archaeological deposits, the writing of a technical archaeological report on all archaeological activities and findings, and curation of recovered artifacts and other data. (Id.) We find that Conditions of Certification CUL-1 through CUL-8 ensure that all impacts to cultural resources that may be discovered during construction and operation are mitigated below the level of significance.

6. Operation Impacts. Staff concluded that excavation activities could be required during operation of the MLGS, potentially to repair gas or water pipelines. (Exhibit 300, p. 4.3-15.) Staff found that these excavations could impact previously unknown subsurface archaeological resources in areas unaffected by the original excavation. (Id.) We find that the measures proposed in the Conditions of Certification adopted below, which are designed to mitigate impacts to previously unknown archaeological resources that may be found during construction of the Marsh Landing Project, will also serve to mitigate impacts that may occur due to excavation activities during the operation of the MLGS.

7. Cumulative Impacts. Staff analyzed potential cumulative impacts associated with the Marsh Landing Project. Cumulative impacts to cultural resources in the MLGS vicinity could occur if other existing or proposed projects, in conjunction with the MLGS, had or would have impacts on cultural resources that, considered together, would be significant. (Exhibit 300, p. 4.3-15 – 4.3-16.) Because there are no known CRHR-eligible resources in the area of analysis, Staff only proposed Conditions of Certification for the Marsh Landing Project that provide for identification, evaluation, and avoidance or mitigation of impacts to previously unknown

cultural resources discovered during the construction. (Id.) Staff noted that the protocols in Conditions of Certification CUL-1 through CUL-8 will mitigate potential impacts associated with the Marsh Landing Project and similar protocols can be applied to other projects in the area. (Id.) We find that the incremental effects on cultural resources of the Marsh Landing Project will not be cumulatively considerable when viewed in conjunction with other projects.

8. Compliance with LORS. Staff found that with implementation of its proposed Conditions of Certification, the Marsh Landing Project will not result in any significant adverse impacts on any new significant archeological resources that may be discovered during construction or operation, and will comply with all applicable LORS identified in the Table 1 in the Cultural Resources section of the Revised Staff Assessment. We agree and adopt Staff's finding.

CONCLUSIONS OF LAW

1. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS relating to cultural resources as set forth in the Cultural Resources section of the Revised Staff Assessment.
2. The Conditions of Certification adopted below ensure that the Marsh Landing Project will have no significant adverse environmental impacts.
3. We adopt the Conditions of Certification that are specified in the Cultural Resources section of the Revised Staff Assessment and identified as **CUL-1** through **CUL-8**.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

This section reviews the Marsh Landing Project's potential to create significant adverse impacts on geological and paleontological resources. This section considers two types of potential impacts: (1) geologic hazards, which could affect proper functioning of the MLGS and include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches; and (2) the potential for the Marsh Landing Project to result in significant adverse impacts to existing geologic, mineralogic, and paleontologic resources.

Staff analyzes these potential impacts and determined that the design, construction, and operation of the Marsh Landing Project will not have a significant adverse impact with respect to geologic, mineralogic, and paleontologic resources. (Exhibit 300, pp. 5.2-1 – 5.2-28.) Staff proposes to ensure compliance with applicable LORS through its proposed Conditions of Certification GEO-1 and PAL-1 and PAL-7, which we adopt below. (Id.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Geologic Hazards. In its analysis of potential geologic hazards to the Marsh Landing Project, Staff considered the potential for faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, and seiches. (Exhibit 300, pp. 5.2-7 – 5.2-12.) Staff confirmed that no federal LORS concerning geologic hazards and geologic and mineralogic resources apply to the Marsh Landing Project. (Id.) The California Building Standards Code (CBSC) and CBC (2007) provide geotechnical and geological investigation and design guidelines, which engineers must follow when designing a power plant. (Id.) As a result, the criteria used to assess the significance of a geologic hazard include evaluating each hazard's potential impact on the design and construction of the Marsh Landing Project. (Id.) Staff determined that the main geologic hazards for this location are earthquake-related ground shaking due to the MLGS site's geologic setting; liquefaction and associated lateral spreading of loose and submerged granular soils; and dynamic compaction. (Id.) Staff concluded that these potential hazards can be effectively mitigated through facility design by incorporating recommendations contained in a project-specific geotechnical report as required by the CBC (2007) and proposed Condition of Certification GEO-1. (Id.) Staff found that the requirements of the Facility Design Conditions of Certification GEN-1,

GEN-5, and CIVIL-1 also aid in mitigating these impacts to a less than significant level. (Id.) We find that geologic hazards will be mitigated to a less than significant level through implementation of the Conditions of Certification adopted in this Decision.

2. Geologic and Mineralogic Resources. Although geologic and mineralogic resources are known to exist in the Marsh Landing Project area, Staff confirmed that there are no known viable geologic or mineralogic resources within one mile of the proposed MLGS site or along the routes of the linear facilities. (Exhibit 300, p. 5.2-12 – 5.2-15.) We find that the Marsh Landing Project will not have a significant adverse impact, directly or indirectly, on geologic or mineralogic resources.

3. Paleontological Resources. Staff confirmed that no viable geologic or mineralogic resources are known to be present at the plant site or along the routes of the proposed linear facilities. (Exhibit 300, p. 5.2-12 – 5.2-15.) However, Staff determined that paleontological resources have been documented in older Quaternary sediments within three miles of the MLGS site and could be impacted by excavation activities at the MLGS site and along linear routes that may encounter this geologic unit. (Id.) Staff found that potential impacts to paleontological resources due to construction activities will be mitigated to less than significant levels through worker training and monitoring by qualified paleontologists, as required by Staff's proposed Conditions of Certification PAL-1 through PAL-7. (Id, p. 5.2-14.) We find that implementation of Staff's proposed Conditions of Certification PAL-1 through PAL-7 will ensure compliance with LORS applicable to geologic hazards and the protection of geologic, mineralogic, and paleontologic resources. If paleontological resources are discovered during project construction, any potential adverse impacts to paleontological resources will be mitigated to less than significant levels through implementation of the Conditions of Certification adopted in this Decision.

4. Cumulative Impacts. Staff analyzed potential cumulative impacts associated with the Marsh Landing Project's potential incremental effect, together with other closely related past, present, and reasonably foreseeable future projects whose impacts on geologic, mineralogic, and paleontologic resources may compound or increase the incremental effect of the Marsh Landing Project on such resources. (Exhibit 300, pp. 5.2-15 – 5.2-16.) Staff determined that potential cumulative effects, as they pertain to geologic hazards, are essentially limited to regional subsidence due to ground water withdrawal. (Id.) The MLGS may pump up to 50 acre-feet per year of brackish ground water, but as discussed in Soil and Water Resources section of the Revised Staff Assessment, potential impacts from the proposed MLGS project will be less than significant. (Id., p. 4.9-22.) In addition, a significant number of large-scale ground water pumping operations would have to be constructed to have any significant impact on the MLGS. Because heavily loaded foundations will most likely

include deep foundations to mitigate potential settlement due to foundation loads, potential effects due to regional subsidence under such conditions would also be effectively mitigated. (Id.) Staff found that the potential is low for significant adverse cumulative impacts to the Marsh Landing Project from geologic hazards during its design life and to potential geologic, mineralogic, and paleontologic resources from the construction, operation, and closure of the Marsh Landing Project. We find that the Marsh Landing Project will not have any significant adverse cumulative impacts in this area.

5. Facility Closure. Staff found that facility closure activities are not expected to impact geologic or mineralogic resources because no such resources are known to exist at either the Marsh Landing Project location or along its proposed linear routes. (Exhibit 300, p. 5.2-16.) Staff found that the decommissioning and closure of the MLGS should not negatively affect geologic, mineralogic, or paleontologic resources because the majority of the ground disturbed during plant decommissioning and closure would have been already disturbed, and mitigated as required, during construction and operation of the Marsh Landing Project. (Id.) We agree and adopt Staff's findings.

6. Impacts. We find that the Conditions of Certification adopted in this Decision will ensure that activities associated with construction and operation of the Marsh Landing Project will cause no significant adverse impacts to geological or paleontological resources.

7. Compliance with LORS. Staff found that the Marsh Landing Project can be designed, constructed and operated in accordance with all applicable LORS and in a manner that both protects environmental quality and assures public safety, to the extent practical. We find that the Conditions of Certification adopted in this Decision are sufficient to ensure that the project complies with all applicable LORS identified in the Geological and Paleontological section of the Revised Staff Assessment.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Marsh Landing Project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineralogic, or paleontological resources.

2. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with all applicable LORS as indentified in the Geological and Paleontological section of the Revised Staff Assessment.

3. We adopt the Conditions of Certification that are specified in the Geological and Paleontological Resources section of the Revised Staff Assessment and identified as **GEO-1** and **PAL-1** through **PAL-7**.

VII. LOCAL IMPACT ASSESSMENT

In the following sections of this Decision, we review whether the Marsh Landing Project will result in significant local impacts. These potential impacts are discussed under the technical topics of land use, traffic and transportation, socioeconomics, noise, and visual resources.

A. LAND USE

In the Revised Staff Assessment, Staff concluded that the Marsh Landing Project will be consistent with applicable LORS pertaining to State and local land use planning and will not generate a significant impact under the CEQA guidelines with respect to CEQA Appendix G issues, "Land Use and Planning" and "Agriculture Resources." (Exhibit 300, pp. 4.5-1 – 4.5-20.) Staff confirmed that the Marsh Landing Project will not be incompatible with existing on-site or nearby uses, as it is consistent with the general industrial character of existing permitted uses and development of the area. (*Id.*)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff analyzed the information provided in the AFC and acquired information from other sources, including local jurisdiction planning documents, to determine consistency of the Marsh Landing Project with applicable land use LORS and its potential to have significant adverse land use-related impacts. (Exhibit 300, pp. 4.5-7 – 4.5-8.) Staff utilized significance criteria based on CEQA Guidelines and performance standards or thresholds in applicable LORS utilized by other governmental regulatory agencies. (*Id.*) Staff concluded that an impact may be considered significant if the Marsh Landing Project would result in the conversion of farmland, if it would conflict with existing zoning for agricultural use or a Williamson Act contract, if it would result in physical disruption or division of an established community, or if it would conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction, over the Marsh Landing Project. (Id.) Staff concluded that the Marsh Landing Project will not have any of these impacts. We find that Staff's analysis is adequate to support our findings and conclusions in this Decision.

2. Conversion of Farmland. Staff determined that the Marsh Landing Project, including its associated linear facilities, are all located on lands designated as "Urban and Built-Up Land." (Exhibit 300, p. 4.5-8.) None of the land affected by the Marsh Landing Project is zoned for agricultural

uses. Staff concluded that the Marsh Landing Project will not convert any farmland (including farmland designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) to non-agricultural use. (*Id*.) Staff also concluded that neither the construction nor operational activities of the Marsh Landing Project will result in any impacts to existing agricultural operations or foreseeable future agricultural use. (*Id*.) The MLGS site also is not located in an area that is under a Williamson Act contract. (*Id.*) We find that the Marsh Landing Project will not result in the conversion of Farmland to non-agricultural use, or conflict with existing agricultural zoning or Williamson Act contracts.

3. Physical Disruption or Division of an Existing Community. Staff explained that the MLGS and the majority of its related facilities will be located within the boundaries of the site of the existing CCPP, which has been in its current location since the early 1950s. (Exhibit 300, p. 4.5-8.) The MLGS and all associated facilities will be located on lands designated and zoned for industrial uses. (*Id*.) The MLGS will be located entirely on private property and on existing parcels that contain uses and facilities related to the activities at the existing CCPP. (*Id*.) Access to the Marsh Landing Project (including the construction laydown/worker parking area) will be through existing rights-of-way and roadways internal to the CCPP. (*Id.*) The offsite portions of the wastewater pipeline will be constructed within an already disturbed existing right-of-way along Wilbur Avenue. (*Id.*) If any roadway closures are required during construction, the closures will be scheduled in accordance with applicable local requirements. (*Id.*) We find that the Marsh Landing Project will not disrupt or divide the physical arrangement of an established community.

4. Conflict with Any Applicable Land Use Plan, Policy, or Regulation. Staff concluded that development of the Marsh Landing Project is consistent with the goals and policies of the Contra Costa General Plan and the City of Antioch General Plan. (Exhibit 300, pp. 4.5-9 – 4.5-10.) The MLGS site is in the City of Antioch's Sphere-of-Influence in areas designated for future employment growth. (*Id*.) The City of Antioch is in the process of annexing the MLGS site. (*Id.*) The City of Antioch has expressed support for the Marsh Landing Project and has indicated that the future zoning of the MLGS site (subsequent to annexation) will be M-2 (Heavy Industrial) consistent with the Marsh Landing Project. (*Id.*) In Land Use Table 4 in the Revised Staff Assessment, Staff described the consistency of the Marsh Landing Project with all applicable land use LORS adopted by state and local agencies. (Id., pp. 4.5-11 – 4.5-16.) We find that the Marsh Landing Project will comply with applicable land use LORS.

5. Land Use Compatibility. Land use compatibility refers to the physical compatibility of planned and existing land uses. Staff confirmed that development of the MLGS and its associated features and facilities are compatible with existing surrounding land uses because the proposed MLGS site and construction laydown area are located entirely within an

existing power plant site (i.e., the CCPP), which has been in operation since the early 1950s. (Exhibit 300, p. 4.5-17.) Land uses at the existing CCPP site are industrial and are dominated by utility and energy infrastructure uses. (*Id*.) The MLGS site is also located near major transportation corridors, including highways and railroads. (*Id.*) We find that the Marsh Landing Project will not be incompatible with existing on-site or nearby uses, as it is consistent with the general character of existing permitted uses.

6. Sensitive Receptors. The area immediately surrounding the MLGS site includes uses associated with the existing CCPP and is dominated by heavy industrial uses and public utilities. There are no sensitive receptors in close proximity of the MLGS site. (Exhibit 300, pp. 4.5-17 – 4.5-18.) Given the existing permitted uses surrounding the MLGS site, and the fact that the MLGS and its associated features and facilities are consistent with local LORS (which are developed by local jurisdictions to mitigate impacts of planned development), the Marsh Landing Project is not an incompatible land use with the surrounding and nearby uses, including sensitive receptors. (*Id.*) We find that the Marsh Landing Project is compatible with surrounding industrial uses and will not result in any unmitigated public health or environmental impacts to sensitive receptors.

7. Cumulative Impacts. Staff considered the potential for the Marsh Landing Project to result in a significant adverse cumulative impact. (Exhibit 300, pp. 4.5-18 – 4.5-19.) Staff analyzed the incremental effects of the Marsh Landing Project when viewed in connection with the effects of past projects, other current projects, and probable future projects. (Id.) Staff notes that the Marsh Landing Project represents a similar land use type to adjacent uses and will not require a General Plan amendment, zoning amendment, or other changes or concessions that would alter the development standards, availability of permits, or use of the project site or surrounding properties. (*Id*.) The Marsh Landing Project will not make a significant contribution to regional impacts related to new development and growth. (*Id.)* The MLGS is planned to serve the existing and anticipated electrical needs of the population in Northern California by connecting to the existing electric system and other utility infrastructure. (Id.) Staff concluded that the land use effects of the Marsh Landing in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable. (*Id*.) We find that the Marsh Landing Project's cumulative land use impacts will be less than significant.

8. Compliance with LORS. Staff confirmed that the Marsh Landing Project is consistent with the applicable existing Contra Costa County Land Use LORS and with the City of Antioch Land Use LORS that would apply to the Marsh Landing Project upon annexation of the MLGS site to the City of Antioch. Compliance is described in more detail in Land Use Table 4 in the Revised Staff Assessment. (Exhibit 300, pp. 4.5-11 – 4.5-16.) We

find that the Marsh Landing Project is consistent with applicable land use LORS.

CONCLUSIONS OF LAW

1. Construction and operation of the Marsh Landing Project will not result in significant direct, indirect, or cumulative adverse land use impacts.
2. The record contains an adequate analysis of the land use LORS that are relevant to the Marsh Landing Project and establishes that the Marsh Landing Project will not create any unmitigated, significant adverse land use effects as defined under CEQA.
3. No Conditions of Certification are required for this topic area.

B. TRAFFIC AND TRANSPORTATION

This section addresses the potential for the Marsh Landing Project to affect the local transportation network. Staff analyzed the potential traffic and transportation impacts associated with construction and operation of the Marsh Landing Project, including its ancillary facilities. (Exhibit 300, pp. 4.10-1 – 4.10-14.) Staff evaluated the expected influx of construction workers and considered how the movement of construction workers could increase roadway congestion and affect traffic flow. *(Id.*) Staff considered potential traffic and transportation impacts during operation of the MLGS as compared with current conditions. (Id.) Staff considered potential impacts from the transportation of hazardous materials required for the Marsh Landing Project in its Traffic and Transportation Analysis and in its Hazardous Materials analysis. (*Id.*, pp. 4.10-1 – 4.10-14; pp. 4.4-1 – 4.4-30.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Construction Traffic Impacts. Staff's analysis showed that the anticipated average and peak increase in workforce and truck traffic during construction of the Marsh Landing Project will not be a major change when compared to existing conditions on local roadways and will not cause the level of service (a description of a driver's experience at an intersection or roadway based on the level of congestion) on local roads to deteriorate. (Exhibit 300, p. 4.10-7, **Traffic and Transportation Table 3**.) Staff nevertheless proposed mitigation in Condition of Certification **TRANS-1**, which requires, with participation of the Contra Costa County Public Works Department, the development and implementation of a construction traffic control plan that includes a requirement for workers to arrive at the MLGS site during off-peak traffic hours. *(Id.,* p. 4.10-6.) Staff also proposed Condition of Certification **TRANS-2** which requires the project owner to repair any damage to Wilbur Avenue that may be caused by construction of the Marsh Landing Project. (*Id.*) Staff analyzed traffic and transportation impacts associated with the hazardous wastes to be generated during construction of the Marsh Landing Project. Staff concluded that the transportation and handling of hazardous substances associated with the MLGS may increase the potential for roadway hazards, but these potential impacts will be mitigated to insignificance through compliance with federal and state standards that regulate the transportation of hazardous substances. (*Id.*, pp. 4.10-7 – 4.10-8, 4.4-21 – 4.4-22.) Staff included Conditions of Certification **HAZ-1** through **HAZ-6** that ensure this compliance. *(Id.*, pp. 4.4-22 – 4.4-23.) We find that

construction of the Marsh Landing Project will not result in any significant adverse traffic or transportation impacts.

2. Railways. Staff analyzed potential impacts on railways in the Marsh Landing Project area. (Exhibit 300, pp., 4.10-6 – 4.10-7.) Freight rail service currently serves various industrial uses in proximity to the MLGS site and the Marsh Landing Project will utilize nearby rail facilities to transport heavy equipment. (*Id.*) Staff found that addition of the Marsh Landing Project will not result in significant adverse traffic impacts related to existing railway facilities. *(Id.)* We adopt Staff's finding.

3. Construction of Linear Facilities. Staff analyzed potential impacts associated with construction of a new wastewater line that will require trenching within or along Wilbur Avenue heading east to a connection with the City of Antioch's sewer main. (Exhibit 300, p. 4.10-7.) This work will require alternating partial road closure. Staff found that these closures and other mitigation measures such as signage or flagman will be implemented in accordance with applicable local requirements. (*Id.*) We find that construction of the MLGS linear facilities will not create a significant adverse traffic or transportation impact.

4. Operational Traffic Impacts. Staff considered potential traffic and transportation impacts associated with operation of the MLGS. (Exhibit 300, pp. 4.10-8 – 4.10-9.) During operation, the MLGS will have approximately 16 full-time employees. Staff confirmed that adequate parking will be available for these employees on the MLGS site. (*Id.*) Staff concluded that commute traffic from the MLGS will not create any significant adverse impacts on the existing state highway and county roadway system. (*Id.*) Staff also considered truck traffic during the operational phase and concluded that the transportation and handling of hazardous substances associated with the MLGS could increase roadway hazard potential. (*Id.*) Operation of the MLGS will require approximately two deliveries per week of aqueous ammonia solution. (*Id.*) Licensed hazardous waste transporters will access the MLGS site via Wilbur Avenue. The close proximity of the MLGS to SR-160 and SR-4 avoids the need to transport hazardous wastes along residential streets. (*Id.*) Staff concluded that truck traffic and the transportation of hazardous materials during operation of the MLGS will not have a significant adverse impact on the existing state highway and county roadway system. (*Id.*) Staff also concluded that potential impacts of the transportation of hazardous substances will be mitigated to insignificance by compliance with federal and State standards regulating the transportation of hazardous substances. (*Id.*) We find that operation of the Marsh Landing Project will not have a significant adverse impact on the local and regional road or highway network.

5. Operation of Linear Facilities. Staff confirmed that the operation of linear facilities that would serve the proposed MLGS is not expected to have any impacts on area roadways except for short-term maintenance or

unplanned difficulties. (Exhibit 300, p. 4.10-8 – 4.10-9.) Staff found that in either case, any impacts to traffic flow will be limited in duration and will not cause any significant traffic impacts. *(Id.)* We adopt Staff's finding.

6. Cumulative Impacts. Staff considered the potential for the Marsh Landing Project to result in significant cumulative adverse traffic and transportation impacts in combination with other existing and probable future projects. (Exhibit 300, p. 4.10-9.) There are two existing power plants adjacent to the MLGS site – the CCPP and the GGS. Staff also considered upcoming road projects on Wilbur Avenue and the expected construction of a new Bay Area Rapid Transit line from the City of Pittsburg to City of Antioch. (*Id.)* Combined with the relatively low density of other surrounding land uses, the addition of only 16 full-time employees, and the adequate roadway capacity on Wilbur Avenue, Staff found that the Marsh Landing Project will not create any significant adverse cumulative impacts on traffic and transportation. (*Id.)* We adopt Staff's finding.

7. Environmental Justice. Staff considered the potential for the Marsh Landing Project to create a disproportionate significant adverse impact on minority and low income populations in its traffic impact analysis. (Exhibit 300, p. 4.10-9.) Staff found that the Marsh Landing Project will not result in any significant direct, indirect, or cumulative adverse traffic and transportation impacts, and therefore does not present any environmental justice issues. *(Id.)* We adopt Staff's finding.

8. Compliance With LORS. Staff concluded that the Marsh Landing Project will be consistent with all applicable LORS identified in Traffic and Transportation Table 4 in the Revised Staff Assessment. (Exhibit 300, 4.10-9.) Staff concluded that the Marsh Landing Project will be consistent with the Circulation Element in the Contra Costa General Plan and will comply with all applicable LORS related to ground and air traffic. (*Id.*) We find that the Marsh Landing Project will be consistent with all applicable LORS related to traffic and transportation.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Marsh Landing Project complies with all applicable LORS regarding traffic and transportation as identified in the Traffic and Transportation section of the Revised Staff Assessment.

2. Construction and operation of the Marsh Landing Project will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system.

3. We adopt the Conditions of Certification that are specified in the Traffic and Transportation section of the Revised Staff Assessment and identified as **TRANS-1** and **TRANS-2**.

C. SOCIOECONOMICS

This section considers whether construction and operation of the Marsh Landing Project will cause significant direct, indirect, or cumulative adverse socioeconomic impacts on the local area's housing, schools, law enforcement, emergency medical services, or parks. Staff evaluated these issues in its Revised Staff Assessment and concluded that no such significant adverse impacts will occur. (Exhibit 300, pp. 4.8-1 – 4.8-13.) Staff also concluded that the Marsh Landing Project will not induce substantial growth or concentration of population, induce substantial increases in demand for housing or public service, or displace a large number of people. *(Id.)*

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff evaluated the Marsh Landing Project's potential socioeconomic impacts based on the questions specified in Appendix G of the CEQA Guidelines, as shown in Table 2 in the Socioeconomics section of the Revised Staff Assessment. (Exhibit 300, p. 4.8-3.) Staff's analysis of potential impacts on population, housing, emergency medical services, police protection, schools, and parks and recreation, reflects professional judgments, input from local and state agencies, and the industry-accepted two-hour commute range for construction workers. (*Id.*) We find that Staff's evaluation of socioeconomics impacts as set forth in the Revised Staff Assessment is adequate to support our findings and conclusions.

2. Induce Substantial Population Growth. Staff considered the Marsh Landing Project's potential to induce substantial population growth. (Exhibit 300, pp. 4.8-4 – 4.8-5.) Staff defines "induce substantial population growth" to mean causing workers to permanently move into the project area because of project construction and operation, thereby encouraging construction of new homes or extension of roads or other infrastructure. (*Id.*) Workers are expected to commute to the Marsh Landing site from the surrounding counties. Staff concluded that the construction and operation workforce will not induce substantial growth or concentration of population, and that the Marsh Landing Project will not encourage people to permanently move into the area due to an adequate local and regional construction labor force. *(Id.,* p. 4.8-9.) We find that the Marsh Landing Project will not cause an influx of a significant number of construction or operation workers into the local area. We find that the Marsh Landing Project will not result in a significant adverse direct or indirect impact on population growth.

3. Housing Supply. Staff considered potential impacts on the region's housing supply. (Exhibit 300, p. 4.8-5.) Staff concluded that because of the large labor force within commuting distance of the MLGS site, the

majority of construction workers are likely to commute to the MLGS site daily from their existing residences. *(Id.)* Approximately 10 percent of the construction workforce may temporarily relocate within commuting distance of the MLGS site and return to their homes on the weekends. (*Id.)* The MLGS will have 16 full-time employees that are likely to live within commuting distance of the MLGS site. *(Id.)* Because there is an adequate existing labor force in communities that are within commuting distance of the MLGS site, Staff does not expect employees to relocate to the immediate project area. (*Id.*) Even if all 16 full-time employees were to relocate to Contra Costa County, only 16 dwelling units would be needed. (*Id.)* We find that the Marsh Landing Project's construction and operation workforce will not have a significant adverse impact on the housing supply within the immediate area or surrounding regions.

4. Displace Existing Housing and Substantial Numbers of People. Staff considered the potential for the Marsh Landing Project to displace existing housing or substantial numbers of people. (Exhibit 300, pp. 4.8-5 – 4.8-6.) The MLGS will be located on a 27-acre site that is entirely within the current site of the CCPP. The MLGS site is zoned Heavy Industrial by Contra Costa County. The Contra Costa General Plan designates the majority of the MLGS site as Heavy Industrial. *(Id.)* We find that the Marsh Landing Project will not result in the displacement of existing housing or substantial numbers of people.

5. Result in Substantial Physical Impacts to Government Facilities. Staff analyzed whether the Marsh Landing Project will result in substantial physical impact to governmental facilities. (Exhibit 300, pp. 4.8-6 – 4.8-8.) Staff considered potential impacts on emergency medical services, law enforcement, and schools. *(Id.)* Staff determined that the Marsh Landing Project will not cause significant impacts to service ratios, response times, or other performance objectives relating to emergency medical services, law enforcement, or schools. (*Id*.) This reflects Staff's determinations that: (1) emergency medical services provided by Contra Costa County Fire Protection District and the surrounding hospitals will be adequate such that construction and operation of the Marsh Landing Project will not require construction of new or physically altered emergency medical facilities; (2) existing law enforcement resources will be adequate to provide services during construction and operation such that the Marsh Landing Project will not require new or physically altered law enforcement facilities; and (3) given the small number of students who potentially could relocate to schools within the local school district, construction and operation of the Marsh Landing Project will not create significant adverse socioeconomic impacts on educational resources. *(Id.)* Staff proposed Condition of Certification SOCIO-1 to ensure payment of the one-time school impact fee that is required under applicable LORS. (*Id.)* We find that the Marsh Landing Project will not have a significant adverse effect on governmental facilities, including emergency medical services, law enforcement and schools.

6. Increase the Use of Existing Recreation Facilities. Staff evaluated the Marsh Landing Project's potential impacts on recreation facilities. (Exhibit 300, p. 4.8-8.) The Contra County Department Parks and Recreation maintains a variety of recreation buildings, community centers, trails and a historic park. (*Id.*) The community park amenities include playgrounds, picnic tables and barbeques, tennis courts, volleyball courts, sports court and basketball courts. (*Id.*) As discussed above, Staff does not expect MLGS employees to relocate to the immediate MLGS area, where a variety of park facilities already exists. Staff concluded that the Marsh Landing Project will not require construction of new parks or substantially increase the use of existing parks. (*Id.)* We find that the Marsh Landing Project will not result in a significant adverse impact on parks and recreation facilities.

7. Cumulative Impacts. Staff evaluated potential cumulative impacts associated with the Marsh Landing Project. (Exhibit 300, pp. 4.8-8 – 4.8-9.) In a socioeconomic analysis, cumulative impacts could occur when projects in the same area have overlapping construction schedules, thus creating a demand for workers that cannot be met locally. (*Id.*) Increased demand for labor could result in an influx of non-local workers and their dependents, resulting in a strain on housing, schools, parks and recreation, law enforcement, and emergency services. (*Id.*) Staff evaluated the Marsh Landing Project in connection with other projects proposed for construction in the region. (*Id.)* Staff concluded that the potential for a high worker demand that would require an influx of workers from out of the area and lead to stress on public facilities and utilities is counterbalanced by the current economic recession, which has affected the building trades industries particularly hard. (*Id.*) Because of the robust local and regional construction labor force, Staff does not expect an influx of non-local workers and their dependents to the project area. (*Id.)* Therefore, although several projects could require a labor supply for construction in roughly the same time period, there is a sufficient supply of skilled labor in Contra Costa County and other nearby counties. (*Id.*) We find that construction and operation of the Marsh Landing Project will not cause significant direct, indirect or cumulative adverse socioeconomic impacts on the area's housing, schools, law enforcement, emergency services and parks.

8. Noteworthy Public Benefits. Staff found that the Marsh Landing Project will have benefits on the local economy through purchases of supplies and services for the Marsh Landing Project and employees' use of their wages to purchase goods and services from other businesses. (Exhibit 300, p. 4.8-9 – 4.8-10.) Those businesses also make purchases and hire employees, who also spend their salaries and wages throughout the local and regional economy. (*Id.)* This effect of indirect (jobs, sales, and income generated) and induced (employees' spending for local goods and services) spending continues with subsequent rounds of additional spending, which is gradually diminished through savings, taxes, and

expenditures made outside the area. (*Id.*) The specific economic benefits of the Marsh Landing Project are shown in the Revised Staff Assessment in Socioeconomics Table 6. (Id., p. 4.8-10.) We find that the Marsh Landing Project will provide public benefits associated with employment and income for the area and region. We find that the Marsh Landing Project will result in local direct, indirect, and induced benefits that are both fiscal and non-fiscal.

9. Property Tax. Staff determined that the current property tax rate for the CCPP site is 1.12 percent. (Exhibit 300, pp. 4.8-10 – 4.8-11.) The current assessed value of the MLGS site is $47,326,279. (Id.) The MLGS site is estimated to currently yield approximately $530,054 in local property tax revenues to Contra Costa County annually. (*Id.*) Construction of the Marsh Landing Project will add approximately $550 million to the current assessment value of $47 million. (Id.) Using the property tax rate of 1.12 percent, Staff estimates that the increase in property tax revenue for the Marsh Landing Project will be as much as $6 million. (*Id*.) We find that the Marsh Landing Project will provide tax benefits to the local community.

10. Environmental Justice Analysis. Staff evaluated potential environmental justice aspects of the Marsh Landing Project to determine whether activities related to the Marsh Landing Project would result in disproportionate impacts on low income and/or minority populations. (Exhibit 300, p. 4.8-2.) Staff considered potential environmental justice issues in several parts of its environmental analysis for the Marsh Landing Project, as discussed throughout this Decision, and found that the Marsh Landing Project will not have any significant direct, indirect, or cumulative adverse impacts on the population. We find that federal environmental justice guidelines are not binding in this case. Nevertheless, the analysis of record has been performed in conformity with those guidelines. Although some minority and low income populations exist within a six mile radius of the MLGS site, Staff's analysis demonstrates that the Marsh Landing Project will not cause or contribute to disproportionate impacts on minority or low income groups. We find that our approval of the Marsh Landing Project, and the analysis thereof, are consistent with the principles underlying environmental justice.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Marsh Landing Project's construction and operation activities will create benefits to the local area and conform to principles of environmental justice.

2. No significant adverse socioeconomics impacts will occur as a result of construction and operation of the Marsh Landing Project.

3. The evidence of record contains an adequate analysis of socioeconomic effects related to the Marsh Landing Project and establishes that the Marsh Landing Project will create no significant adverse socioeconomic effects as defined under CEQA.

4. The evidence of record contains an adequate analysis of potential socioeconomic effects related to the Marsh Landing Project pursuant to federal and state guidelines concerning environmental justice and establishes that the Marsh Landing Project will create no disproportionate adverse effects on minority or low-income populations.

5. We adopt the Condition of Certification that is specified in the Socioeconomics section of the Revised Staff Assessment and identified as **SOCIO-1**.

D. NOISE AND VIBRATION

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts.

Staff analyzed the potential noise impacts associated with construction and operation of the Marsh Landing Project. (Exhibit 300, pp. 4.6-1 – 4.6-25.) Staff concluded that the Marsh Landing Project can be built and operated in compliance with all applicable noise and vibration LORS and, with Staff's proposed Conditions of Certification **NOISE-1** through **NOISE-6**, will produce no significant adverse noise impacts on people within the affected area, either direct, indirect, or cumulative. (*Id.*) Staff also concluded that the Marsh Landing Project will comply with all applicable noise and vibration LORS and, with implementation of Staff's Conditions of Certification, will not produce any significant adverse noise impacts on people within the project area, including any minority population, directly, indirectly, or cumulatively. (*Id.*)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Analysis. Staff conducted its analysis of potential noise impacts according to CEQA and Appendix G of the CEQA Guidelines. (Exhibit 300, pp. 4.6-5 – 4.6-7.) Staff analyzed noise levels according to the "A-weighted" decibel scale (dBa), which is cited in most noise criteria. *(Id.,* p. 4.6-21.) In general, Staff considers the potential for a significant noise impact to exist if a project's noise, plus background noise, exceeds the background by 5 dBA or more at the nearest sensitive receptor. (*Id.,* pp. 4.6-5 – 4.6-7.) Staff considers an increase in background noise levels up to 5 dBA in a residential setting to be insignificant. Staff considers an increase of more than 10 dBA to be significant. Staff explained that an increase between 5 and 10 dBA could be significant or insignificant, depending on the circumstances. (*Id.)* Noise due to construction activities is considered to be insignificant in terms of CEQA compliance if the construction activity is temporary, the use of heavy equipment and noisy activities are limited to daytime hours, and all industry-standard noise abatement measures are implemented for noise-producing equipment. (*Id.)* We find that Staff's analysis as set forth in the Revised Staff Assessment is sufficient to support our findings and conclusions herein.

2. Ambient Noise Monitoring. Staff evaluated Mirant Marsh Landing's ambient noise survey and monitored existing noise levels at two locations that reflect the nearest sensitive receptors to the MLGS site. (Exhibit 300, p. 4.6-7.) Staff determined that long-term (25-hour) monitoring showed ambient noise levels typical of an industrial environment. Staff also evaluated the results of a 25-hour Community Noise Survey conducted for the GGS when it commenced operating in January 2009. *(Id.)* We find that these noise surveys established an appropriate baseline for comparison of Marsh Landing Project noise to existing ambient noise.

3. Construction Impacts and Mitigation. Construction of the Marsh Landing Project is expected to be typical of similar projects in terms of schedule, equipment used, and other types of activities. (Exhibit 300, p. 4.6-7 – 4.6-10.) Staff reviewed predicted noise levels for construction of the Marsh Landing Project and summarized the predictions in Noise Table 4 in the Revised Staff Assessment. *(Id.,* p. 4.6-8.) Staff determined that the current applicable local noise LORS do not limit construction noise levels. The City of Antioch Noise Ordinance, which does not currently apply but will apply if annexation is completed, limits noisy construction to daytime hours. *(Id.)* Staff considered potential CEQA impacts and concluded that the highest increase in the ambient noise levels during construction at the noise-sensitive receptors would be 1 dBA, which is not detectable. (*Id.*) Staff found that the noise effects of the Marsh Landing Project construction activities will be less than significant at those receptors. (Id.) Staff proposed several Condition of Certification to mitigate potential construction noise impacts on the public and workers, including **NOISE-1, NOISE-2,** and **NOISE-6**, which limits the hours when heavy equipment operation and noisy construction work can occur. *(Id*.) We find that with Staff's proposed Conditions of Certification, the Marsh Landing Project construction activities will comply with applicable noise LORS and will not result in a significant adverse noise impact.

4. Pile Driving. Staff analyzed the effects of pile driving noise in case it is found to be required for construction of the Marsh Landing Project. (Exhibit 300, p. 4.6-9.) If pile driving is required, the noise from this operation could produce a noticeable impact, but Staff determined that limiting pile driving to daytime hours, in conjunction with its temporary nature, will not create significant adverse impacts to nearby residents. (*Id*.) As noted above, Staff's proposed Condition of Certification **NOISE-6** will limit noisy construction activities, including pile driving, to daytime hours. We find that the measures contained in the Conditions of Certification and compliance with local LORS will ensure that pile driving activities are mitigated to below a level of significance.

5. Worker Effects. Staff determined that compliance with applicable LORS will protect construction workers from adverse noise effects. (Exhibit 300, p. 4.6-10.) Staff proposed Condition of Certification **NOISE-3** to ensure that workers are adequately protected. (*Id.*) We find that noise

associated with the Marsh Landing Project's construction activities will not result in a significant adverse impact to workers.

6. Operation Impacts and Mitigation. The primary noise sources during operation of the MLGS will be the combustion turbine generators, compressors, selective catalytic reduction (SCR) exhaust stack, and transformers. Staff evaluated noise levels for operation and compared the projected noise levels with applicable LORS. Staff confirmed that noise levels during operation will comply with applicable LORS. (Exhibit 300, pp. 4.6-10 – 4.6-13, Noise Table 6.) Staff also evaluated any increase in noise levels at sensitive receptors based on the results of Mirant Marsh Landing's modeling analysis. (*Id.*, p. 4.6-11.) Staff found that operation of the Marsh Landing Project could increase noise levels at one sensitive receptor and recommended that noise levels be reduced with the requirements in Staff's proposed Condition of Certification **NOISE-4**. Staff also proposed Condition of Certification **NOISE-5** to protect workers. (*Id.,* pp. 4.6-11 – 4.6-13.) With implementation of its proposed Conditions of Certification, Staff found that operation of the MLGS will not significantly increase noise levels above existing ambient levels in the surrounding community and therefore will not create a significant adverse noise impact on the public or workers. (*Id.)* We adopt Staff's finding.

7. Cumulative Impacts. Staff analyzed potential cumulative noise impacts from the Marsh Landing Project. (Exhibit 300, p. 4.6-13.) Staff concluded that other projects in the vicinity of the MLGS would not be expected to impact noise levels in the area. *(Id.)* Staff concluded that the noise impacts of the existing operating power plants were accounted for in its analysis. *(Id.)* We find that the Marsh Landing Project will not have any significant adverse noise impacts.

8. Facility Closure. Staff concluded that noise generated during the future closure of the MLGS will be similar to that caused by the original construction. (Exhibit 300, p. 4.6-13.) This work will be required to comply with any applicable noise LORS in existence at that time. Conditions of Certification included in this Decision also will apply unless modified. (*Id.*)

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

1. The Conditions of Certification adopted below ensure that the Marsh Landing Project complies with the applicable LORS on noise and vibration as set forth in the Noise and Vibration section of the Revised Staff Analysis, and will not cause any significant direct, indirect, or cumulative adverse noise impacts.

2. We adopt the Conditions of Certification that are specified in the Noise and Vibration section of the Revised Staff Assessment and identified as **NOISE-1** through **NOISE-6**.

E. VISUAL RESOURCES

Visual resources are the features of the landscape that contribute to the visual character or quality of the environment. Staff analyzed the Marsh Landing Project's potential visual impacts to determine whether: (1) construction and operation would cause an aesthetic impact under CEQA; and (2) the Marsh Landing Project would comply with applicable LORS pertaining to aesthetics or preservation and protection of sensitive visual resources. (Exhibit 300, pp. 4.12-1 – 4.12-32.) Staff assessed potential visual impacts during operation by evaluating seven Key Observation Points or KOPs. (*Id.*, pp. 4.12-5 - 4.12-6.) Staff concluded that its selected KOPs represent the most critical locations from which the Marsh Landing Project would be viewed and the key sensitive viewer groups most likely to be affected. (*Id.*) Staff concluded that, with implementation of Staff's recommended Conditions of Certification, construction and operation of the Marsh Landing Project will not result in significant adverse visual impacts and will comply with applicable LORS. (*Id*., pp. 4.12-1, 4.12-24 – 4.12-25.)

Based on the Revised Staff Assessment and other evidence in the record, we find and conclude as follows.

FINDINGS OF FACT

1. Scenic Vistas. Staff considered whether the Marsh Landing Project will have a significant adverse effect on any scenic vista, defined as a distant view through and along a corridor or opening that exhibits a high degree of pictorial quality. (Exhibit 300, pp. 4.12-6 – 41.2-7.) Staff found that there are no scenic vistas in the relevant view sheds, based on Staff's field reconnaissance, review of topographical maps, and review of the Contra County's General Plan documents. (Id.) In addition, there are no scenic vistas designated by Contra Costa County or the City of Antioch. (*Id*.) Staff found that the Marsh Landing Project therefore will not cause a significant visual impact to a scenic vista. We adopt Staff's finding.

2. Scenic Resources. Staff' considered whether the Marsh Landing Project will have a significant adverse effect on any scenic resource, defined to include a unique water feature or physical geological terrain feature, a tree having a unique visual/historical importance to a community, an historic building, or other scenically important physical features. (Exhibit 300, pp. 4.12-7.) Staff found that nearby State Route 160 (SR 160) is a designated State Scenic Highway, and State Route 4 east of the Antioch Bridge is eligible for designation as a State Scenic Highway. Scenic corridor controls applied to SR 160 by Sacramento County (the responsible agency) are limited to a sign ordinance. *(Id.)* Staff also identified the San Joaquin River as a scenic resource. (*Id.)* Staff found that the Marsh Landing Project will not result in substantial damage to scenic resources. (*Id.)* We adopt Staff's finding.

3. Visual Character or Quality – Construction Impacts. Staff considered whether the Marsh Landing Project will substantially degrade the existing visual character or quality of the site and its surroundings (Exhibit 300, pp. 4.12-7 -4.12-8.) Staff found that equipment and material storage will be prominent and the effect potentially adverse during project construction. *(Id.)* In the worst case, prominent and unsightly construction staging at this location could result in temporary impacts to viewers on Wilbur Avenue and recreational viewers along the San Joaquin River. *(Id.)* Staff also found that trenching for cut-and-cover construction of the wastewater discharge pipeline along Wilbur Avenue will create a temporary visual disturbance. *(Id.)* Staff found that other construction activities will be largely screened from off-site viewpoints by the three existing storage tanks on the southwest boundary of the property site, and tree line along Wilbur Avenue. (*Id.*) Considering the moderate existing visual quality of this segment of Wilbur Avenue, the fleeting nature of views within it, the relatively limited number of affected viewers, and the temporary nature of impacts, these effects are considered to be less than significant. *(Id.)* To address the potential adverse impacts of construction and construction staging, staff recommends Condition of Certification **VIS-2** provides for planting of landscape screening during early stages of project construction and other screening while the landscape screening matures. (*Id.)* With Staff's proposed Condition of Certification, we find that construction will not result in a significant adverse visual impact.

4. Visual Character or Quality – Operation Impacts. As described above, Staff assessed operational impacts by considering visual impacts at seven KOPs. Staff's detailed analysis of visual sensitivity and visual change from each of the seven KOPs is described in the Revised Staff Assessment. (Exhibit 300, pp. 4.12-8 – 4.12-19.) Staff determined that project operation impacts from all identified KOPs on the existing visual character and quality of the setting would be less than significant with Mirant Marsh Landing's and Staff's recommended color mitigation (as reflected in Condition of Certification **VIS-1**), perimeter landscape screening (as reflected in Condition of Certification **VIS-2**), and lighting mitigation (as reflected in Condition of Certification **VIS-3**). We find that with these measures, the impacts from the Marsh Landing Project during operation will not substantially degrade the existing visual character or quality of the site and its surroundings, as perceived by sensitive receptors in the project viewshed. We find that operation of the Marsh Landing Project will not result in a significant adverse visual impact.

5. Light or Glare. Staff considered whether the Marsh Landing Project will create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. (Exhibit 300, pp. 4.12-19 – 4.12-20.) Staff found that with implementation of Staff's proposed Condition of Certification **VIS-4**, which provides for adequate screening and shielding of night lighting, the Marsh Landing Project will comply with applicable LORS for night time lighting and will not create a new source of light or

glare that will adversely affect views in the area. (*Id*.) We adopt Staff's finding.

6. Impact of Combustion Exhaust Stack Plumes. The proposed MLGS will not include wet-cooling towers, which are typically responsible for the largest and most frequent visible plumes from power plant projects. (Exhibit 300, p. 4.12-20.) Visible plumes from the MLGS exhaust stacks could occur but at much lower magnitudes and frequencies than from wet-cooling systems. (*Id.*) Staff determined that visible plumes from the MLGS exhaust stacks will be less than significant. However, to avoid potential impacts from nighttime plumes, Staff's proposed Condition of Certification **VIS-3**, which prohibits up-lighting from the MLGS. *(Id.)* We find that the Marsh Landing Project will not result in a significant adverse visual impact due to plumes.

7. Cumulative Impacts. Staff considered the potential for significant adverse cumulative impacts to occur due to visual effects of the Marsh Landing Project. (Exhibit 300, pp. 4.12-20 – 4.12-21.) A significant cumulative impact would depend on the degree to which (1) the viewshed is altered, (2) view of a scenic resource is impaired, or (3) visual quality is diminished. *(Id.)* The Marsh Landing Project will be built in an industrialized area with limited, scattered residences. (*Id.)* There are no identified scenic resources or vistas in the viewsheds. *(Id*.) The Marsh Landing Project will add to the existing industrial character of the viewshed along the San Joaquin River shoreline, but Staff's recommended Conditions of Certification **VIS-2** will mitigate all potential cumulative impacts. (*Id.*) Staff also concluded that impacts will not appreciably alter the existing industrial landscape character and considers the Marsh Landing Project's project contribution to the cumulative industrial landscape character of the viewshed to be minimal and less than significant. We find that the visual effects of the Marsh Landing Project in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable.

8. Compliance with LORS. **Visual Resources Table 2** in the Revised Staff Assessment provides an analysis of the applicable LORS pertaining to aesthetics or preservation and protection of sensitive visual resources relevant to the Marsh Landing Project. (Exhibit 300, pp. 4.12-22 – 4.12-24.) With implementation of Staff's proposed Conditions of Certification, we find that the Marsh Landing Project will comply with all applicable LORS in this area.

CONCLUSIONS OF LAW AND CONDITIONS OF CERTIFICATION

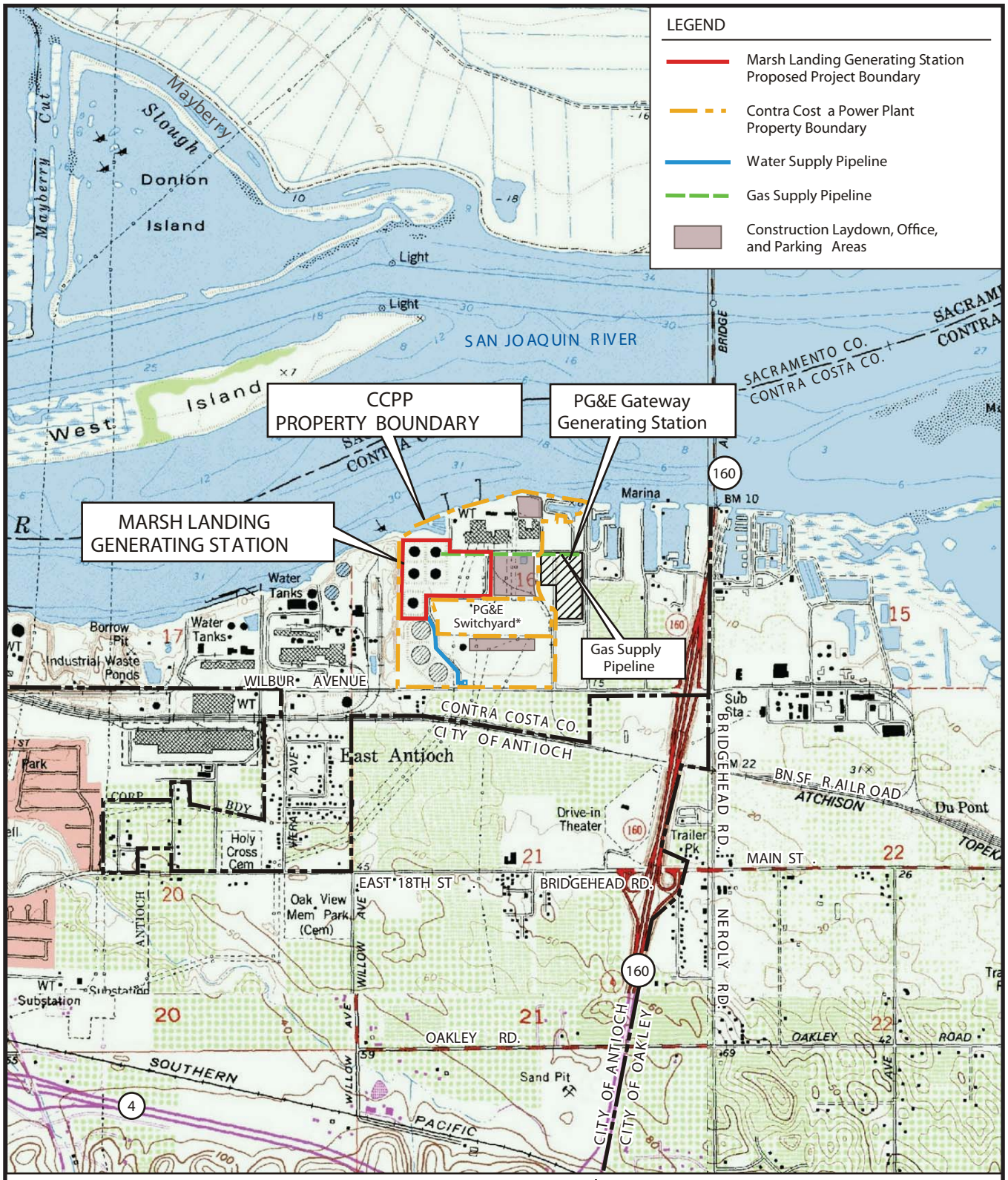
1. The Conditions of Certification adopted below ensure that the Marsh Landing Project will not cause any significant direct, indirect, or cumulative adverse impacts to visual resources.

2. The Marsh Landing Project complies with all applicable LORS regarding project design, architecture, landscaping, signage, and other requirements related to Visual Resources.

3. We adopt the Conditions of Certification that are specified in the Visual Resources section of the Revised Staff Assessment and identified as **VIS-1** through **VIS-3**.

PROJECT DESCRIPTION - FIGURE 1-1

Marsh Landing Generating Station - Project Location Map



Source:
USGS Topographic Maps, 7.5 Minute Series:
Antioch North, California, 1978
Antioch South, California, 1980
Jersey Island, California, 1978
Brentwood, California, 1978

0 2,000 4,000

Scale in Feet
1:24,000

N

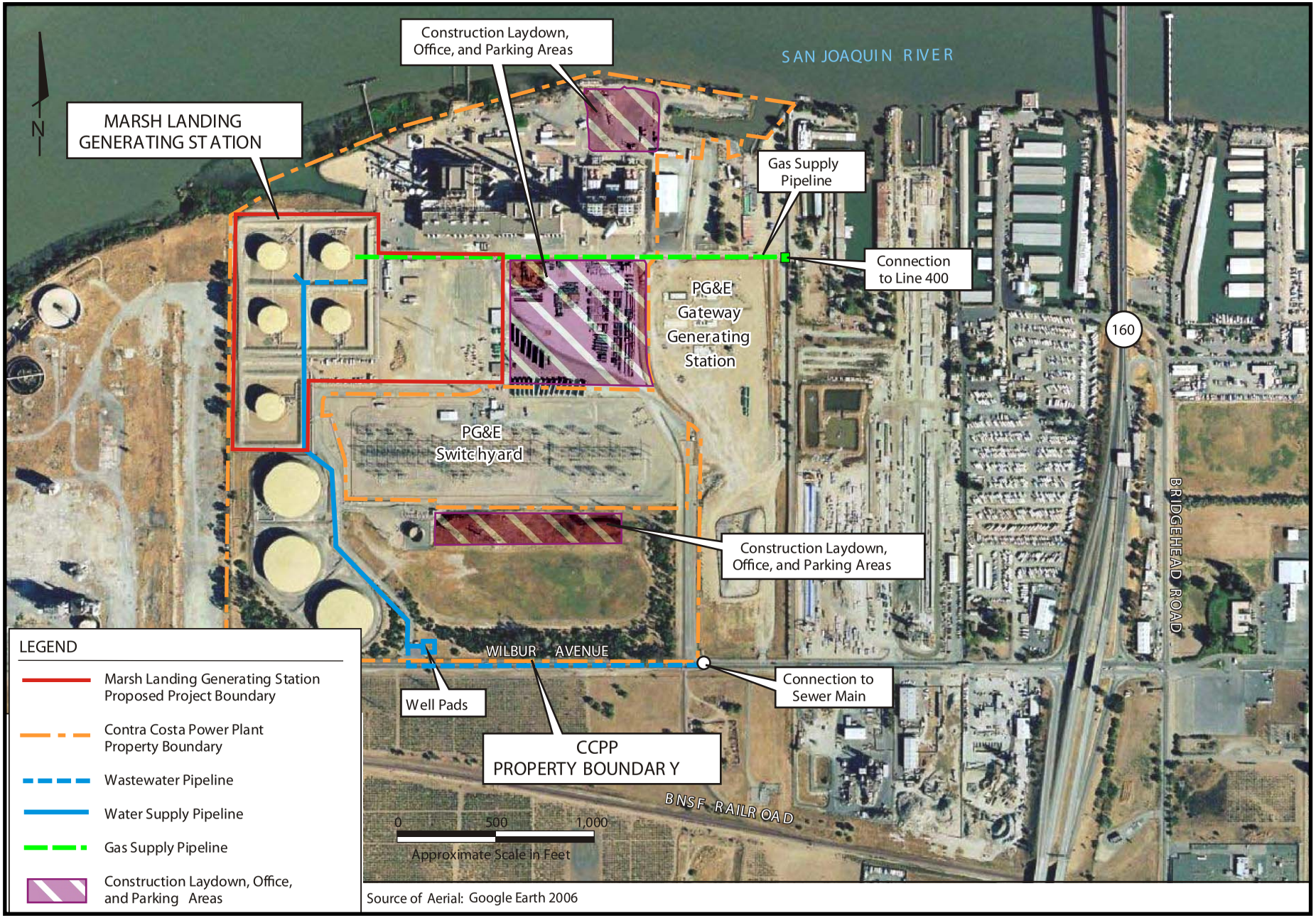
* The PG&E Switchyard and PG&E Gateway Project are not part of the Mirant Property .

PROJECT DESCRIPTION - FIGURE 1-2

Marsh Landing Generating Station - Site Vicinity Map

PROJECT DESCRIPTION - FIGURE 1-3

Marsh Landing Generating Station - Site Plan



Source of Aerial: Google Earth 2006

PROJECT DESCRIPTION - FIGURE 1-4

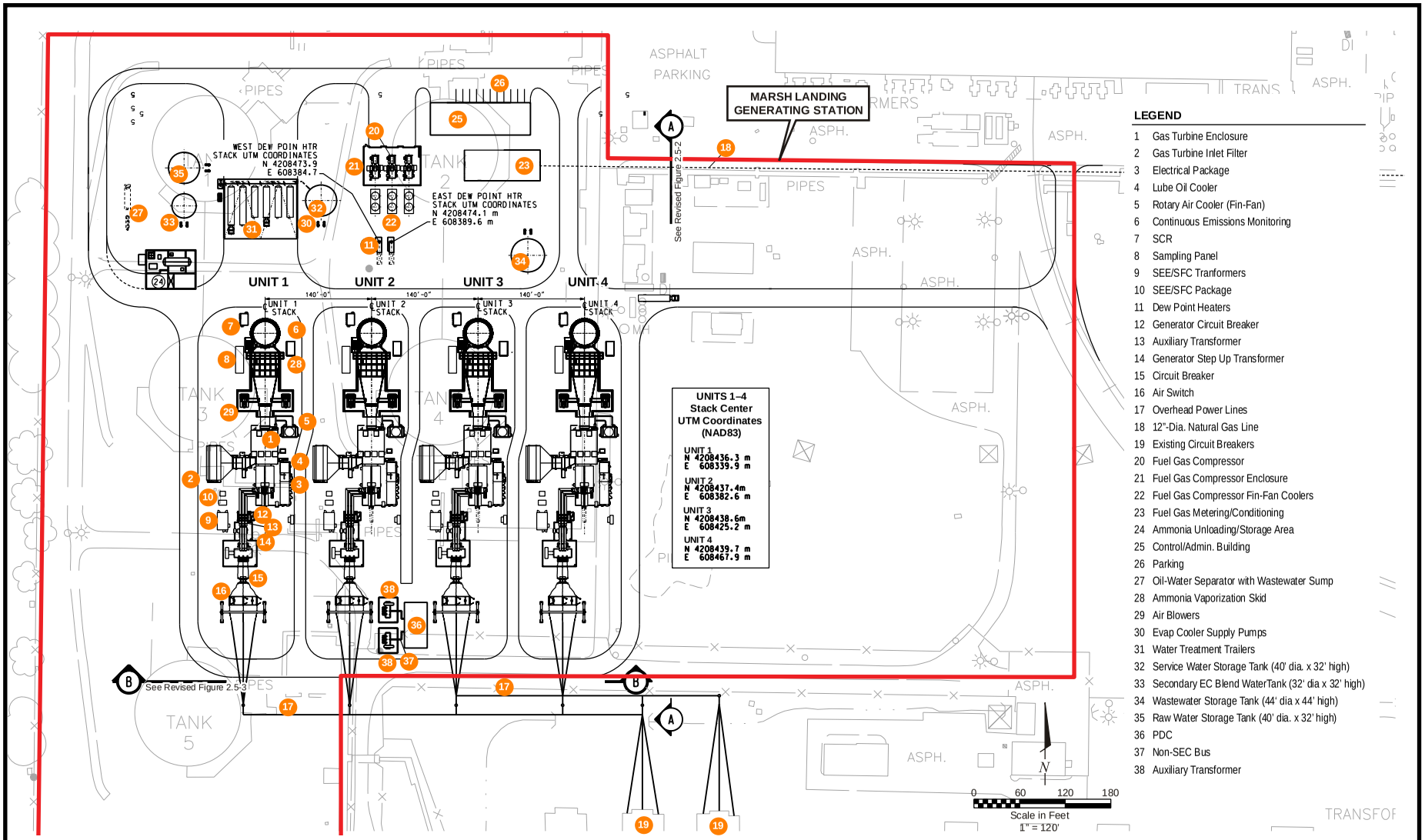
Marsh Landing Generating Station - Existing Facility and Visual Simulation

Existing Facility

Visual Simulation

PROJECT DESCRIPTION - FIGURE 1-5

Marsh Landing Generating Station - General Plot Plan



LEGEND

1 Gas Turbine Enclosure
2 Gas Turbine Inlet Filter
3 Electrical Package
4 Lube Oil Cooler
5 Rotary Air Cooler (Fin-Fan)
6 Continuous Emissions Monitoring
7 SCR
8 Sampling Panel
9 SEE/SFC Tranformers
10 SEE/SFC Package
11 Dew Point Heaters
12 Generator Circuit Breaker
13 Auxiliary Transformer
14 Generator Step Up Transformer
15 Circuit Breaker
16 Air Switch
17 Overhead Power Lines
18 12"-Dia. Natural Gas Line
19 Existing Circuit Breakers
20 Fuel Gas Compressor
21 Fuel Gas Compressor Enclosure
22 Fuel Gas Compressor Fin-Fan Coolers
23 Fuel Gas Metering/Conditioning
24 Ammonia Unloading/Storage Area
25 Control/Admin. Building
26 Parking
27 Oil-Water Separator with Wastewater Sump
28 Ammonia Vaporization Skid
29 Air Blowers
30 Evap Cooler Supply Pumps
31 Water Treatment Trailers
32 Service Water Storage Tank (40' dia. x 32' high)
33 Secondary EC Blend WaterTank (32' dia x 32' high)
34 Wastewater Storage Tank (44' dia x 44' high)
35 Raw Water Storage Tank (40' dia. x 32' high)
36 PDC
37 Non-SEC Bus
38 Auxiliary Transformer

Source:
CH2MHill Lockwood Greene; General Arrangement Marsh Landing Generating Station,
Siemens Simple Cycle SGT6-5000F Equipment Layout;
Drawing No: MR-GA-ML-01-26 (Rev. H, 08/27/09)

APPENDIX A
MARSH LANDING GENERATING STATION

Revised Staff Assessment

CALIFORNIA
ENERGY COMMISSION
Arnold Schwarzenegger, Governor

JULY 2010
CEC-700-2010-010 REV

DOCKET NUMBER 08-AFC-03

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE MARSH LANDING *GENERATING STATION*

Docket No. 08-AFC-3

PROOF OF SERVICE
(Revised 7/14/2010)

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DECLARATION OF SERVICE

I, _____declare that on _____, I served and filed copies of the attached _____, dated _____. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/marshlanding/index.html].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

_____ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

For filing with the Energy Commission:

_____sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-3
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

_____