REVISED

PRESIDING MEMBER'S PROPOSED DECISION

APPLICATION FOR CERTIFICATION for the

HIGH DESERT POWER PROJECT

HIGH DESERT POWER PROJECT, LLC.

Docket No 97-AFC-1

MARCH 2000

CALIFORNIA ENERGY COMMISSION

Gray Davis, *Governor*

P800-00-002

CALIFORNIA ENERGY COMMISSION

Committee

Robert A. Laurie, ***Commissioner***
Presiding Committee Member

Wiilliam J. Keese, ***Chairman***
Associate Committee Member

Hearing Office

Stanley Valkosky, ***Chief Hearing Officer***

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	**)**	**Docket No. 97-AFC-1**
	)	
Application for Certification for the	**)**	**NOTICE OF AVAILABILITY**
HIGH DESERT POWER PROJECT	**)**	**of the *REVISED* PRESIDING**
	)	**MEMBER'S PROPOSED DECISION**
		and
		NOTICE OF COMMITTEE CONFERENCE
		and
		NOTICE OF COMMISSION HEARING

I. NOTICE OF AVAILABILITY

The Committee released the REVISED Presiding Member's Proposed Decision (PMPD) for the High Desert Power Project on March 31, 2000. Copies have been sent to all on the Proof of Service List, and are also available from the Commission's Publications Unit, 1516 9th Street, MS-13, Sacramento, CA 95814. You may telephone the Publications Unit at (916) 654-5200. Ask for Publication No. P800-00-002.

Members of the public and interested governmental agencies may submit written comments on the REVISED PMPD as indicated below. All comments should be submitted to the Commission's Docket Unit, 1516 9th Street, Sacramento, CA 95814. Identify all comments with "Docket No. 97-AFC-1."

II. NOTICE OF CONFERENCE

The Committee will hold a public Conference to receive comments on the REVISED PMPD as follows:

TUESDAY, April 18, 2000
Beginning at 1:00 p.m. and concluding no later than 3:00 p.m.
Victorville City Hall
Council Chambers
14343 Civic Drive
Victorville, California

Applicant, Staff, and all other formal parties wishing to participate at this Conference must file written comments on the PMPD. These comments shall be served upon all other parties and filed with the Docket Unit ***no later than 5:00 p.m., April 13, 2000***. Members of the general public wishing to participate at this Conference are encouraged, but not required, to submit their written comments by the same date.

III. NOTICE OF COMMISSION HEARING

The full Commission will decide whether to adopt, reject, or modify the REVISED PMPD at its regularly scheduled public Business Meeting on:

WEDNESDAY, May 3, 2000
Beginning at 10:00 a.m.
California Energy Commission
Hearing Room A
1516 Ninth Street
Sacramento, California 95814

Members of the public may comment at this meeting. Those wishing to submit written comments for consideration by the full Commission should provide them to the Commission Docket Unit no later than April 28, 2000.

For information concerning public participation at the Committee Conference or the Commission Hearing, contact the Commission's Public Adviser, Roberta Mendonca, at (916) 654-4489 or, toll free, at (800) 822-6228; or e-mail: <pao@energy.state.ca.us> Media inquiries should be directed to Claudia Chandler at (916) 654-4989. If you require special accommodations, contact Robert Sifuentes at (916) 654-5004 at least five days prior to the event you wish to attend.

Technical questions should be directed to the Commission's Project Manager, Richard Buell, at (916) 653-1614, or email: <rbuell@energy.state.ca.us> Questions of a legal or procedural nature should be addressed to Stanley Valkosky, the Hearing Officer, at (916) 654-3893.

Information concerning the project, as well as relevant Commission documents, may be found on the Energy Commission's website for this proceeding at: <www.energy.ca.gov/sitingcases/highdesert>

Dated: _____

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

_____
ROBERT A. LAURIE, Commissioner
Presiding Member
High Desert AFC Committee

_____
WILLIAM J. KEESE, Chairman
Associate Member
High Desert AFC Committee

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:	**)**	**Docket No. 97-AFC-1**
	)	
Application for Certification for the	**)**	**COMMISSION ADOPTION**
HIGH DESERT Power Project	**)**	**ORDER**
_____	**)**	

This Commission Order adopts the Commission Decision on the High Desert Power Project. It incorporates the Revised Presiding Member's Proposed Decision in the above-captioned matter. The Commission Decision is based upon the evidentiary record of these proceedings and considers the comments received at the May 3, 2000 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 High Desert Power Project is a merchant power plant whose capital costs will not be borne by the State's electricity ratepayers.

2. The Conditions of Certification contained in the accompanying text, if implemented by the Applicant, 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 not 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 evidence of record does not establish the existence of any environmentally superior alternative site.

6. The analysis of record assesses all potential environmental impacts associated with both the 678 MW and the 720 MW configuration.

7. 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.

8. 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 High Desert Power Project, a limited liability corporation composed of affiliates of Constellation Power Inc., 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. For purposes of reconsideration pursuant to Public Resources Code section 25530, this Decision is deemed adopted when filed with the Commission's Docket Unit.

4. For purposes of judicial review pursuant to Public Resources Code section 25531, this Decision is final thirty (30) days after its filing in the absence of the filing of a petition for reconsideration or, if a petition for reconsideration is filed within thirty (30) days, upon the adoption and filing of an Order upon reconsideration with the Commission's Docket Unit.

5. 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.

6. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents as provided by Public Resources Code section 25537 and California Code of Regulations, title 20, section 1768.

Dated: _____

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

_____
WILLIAM J. KEESE
Chairman

_____
MICHAL C. MOORE
Commissioner

_____
ROBERT A. LAURIE
Commissioner

_____
ROBERT PERNELL
Commissioner

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Appendix C: *Proof of Service List*
Appendix D: *Glossary of Terms and Acronyms*

INTRODUCTION

A. Summary

This ~~Presiding Member's Proposed~~ Decision ~~(PMPD)~~ is based exclusively upon the record established during these certification proceedings, including that developed after reopening the record, and summarized herein. It contains our rationale for ~~recommending~~ concluding that the High Desert Power Project (HDPP) ~~not be certified at this time~~ may now be licensed. We have independently evaluated the evidence presented, provided references to the record supporting our findings and conclusions, and specified the measures required to ensure that the HDPP is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

Our present Decision is the culmination of a thorough project review by the Committee. The Committee released its initial Presiding Member's Proposed Decision (PMPD) in December 1999, and recommended that the project not be certified, primarily due to deficiencies in the areas of "Air Quality" and "Soil and Water Resources." After granting Applicant's motion to reopen the record (see 1/27/00 RT 4-14, and ORDER of February 1, 2000), the Committee received additional evidence on pertinent areas, considered this new material in light of the total evidentiary record, and then issued its Revised PMPD in March 2000. This latter document considered additional evidence and comments, recommended project certification, and forms the basis for our Decision.

~~This situation arises from a confluence of factors. First, Applicant has not yet identified and obtained complete air emissions offsets as required by Public Resources Code section 25523 (d)(2). Second, Applicant has failed to persuasively demonstrate that a firm source of water will be available to supply the needs of the project in a manner which will also protect sensitive biological~~

~~species and habitat. These matters are discussed in detail in the appropriate portions of this PMPD.~~

~~Nevertheless, we have included Conditions of Certification in appropriate topic areas which specify required measures to illustrate that the HDPP could be designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality, should the remaining obstacles to certification be cured.~~

As proposed, the HDPP would be located in San Bernardino County, at a site on the former George Air Force Base in the City of Victorville. The project is essentially either a 678 megawatt (MW) or a 720 MW natural gas-fired, combined cycle power plant. Associated facilities include a new 230 kilovolt (kV) transmission intertie to the existing Victor Substation approximately 7.2 miles away; natural gas fuel supply pipelines; and potable and raw water supply ~~pipelines~~facilities.

Electrical output from the project would be sold into the newly created California Power Exchange, as well as to wholesale power consumers pursuant to bilateral sales agreements. Project construction would likely commence approximately three to four months after certification; capital costs are in the vicinity of $360 million. Project construction would create a peak of about 370 construction jobs, as well as employ 27 permanent operational personnel. Applicant desires to commence commercial operation in time to serve the summer peak of 2002.

B. Site Certification Process

The HDPP and its related facilities fall within Energy Commission licensing jurisdiction. (Pub. Resources Code, §§ 25500 et seq.). During its licensing proceedings, the Commission acts as lead state agency under the California Environmental Quality Act (Pub. Resources Code, §§ 25519 (c), 21000 et seq.).

The Commission's process and associated documents are functionally equivalent to the preparation of the traditional Environmental Impact Report. (Pub. Resources Code, § 21080.5.) The process is designed to allow review of a project to be completed within a limited period of time; a license issued by the Commission is in lieu of other state and local permits.

The Commission's certification process provides a thorough, ~~and~~ timely review and analysis of all aspects of a proposed project. During this process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

Significantly, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally, or on a more formal level as Intervenors with the same legal rights and duties as the project developers. Public participation is encouraged at every stage of the process.

We note that in the present case one of the Intervenors, Mr. Gary Ledford, has repeatedly argued that our process fails to address comments from members of the public and thus violates both the spirit and the requirements of CEQA. (See generally Ledford's 11/3/99 Opening Brief, pages 12-14.) While we do not wish to belabor this point, we note that our process requires substantially more opportunities for public participation and review than does the traditional CEQA process. Moreover, ~~we believe,~~ as explained in subsequent portions of this document, ~~that~~ we have fully and fairly examined the positions formally espoused by Mr. Ledford, and supported by various comments from members of the public. On balance, we believe that the participation of Mr. Ledford and others has resulted in a painstaking scrutiny of the Applicant's proposal, as well as the development of Conditions of Certification which extensively reduce and safeguard against potential project impacts.

The certification process begins when an Applicant submits the Application for Certification (AFC). Commission staff reviews this submission, and recommends to the Commission whether or not the accompanying information is adequate to permit formal review to commence. Once the Commission determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process; this process includes holding public conferences and evidentiary hearings, as well as providing a recommendation to the full Commission concerning a project's ultimate acceptability. This recommendation is contained in the ~~present PMPD~~ Committee's initial (or revised) Presiding Member's Proposed Decision.

The initial portion of the certification process is weighted heavily toward ensuring public awareness of the proposed project and obtaining such further technical information as is necessary. During this phase, the Commission staff sponsors numerous public workshops at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff then publishes its initial technical evaluation of a proposed project in a document called the "Staff Assessment."

The Committee also conducts various public events, including at least one Prehearing Conference, to assess the adequacy of available information, identify issues, and determine the positions of the various participants. Information gleaned from these events forms the basis for a Hearing Order organizing and scheduling formal evidentiary hearings. At these hearings, all formal parties are able to present testimony, under oath or affirmation, which is subject to cross-examination by other parties and to questioning by the Committee. The public may also comment on a proposed project at these hearings. Evidence adduced during these hearings provides the basis for the decision-makers' analysis.

This analysis, in turn, appears in a Committee recommendation to the full Commission in the form of a Presiding Member's Proposed Decision, which is

available for a public review period of at least 30 days. Depending upon the extent of revisions necessary in reaction to comments received during this period, the Committee may then elect to publish a revised version. If so, this latter document triggers an additional 15 day public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process, the members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal Intervenors function independently and with legal status equal to one another. An "ex-parte" rule prohibits parties from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications occur on the public record. The Office of the Public Adviser is available to inform members of the public concerning the certification proceedings, and to assist those interested in participating. The record shows that Mr. Ledford, to the benefit of our project review, has fully availed himself of this open decision-making process.

C. Procedural History

Public Resources Code, sections 25500 et seq. and Commission regulations (20 Cal. Code of Regs., §§ 1701, et seq.) mandate a public process and specify the occurrence of certain necessary events. The key procedural elements occurring during the present case are summarized below.

On January 24, 1997, HDPP filed a "Petition for Jurisdictional Determination" under Public Resources Code section 25540.6. In this Petition, Applicant asked the Commission to decide whether the HDPP should be exempt from the Notice of Intention (NOI) requirements of Public Resources Code section 25502. After due consideration of the matter the Commission determined, on March 5, 1997,

that the proposed power plant project resulted from competitive solicitations or negotiations for the sale of its power and thus, under Public Resources Code section 25540.6 (a) (1), qualified for an exemption from the NOI.

Applicant initially filed its AFC on June 30, 1997. On August 13, 1997, the Commission determined that this submission was incomplete. Applicant then submitted additional information and, on December 3, 1997, the Commission accepted the AFC as complete with the specific condition that the submittal of additional information pertaining to air quality be promptly forthcoming in order to allow the Mojave Desert Air Quality Management District to complete its required review in a timely manner. (Order No. 97-1203-7.)

To assist in public awareness of the project, Staff sent a request for agency participation to governmental entities likely to have an interest in the proposed project. The Committee scheduled its initial public event, an "Informational Hearing and Site Visit," by notice dated December 12, 1997. This notice was sent to all known or expected to be interested in the proposed project, including the owners of land adjacent to, or in the near vicinity of, the HDPP; it was also published in local general circulation newspapers.

Staff held the first of its numerous post-acceptance public workshops on December 30, 1997. The Committee conducted the Informational Hearing in Victorville on January 15, 1998. At this event, the Committee and other participants discussed the proposed HDPP, described the Energy Commission's review process, and explained opportunities for public participation. The Committee then issued its first Scheduling Order on January 29, 1998.

Over the course of the next several months, both the Committee and the Staff held numerous public events (such as Status Conferences and workshops) to assess the status of the project, including submission of necessary information by Applicant. On June 15, 1998 Applicant formally amended its initial AFC filing

to include a second natural gas pipeline approximately 32 miles long. Analysis of this element of the project also triggered review by federal agencies. Subsequently, landowners potentially affected by the additional pipeline were provided notice and the Committee conducted a second Informational Hearing in Victorville on July 1, 1998.

The addition of the pipeline and delays in obtaining necessary information caused extensive scheduling revisions; ultimately, the Committee imposed a "performance schedule" whereby the timing of subsequent events became dependent upon the submission of necessary analytic information by Applicant. This device enabled Staff to publish its assessment of the project in January 1999; subsequent delays in obtaining necessary information (primarily involving the topics of Air Quality, Biological Resources, and Soil and Water Resources), as well as negotiations between Applicant and the California Unions for Reliable Energy (CURE), prevented evidentiary hearings from commencing until September 1999. These concluded on October 8, 1999.

The Committee issued its initial PMPD on December 15, 1999. The comment period ended January 18, 2000, and the Committee conducted a public conference on the PMPD on January 27, 2000 in Victorville. After considering motions from Applicant and Mr. Ledford, the Committee reopened the evidentiary record for limited purposes and conducted another public evidentiary hearing on February 18, 2000. After deliberating upon the additional materials presented and the comments received, the Committee published its **REVISED** PMPD on March 31, 2000.

Formal Intervenors in this process include: CURE; Mr. Gary Ledford; the California Department of Fish and Game; Southwest Gas Corporation; the Los Angeles Department of Water and Power; Ellison and Schneider; and Edson and Modisette. The Committee also denied a Petition to Intervene filed by Mr. Brad Foster.

I. PROJECT PURPOSE AND DESCRIPTION

Multiple Project Configurations. Applicant initially proposed the power plant as being either an 832 megawatt (MW) simple cycle peaking plant or as being one of two combined cycle configurations. The latter design could consist of a 720 MW project using three combustion turbines and three steam turbines or a 678 MW project utilizing two combustion turbines and two steam turbines. It formally withdrew the 832 MW configuration from consideration (Ex. 38),[1] and is currently considering only the latter two combined cycle designs. (9/30/99 RT 168-69.) [2]

The 720 MW configuration would use "F" class combustion turbines; the 678 MW version would use "G" class turbines. Testimony on behalf of Applicant indicates that it has not yet decided which configuration would be built. The evidence indicates that this decision will occur before financial closing and the groundbreaking for the project. (9/16/99 RT 67-8; 9/30/99 RT 169.) The evidence further indicates that factors such as the difference in the capital and operating costs, performance characteristics, and environmental effects between the two configurations will be evaluated in making the ultimate choice. (9/16/99 RT 68-9.)

We wish to discourage other potential Applicants from proposing more than a single project configuration, or a project involving multiple descriptions. While the lack of a singular project description may allow an Applicant to keep its options open and perhaps even provide it with negotiating flexibility (see, e.g. 9/30/99 RT 172), our experience in this case indicates that such proposals are not in the overall public interest. Reviewing multiple project configurations creates an unnecessary level of complexity in an inherently complex undertaking, adds

[1] "Ex." and "Exs." refer to the exhibit or exhibits admitted into evidence. For a list of these documents, see Appendix C of this Decision.

[2] "RT" refers to the official reporter's transcript for the date and page or pages indicated.

additional workload to oftentimes already overburdened resources, and raises confusion in the minds of the concerned public.

Nevertheless, we realize that the Commission accepted the present project, in three potential configurations, for licensing review. We believe that this acceptance essentially constituted a commitment to review the multiple configurations. Therefore, throughout these proceedings, we have analyzed the impacts of the High Desert Power Project in both the 678 MW and 720 MW configurations.[3] This analysis has, to the extent appropriate, been coordinated with the U.S. Bureau of Land Management (BLM) and the U. S. Fish and Wildlife Service (USFWS). (9/16/99 RT 73-4.)

Scope of Project. For review purposes under the California Environmental Quality Act (CEQA), a "project" is defined, in part, as meaning "... the whole of an action, which has the potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment...". [14 Cal. Code of Regs., § 15378 (a).] Intervenor Gary Ledford interprets this provision as meaning that the "project" for purposes of the Commission's environmental review should be the overall redevelopment of George Air Force Base. (See Ledford's 11/3/99 Opening Brief, pp.3-4, 8, 18-9 and citations therein.)

Mr. Ledford raised this issue throughout these proceedings. The Committee clarified that the scope of the present environmental review is limited to the direct, indirect, and cumulative impacts of the " project" consisting of "... the power plant and its appurtenant facilities ...". (10/8/99 RT 13-14.) Mr. Ledford characterizes this limitation and the potential use of the Commission's

[3] The analysis in nine technical topic areas is influenced by the choice of configuration. The evidence submitted in these technical topic areas (Air Quality, Efficiency, Facility Design, Public Health, Soil and Water Resources, Transmission Line Safety and Nuisance, Transmission System Engineering, Visual Resources, and Waste Management) considers both configurations.

environmental review by other agencies as a "procedural error". (Ledford's 11/3/99 Opening Brief, p. 3; 1/5/00 PMPD comments, p. 6.)

We disagree with Mr. Ledford's contention. Under our enabling statute, we have the exclusive power to "... certify all sites and related facilities...". (Pub. Resources Code, § 25500.) For certification purposes, a "facility" is defined as any "... electric transmission line or thermal power plant..." and appurtenances meeting certain criteria. (Pub. Resources Code, §§ 25110, 25120.) This represents the scope of the development over which we may exercise our discretionary permitting authority. Reading these provisions in conjunction with section 15378(c) of the CEQA guidelines which defines a "project," in part, as "... the activity which is being approved ..." [14 Cal. Code of Regs., §15378 (c)] means that our review is necessarily confined as indicated by the Committee.

Moreover, the reuse of George Air Force Base has already been examined; this review did not include the proposed power plant. (See Ex. 116.) The larger issue of the sufficiency of this prior environmental review is simply not within our purview to reconsider. This is especially true where we have no knowledge of, nor apparent permitting authority over, potential unspecified future projects which may be built at the former base.

1. Summary and Discussion of the Evidence

The High Desert Power Project, LLC (HDPP or Applicant), is a limited liability corporation composed of affiliates of Constellation Power, Inc., of Baltimore, Maryland ~~and Inland Energy of Newport Beach, California~~. HDPP's project objectives are to: serve an identified need for power in the Southern California electricity market; maximize market opportunities by locating in an area with potential access to northern California electricity markets; locate near key infrastructure (e.g. transmission, natural gas pipelines, cooling water supply); avoid constrained permitting areas such as the South Coast Air Quality

Management District; and minimize project costs and environmental impacts. (Exs. 1, section 1.0-1; 82, p. 5.) The project will be a "merchant" power plant which will sell its electrical energy in California's newly created electricity market pursuant to sales agreements with municipalities or other customers.[4] (*Id.*; see also 9/30/99 RT 165.)

The proposed location for the HDPP is a 25 acre site in a portion of Section 24, Township 6 North, Range 5 West (San Bernardino Base and Meridian) within the northwest corner of the City of Victorville. This site is on the Southern California Logistics Airport (SCLA, formerly known as the Southern California International Airport and as George Air Force Base; see Figures 1 and 2; see also 9/16/99 RT 72-3). Applicant ~~does not control the property for the proposed site at the present time; it is negotiating~~ has obtained site control in the form of a lease option agreement with the Victor Valley Economic Development Authority (VVEDA) for rights to ~~lease the land~~ use the proposed site. (2/18/00 RT 40-44; Exs. 143; 146A, p.2~~. (9/30/99 RT 168.)~~

Either the 720 MW or the 678 MW combined cycle configuration will use wet cooling and incorporate water treatment equipment, air compressors, inlet air evaporative coolers, turbine and generator sets, continuous emission monitors, control rooms and administrative buildings, step-up transformers, heat recovery steam generators (HRSGs), steam turbines, 130 foot high exhaust stacks, selective catalytic reduction (SCR), and aqueous ammonia storage and handling equipment. The SCR and ammonia are used to reduce nitrogen oxide (NOx) emissions. The SCR and dry low NOx combustion technology will reduce NOx emissions to 2.5 ppmvd or less at 15 percent oxygen. The HRSGs are used to recover waste heat from the combustion turbine exhaust to produce steam, which is then expanded in the steam turbines to produce electricity. Either

[4] A merchant power plant is one which is privately owned, and whose costs are not borne by utility ratepayers.

combined cycle power configuration is expected to have an overall availability of 95 percent and operate up to 8,760 hours per year. (Exs. 1; 82, p. 9.)

The 720 MW version will use three power trains comprised of three "F" class combustion turbines (160 MW each), three steam turbines (86.5 MW each), and three exhaust stacks. Either General Electric or Westinghouse will manufacture the turbines. The 678 MW option would consist of two "G" class combustion turbines (236 MW each), two steam turbines (115 MW each), and two exhaust stacks. The evidence indicates that Westinghouse would likely supply the "G" class turbines. (*Id*.)

The Victor Valley Water District (VVWD) will provide potable water. Cooling water for the evaporative coolers, the steam cycles, and as makeup water for the HRSGs will also be required. The 720 MW configuration will require a maximum of approximately 4,000 acre-feet per year; the 678 MW configuration will require about 3,300 acre-feet per year. (9/16/99 RT 62.) As currently proposed by Applicant, the Mojave Water Agency (MWA) will provide, when available, State Water Project (SWP) water, on an annual and potentially interruptible basis, for cooling; this water would also be used to provide a groundwater "bank" from which the project could draw. (9/16/99 RT 58, 73.) To obtain SWP water, the City of Victorville will apply (on behalf of HDPP) to the MWA.[5] SWP water will be supplied via a 2.5 mile long interconnection from the Mojave River Pipeline.

Most cooling water will be consumed in the cooling towers and evaporated. Process wastewater will be treated and reused. The chemicals and solid material contained in the cooling water will be concentrated into a brine, which will be removed from the cooling cycle and sent to a forced circulation crystallizer where the remaining water will be removed, producing a solid crystalline material which will be disposed in a landfill. (Exs. 1; 82, pp. 9-11.)

[5] These matters are discussed in detail in the "Soil and Water" portion of this Decision, *infra.*

A new 7.2 mile 230 kilovolt (kV) overhead single circuit electric transmission line will interconnect the project to Southern California Edison (SCE) Company's electrical transmission system at the Victor Substation. A new 230 kV switchyard will be constructed at the eastern end of the project site.

FIGURE 1

FIGURE 2

A 2.75 mile, 16-inch natural gas pipeline will be constructed by Southwest Gas Corporation (Southwest Gas) to provide fuel for the project; this natural gas line will enter at the southeast corner of the project site. On June 15, 1998, Applicant amended its Application for Certification to add a second natural gas pipeline. This second pipeline, which also would be constructed and operated by Southwest Gas, would be 30-inches in diameter and approximately 32 miles long. It would be located primarily within previously developed utility and transportation corridors. From the project site, this pipeline would proceed north along Perimeter and Helendale Roads to Colusa Road. It would then proceed west along the south side of Colusa Road, crossing State Highway 395. The pipeline would then proceed north along the west side of State Highway 395, crossing north of Kramer Hills and continuing north to the Kern River Pipeline approximately one-quarter mile south of Highway 58 and one mile east of the intersection of the highways. (Ex. 82, p. 14; 9/16/99 RT 57.) Although this pipeline has been reviewed as part of the overall project, testimony of record indicates that Applicant has not yet made the decision as to whether it will actually be built. (9/16/99 RT 57; 9/30/99 RT 172-73.)

The project's estimated capital costs are approximately $360 million. (9/30/99 RT 165.) Construction will take between 18 to 24 months, depending upon the configuration chosen, and will commence three to four months after certification. (9/16/99 RT 58-9; 9/30/99 RT 161-62.) Project construction will create a peak of about 370 temporary construction jobs and employ 27 permanent operational personnel.

FINDINGS and CONCLUSIONS

Based upon the evidence of record, and we find and conclude as follows:

1. The project objective is to construct and operate a natural gas-fired combined cycle merchant power plant in either the 678 MW or the 720 MW configuration described in this Decision.

2. The project consists of the power generation equipment, the transmission interconnection, the raw and potable water supply pipelines, the natural gas supply pipelines, and related facilities.

3. An Environmental Impact Statement has been prepared which addresses the reuse of the former George Air Force Base.

4. Reexamination of the environmental documentation referred to in Finding 3, above, is beyond the scope of the Commission's authority and would be speculative.

5. The evidence of record contains an analysis of both the 678 MW and the 720 MW configurations.

6. Applicant has ~~not yet~~ obtained a lease option contract giving it the legal right to use the site proposed for the project.

We therefore conclude that the High Desert Power Project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist and the California Environmental Quality Acts.

II. DEMAND CONFORMANCE CRITERIA

~~Current~~ Prior to January 1, 2000, state law provide~~s~~d that the Commission ~~cannot~~ could not certify an electric generating facility unless it ~~finds~~ found that the project conformed with the 12-year forecast for electrical energy demand and with the Integrated Assessment of Need contained in the Commission' s most recently adopted Electricity Report (ER).[6] The most recent~~ly~~ ~~adopted~~ ER is the 1996 Electricity Report (**ER 96**), adopted on November 5, 1997. The Commission accepted the Application for Certification for the High Desert Power Project on December 3, 1997. Therefore, **ER 96** ~~is~~ was applicable to this project. (Ex. 104.)

1. Summary and Discussion of the Evidence

ER 96, at page 72, succinctly describes the criteria governing the demand conformance determination:

> ... during the period when ER 96 is applicable, proposed power plants shall be found in conformance with the Integrated Assessment of Need (IAN) as long as a total number of megawatts permitted does not exceed 6,737.

To date, the Commission has certified projects with approximately ~~2,048~~ 2,900 MW of generating capacity; another ~~1200~~ 1300 MW is currently undergoing review with final decisions expected shortly.[7] Even if all pending projects ~~are~~

[6] These provisions are contained in sections 25305, 25308, 25308.5, 25309 (b), 25523 (f), and 25524 of the Warren-Alquist Act [Pub. Resources Code, §§ 25000 et seq.].

[7] The former are the Sutter Power Project (500 MW) , the Pittsburg District Energy Facility (500 MW), ~~and~~ the La Paloma Generating Project (1048 MW), and the Delta Energy Center (880 MW); the latter projects undergoing review are the ~~Delta Energy Center (880 megawatts) and the~~ Sunrise Cogeneration Project (320 MW), the Elk Hills project (500 MW), and the Three Mountain Project (500 MW).

were to be certified before the HDPP, its 678 -720 megawatts of capacity ~~will~~ would not cause the 6,737 level to be exceeded. (Ex. 104, p. 2.)[8]

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The 1996 Electricity Report ~~is that~~ was the Electricity Report most recently adopted by the Commission.

2. The demand conformance criteria contained in the 1996 Electricity Report ~~are~~ were those applied to the High Desert Power Project, and were applicable prior to January 1, 2000.

3. The High Desert Power Project ~~meets~~ met the demand conformance criteria contained in the 1996 Electricity Report.

4. Senate Bill 110 (Stats. 1999, Chap. 581), effective January 1, 2000, eliminated the statutory requirement to perform a need conformance analysis.

We therefore conclude that the High Desert Power Project satisfie~~s~~d the demand conformance criteria referred to in the pertinent portions of the Public Resources Code, and implemented under the 1996 Electricity Report. These criteria were eliminated effective January 1, 2000.

[8] On April 28, 1999, the Commission adopted an Addendum to **ER 96** which eliminate~~s~~d the 6,737 MW limit for new power plants (Commission Order No. 99-0428-12). In September 1999, the Legislature enacted Senate Bill 110 which ~~eliminates~~repealed the ~~present~~ need conformance requirement as of January 1, 2000 (SB 110, Statutes of 1999.)

III. ALTERNATIVES

In cases such as the present, where the proposed project has been exempted from the Notice of Intention requirements pursuant to Public Resources Code section 25540.6, the Commission is required during the AFC to examine the "... feasibility of available site and facility alternatives... which substantially lessen the significant adverse impacts of the proposal on the environment." (20 Cal. Code of Regs., § 1765.) This inquiry must also comply with the guidelines implementing the California Environmental Quality Act (CEQA) which require an evaluation of the comparative merits of "... a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project...", as well as an evaluation of the "no project" alternative. [14 Cal. Code of Regs., § 15126 (d).]

The range of alternatives which we are required to consider is governed by a "rule of reason." This means that our consideration of alternatives may be limited only to those "... that would avoid or substantially lessen any of the significant effects of the project..." while continuing to attain most of the basic objectives of the project, and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative [14 Cal. Code of Regs., § 15126 (d) (5).][9]

In the following portion of this Decision, we discuss alternatives to the proposed site and project configuration. Our examination of the suitability of an alternative cooling technology is contained in part VIII, *infra*.

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[9] Public Resources Code, section 25305 (c) limits the scope of an alternatives analysis during a power plant siting case. This provision states that conservation, load management, or other demand reducing measures reasonably expected to occur shall be examined in the Electricity Report, and shall not be considered as alternatives to a proposed facility during the siting process.

1. Summary of the Evidence

The evidence of record addresses alternatives to the major components of the HDPP. This includes generation technology, site selection, and linear facility routing. The methodology used to prepare the alternatives analysis included :

- identifying the basic objectives of the project;
- identifying and evaluating electricity generation alternatives to the project;
- identifying and evaluating alternative locations or sites;
- comparing the alternative technologies and sites with the proposed project; and
- evaluating the impacts of not constructing the proposed project. (9/30/99 RT 179; Ex. 82, pp. 475-76.)

Project Objectives. The evidence indicates that the project objectives include constructing and operating a merchant power plant in the San Bernardino County region to supply and sell electric power in California's deregulated power market. To achieve this end, the project proponents desire to construct the HDPP near key infrastructure such as transmission lines and natural gas pipelines. In Applicant's view, this will maximize efficiency and minimize costs, thus assisting the project in achieving financial viability. Applicant also desires to avoid perceived permitting constraints in the South Coast Air Quality Management District and to locate the facility at an existing industrial site, in an area in which there is public support. (Exs. 1, section 6.3-1; 82, p. 476; 83, p. 5.)

Technological Alternatives. Commission staff examined electrical generation alternatives which do not burn fossil fuels. The generation technologies which could conceivably serve as alternatives to the proposed project are geothermal, solar, hydroelectricity, and wind. The analysis established, however, that the natural resources to power these alternative technologies are either not available in the Mojave Desert region, or that employing these technologies would require vastly larger land areas than would the proposed project. As a result, the use of

any alternative generation technology possesses the potential for significant land use, biological, and visual impacts. The evidence indicates that these technologies do not comprise feasible project alternatives. (Exs. 1, section 6.2-1 to 6.2-2; 82, pp. 478-79.)

Alternative Locations and Configurations. Eleven alternative locations for the project were evaluated. Of these, three sites were determined to be feasible: Adelanto Industrial Park No. 4 ; the Luz Solar Electric Generating Station Unit 10 in the Harper Lake area; and an unused parcel of land at the Etiwanda Generating Station property in Rancho Cucamonga. Each of these three sites is located within San Bernardino County. (See Figure 1; 9/30/99 RT 179.)

Staff also examined configuration alternatives (including the 832 MW version withdrawn by Applicant) and alternatives to the 32-mile natural gas pipeline. (9/30/99 RT 179-80, 194-95.) Moreover, the evidence of the record contains an analysis of transmission alternatives including potential interconnection points and line routings. (9/30/99 RT 174-75; Ex. 1, section 6.4-1 to 6.4-16.)

Individual technical topic area evaluations of the alternatives considered are detailed in the evidence of record. (See, e.g. Ex. 82, pp. 494-556.) Staff identified air quality, soil and water resources, biological resources, and cultural resources as the technical topic areas with the greatest potential for significant adverse impacts. Staff then examined various configuration alternatives and concluded that a 240 MW combined cycle power plant located at the Southern California Logistics Airport, without the 32-mile natural gas pipeline, constituted the environmentally preferred alternative. (9/30/99 RT 180-81; Exs. 82, pp. 491-93; 83, p. 5.)

The Staff witnesses clarified, however, that this conclusion did not include an analysis of the cost-effectiveness of this possible alternative, nor did the stated preference account for the extent to which impacts would be reduced through the

imposition of appropriate mitigation measures. (9/30/99 RT 181, 191-93.) These witnesses testified that, when mitigation measures contained in the Conditions of Certification are factored in, impacts associated with the project as proposed (including the 32-mile natural gas pipeline) will be reduced below a level of significance. (9/30/99 RT 189-91.) [10]

No Project. Evidence offered by Applicant indicates that if the HDPP were not built, then electricity which it would have generated would be supplied by other power plants; thus, environmental effects of equal or greater magnitude would nevertheless occur. (Ex. 1, section 6.1-1.) Staff, however, believes that overall the "no project" alternative is environmentally superior since, although mitigated to a level of insignificance, residual impacts resulting from the HDPP remain. Were the project not constructed, these residual impacts would not exist. (9/30/99 RT 191-92.)

2. Discussion of the Evidence

We believe the evidence of record contains a thorough and reasoned treatment of alternatives to the project as proposed. While the evidence seems to indicate that the smaller 240 MW configuration would be more environmentally benign, this comparison does not consider the proposed project as mitigated. We note that the totality of the evidence of record establishes that all potential environmental impacts associated with the project and its appurtenant facilities are reduced to levels of insignificance by the mitigation measures contained in the Conditions of Certification incorporated in this Decision.

[10] The testimony further indicate~~s~~d that the federal agencies reviewing the project are likely to conclude that the imposition of appropriate mitigation measures will reduce the proposed project's impacts to below a level of significance. (9/30/99 RT 190-91.) The United States Fish and Wildlife Service, as the lead federal agency, issued a Draft Environmental Impact Statement (DEIS) on December 23, 1999. In its February 23, 2000 comments upon the DEIS, the United States Environmental Protection Agency urged that the power plant, without the 32-mile natural gas pipeline, be considered as the "preferred alternative."

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Moreover, while Staff's conclusion that the "no project" alternative is the superior choice, this option clearly does not meet project objectives. It also is difficult to conceive any instance in which building a project does not result in some degree of residual effect, and in which the “no project” alternative could not be characterized as environmentally preferable.

We believe the more pertinent inquiry is whether any residual effects are “significant." In this instance, the evidence of record persuades that they are not. We further note that in spite of its conclusion concerning the "no project" alternative, Staff nevertheless recommends that we "... certify the project that the Applicant has proposed with the Conditions of Certification that Staff has recommended." (9/30/99 RT 191:19-22.) We believe this to be the controlling recommendation since it is logically founded upon Staff’s other conclusions that all potential impacts associated with the project have been reduced below a level of significance.

FINDINGS and CONCLUSIONS

Based upon the persuasive weight of the evidence of record presented concerning the topic of "Alternatives," we find and conclude as enumerated below. These Findings and Conclusions are to be read in conjunction with those contained in other portions of this Decision.

1. The evidence of record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.

2. The evidentiary record contains a review of alternative technologies, fuels, linear routings, and the "no project" alternative.

3. If all Conditions of Certification contained in this Decision are implemented, ~~and deficiencies noted in other portions of this Decision are corrected,~~ construction and operation of the High Desert Power Project will not create any direct, indirect, or cumulative significant adverse environmental impacts.

4. The "no project" alternative would not avoid or lessen the creation of any direct, indirect, or cumulative significant adverse environmental impacts.

We therefore conclude that the evidence of record contains an analysis of possible alternatives to the High Desert Power Project, including its appurtenant facilities, which satisfies the requirements of both the Warren -Alquist Act and the California Environmental Quality Act and their respective implementing regulations.

IV. COMPLIANCE and CLOSURE

Public Resources Code section 25532 requires the Commission to establish a post-certification monitoring system. The purpose of this requirement is to assure that certified facilities are constructed and operated in compliance with applicable laws, ordinances, regulations, and standards, as well as the specific Conditions of Certification contained in this Decision.

1. Summary and Discussion of the Evidence

The evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the High Desert Power Project is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the project owner and the Staff Compliance Project Manager in implementing the design, construction, and operation criteria set forth in this Decision. Compliance with the Conditions of Certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Plan also contains requirements governing the planned closure, as well as the unexpected temporary and unexpected permanent closure, of the project. (Exs. 82,83; 9/16/99 RT 41.)

The Compliance Plan is composed of two broad elements. The first element is the "General Conditions". These General Conditions basically:

- set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- set forth the requirements for handling confidential records and maintaining the compliance record;
- establish procedures for settling disputes and making post-certification changes;
- state the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed conditions; and

- establish requirements for facility closure.

The second general element of the Plan is the specific Conditions of Certification. These are found following the summary and discussion of each individual topic area in this Decision. The individual conditions contain measures required to mitigate potentially adverse project impacts to insignificant levels. Each condition also includes a "verification" provision describing the method of assuring that the condition has been satisfied.

The contents of the Compliance Plan are intended to be read in conjunction with any additional requirements contained in the individual Conditions of Certification. Applicant has acknowledged the applicability of all conditions imposed in this Decision. (10/8/99 RT 171.)

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the High Desert Power Project will be designed, constructed, operated, and closed in conformity with applicable law.

2. Requirements contained in the Compliance Plan and in the specific Conditions of Certification are intended to be read in conjunction with one another.

We therefore conclude that the compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code, section 25532. Furthermore, we adopt the following Compliance Plan as part of this Decision.

COMPLIANCE PLAN

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

A CPM will oversee the compliance monitoring and shall be responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities is in compliance with the terms and conditions of the Commission Decision;

2. resolving complaints;

3. processing post-certification changes to the Conditions of Certification, project description, and ownership or operational control;

4. documenting and tracking compliance filings; and

5. ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies and the Energy Commission when handling disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a Condition of Certification requires CPM approval, the approval will involve all appropriate staff and management.

Pre-Construction and Pre-Operation Compliance Meeting

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start dates of construction, plant operation, or both. The purpose of these meetings will be to assemble both the Energy Commission's and the project owner's technical staff to review the status of all pre-construction or pre-operation requirements contained in the Energy Commission's Conditions of Certification to confirm that they have been met or, if they have not been met, to ensure that the proper action is taken. In addition, these meetings shall ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight or inadvertence and to preclude any last minute, unforeseen issues from arising.

Energy Commission Record

The Energy Commission shall maintain as a public record in either the Compliance file or Docket file for the life of the project (or other period as required):

1) all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;

2) all monthly and annual compliance reports filed by the project owner;

3) all complaints of noncompliance filed with the Energy Commission; and

4) all petitions for project or condition changes and the resulting staff or Energy Commission action taken.

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the Conditions of Certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the Conditions of Certification or the general compliance conditions may result in reopening the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate.

Access

The CPM, designated staff, and delegated agencies or consultants shall be guaranteed and granted access to the power plant site, related facilities, project-related staff, and the records maintained on-site for the purpose of conducting audits, surveys, inspections, or general site visits.

Compliance Record

The project owner shall maintain project files on-site or at an alternative site approved by the CPM for the life of the project. The files shall contain copies of all “as-built” drawings, all documents submitted as verification for conditions, and all other project-

related documents for the life of the project, unless a lesser period is specified by the Conditions of Certification.

Energy Commission staff and delegate agencies shall, upon request to the project owner, be given access to the files.

Compliance Verifications

A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. **The cover letter subject line shall identify the involved Condition(s) of Certification by condition number and include a brief description of the subject of the submittal**. The project owner shall also identify those submittals **not** required by a Condition of Certification with a statement such as: "This submittal is for information only and is not required by a specific Condition of Certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal.

The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed by the project owner or by an agent of the project owner.

All submittals shall be addressed as follows:

Compliance Project Manager
High Desert Power Project (Docket No. 97-AFC-1)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

If the project owner desires Energy Commission staff action by a specific date, it shall so state in its submittal and include a detailed explanation of the effects on the project if this date is not met.

Each Condition of Certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions,

may be modified as necessary by the CPM, in most cases without full Energy Commission approval.

Verification of compliance with the Conditions of Certification can be accomplished by:

1) reporting on the work done and providing the pertinent documentation in monthly and/or annual compliance reports filed by the project owner or authorized agent as required by the specific Conditions of Certification;

2) appropriate letters from delegate agencies verifying compliance;

3) Energy Commission staff audit of project records; and/or

4) Energy Commission staff inspection of mitigation and/or other evidence of mitigation.

Compliance Reporting

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the Commission Decision. During construction, the project owner or authorized agent shall submit Monthly Compliance Reports. During operation, an Annual Compliance Report must be submitted. These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the Conditions of Certification require that compliance submittals be submitted to the CPM in the monthly or annual compliance reports.

Compliance Matrix

A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of compliance conditions in a spreadsheet format. The compliance matrix must identify:

1) the technical area,

2) the condition number,

3) a brief description of the verification action or submittal required by the condition,

4) the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.),

5) the expected or actual submittal date,

6) the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable, and

7) an indication of the compliance status for each condition (e.g., “not started”, “in progress” or “completed date”).

Completed or satisfied conditions do not need to be included in the compliance matrix after they have been identified as completed/satisfied in at least one monthly or annual compliance report.

Monthly Compliance Report

During construction of the project, the project owner or authorized agent shall submit Monthly Compliance Reports within ten (10) working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain at a minimum:

1) a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;

2) documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;

3) an initial, and thereafter updated, compliance matrix which shows the status of all Conditions of Certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

4) a list of conditions which have been satisfied during the reporting period, and a description or reference to the actions which satisfied the condition;

5) a list of any submittal deadlines that were missed accompanied by an explanation and an estimate of when the information will be provided;

6) a cumulative listing of any approved changes to Conditions of Certification;

7) a listing of any filings with, or permits issued by, other governmental agencies during the month;

8) a projection of project compliance activities scheduled during the next two months;

9) a listing of the month's additions to the on-site compliance file; and

10) any requests to dispose of items that are required to be maintained in the project owner's compliance file.

The first Monthly Compliance Report is due the month following the Energy Commission business meeting date on which the project was approved, unless the project owner notifies the CPM in writing that a delay is warranted. The first Monthly Compliance Report shall include an initial list of dates for each of the events identified on the Key Events List. The Key Events List is found at the end of this section.

Annual Compliance Report

After the air district has issued a Permit to Operate, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by the CPM. Each Annual Compliance Report shall identify the reporting period and shall contain the following:

1) an updated compliance matrix which shows the status of all Conditions of Certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);

2) a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

3) documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;

4) a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;

5) an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;

6) a listing of filings made to, or permits issued by, other governmental agencies during the year;

7) a projection of project compliance activities scheduled during the next year;

8) a listing of the year's additions to the on-site compliance file; and

9) an evaluation of the on-site contingency plan for unexpected facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed below].

Confidential Information

Any information which the project owner deems confidential shall be submitted to the Energy Commission's Docket with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information, which is determined to be confidential, shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq.

Department of Fish and Game Filing Fee

Pursuant to the provisions of Fish and Game Code section 711.4, the project owner must remit to the California Department of Fish and Game (CDFG) a filing fee in the amount of eight hundred and fifty dollars ($850). The fee must be paid on or before the tenth day following the Energy Commission Business Meeting at which the project was approved. No construction may commence until the fees have been paid in full, and proof of payment is submitted to the CPM.

The project owner shall submit a copy of the CDFG receipt to the CPM within thirty (30) days of the Energy Commission Business Meeting in which the project was approved. The receipt shall identify the project, indicate the date paid, and specify the amount paid.

FACILITY CLOSURE

Introduction

At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made which provide the flexibility to deal with the specific situation and project setting which will exist at the time of closure. Laws, ordinances, regulations, and standards (LORS) pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure must be consistent with laws, ordinances, regulations, and standards in effect at the time of closure.

There are at least three circumstances in which a facility closure can take place: planned closure, unexpected temporary closure, and unexpected permanent closure**.**

Planned Closure

Planned closure occurs at the end of a project's life, when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence.

Unexpected Temporary Closure

This unplanned closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency.

Unexpected Permanent Closure

This unplanned closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unexpected closure where the owner remains accountable for implementing the on-site contingency plan described

below. It can also include unexpected closure where the project owner is unable to implement the contingency plan, and the project is essentially abandoned.

General Conditions for Facility Closure

Planned Closure

In order that a planned facility closure does not create adverse impacts, a closure process that will provide for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least twelve (12) months prior to commencement of closure activities (or other period of time agreed to by the CPM). The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

- identify and discuss impacts associated with the proposed facility closure activities and a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
- identify any facilities or equipment intended to remain on-site after closure, and any future use therefor;
- address conformance of the plan with all applicable laws, ordinances, regulations, standards, local/regional plans in existence at the time of facility closure, and applicable Conditions of Certification;
- identify any necessary mitigation to address significant impacts associated with the closure process or the post-closure status of facilities, equipment, or other project related remnants;
- require, prior to submittal of the proposed facility closure plan, a meeting between the project owner and the Commission CPM for the purpose of discussing the specific contents of the plan; and
- in the event that there are significant issues associated with the proposed facility closure plan's approval, or the desires of local officials or interested parties are

inconsistent with the plan, require one or more workshops and/or Commission hearings.

The project owner shall take immediate steps to eliminate any immediate threats to public health and safety or the environment, but shall not commence any other facility closure activities until Commission approval of the facility closure plan is obtained.

Unexpected Temporary Closure

In order to ensure that public health and safety and the environment are protected in the event of an unexpected temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to protect public health and safety, and to mitigate environmental impacts, are taken in a timely manner.

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less that sixty (60) days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facilities and shall be kept at the site at all times.

The project owner, in consultation with the CPM, ~~will~~ shall update the on-site contingency plan as necessary. The CPM may recommend revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for temporary closures of more than ninety (90) days (unless other arrangements are agreed to by the CPM), the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment and the safe shutdown of all equipment (also see specific Conditions of Certification for the technical areas of Facility Design and Hazardous Materials Management).

In the event of an unexpected temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., within twenty-four (24) hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of circumstances and the expected duration of the closure.

If the CPM determines that a temporary closure is likely to be permanent or for a duration of more than twelve (12) months, a closure plan consistent with that for a planned closure shall be submitted to the CPM within ninety (90) days of the CPM's determination (or other period of time agreed to by the CPM).

Unexpected Permanent Closure

In order to ensure that public health and safety and the environment are protected in the event of an unexpected permanent facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to protect public health and safety, and to mitigate environmental impacts, are taken in a timely manner (even in an unlikely abandonment scenario).

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less that sixty (60) days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facilities and shall be kept at the site at all times.

The project owner, in consultation with the CPM, ~~will~~ shall update the on-site contingency plan as necessary. The CPM may recommend revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific Conditions of Certification for the technical areas of Facility Design and Hazardous Materials Management.) Furthermore, the plan shall address how the project owner will ensure that all required closure steps will be successfully undertaken in the unlikely event of abandonment.

In the event of an unexpected permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., within twenty-four (24) hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the status of all closure activities.

DELEGATE AGENCIES

To the extent permitted by law, the Energy Commission may delegate authority for compliance verification and enforcement to various state and local agencies that have expertise in subject areas where specific requirements have been established as a Condition of Certification. If a delegate agency does not participate in this program, the Energy Commission staff will establish an alternative method of verification and enforcement. Energy Commission staff reserves the right to independently verify compliance.

In performing construction and operation monitoring of the project, the Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). The Commission staff retains this authority when delegating to a local CBO. Delegation of authority for compliance verification includes the authority for enforcing codes, the responsibility for code interpretation where required, and the authority to use discretion as necessary in implementing the various codes and standards.

Whenever an agency's responsibility for a particular area is transferred by law to another entity, all references to the original agency shall be interpreted to apply to the successor entity.

ENFORCEMENT

The Energy Commission's statutory authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Commission Decision.

Moreover, to ensure compliance with the terms and Conditions of Certification and applicable laws, ordinances, regulations, and standards, delegate agencies are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et. seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedures are described below:

Informal Dispute Resolution Procedure

The following procedure is designed to informally resolve disputes concerning interpreting compliance with the requirements of this Plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate this procedure for resolving a dispute. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents.

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et. seq., but is not

intended to be a substitute for, or prerequisite to, it. This informal procedure may not be used to change the terms and Conditions of Certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be referred to the full Energy Commission for consideration via the complaint and investigation process. The procedure for informal dispute resolution is as follows:

Request for Informal Investigation

Any individual, group, or agency may request the Energy Commission to conduct an informal investigation of alleged noncompliance with the Energy Commission's terms and Conditions of Certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and, within seven (7) working days of the CPM's request, provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report, within forty-eight (48) hours, followed by a written report filed within seven (7) days.

Request for Informal Meeting

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or

corrective measures undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within fourteen (14) days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1) immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;

2) secure the attendance of appropriate Energy Commission staff and staff of any other agency with expertise in the subject area of concern as necessary;

3) conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and

4) after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et. seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

If either the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint or a request for an investigation with the Energy Commission's Chief Counsel. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1230 et. seq.

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Commission ~~shall have~~ has the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Title 20, California Code of Regulations, sections 1232 - 1236).

POST CERTIFICATION CHANGES TO THE COMMISSION DECISION: AMENDMENTS, STAFF CHANGES AND VERIFICATION CHANGES

The project owner must petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to: 1) delete or change a Condition of Certification; 2) modify the project design or operational requirements; 3) transfer ownership or operational control of the facility; or 4) change a verification requirement.

A petition is required for **amendments** and for **insignificant (staff) changes**. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the Commission's Docket Unit in accordance with Title 20, California Code of Regulations, section 1209.
The criteria that determine which type of change process applies are explained below.

Amendment

A proposed change will be processed as an amendment if it involves a change to the requirement or protocol (and in some cases the verification) portion of a Condition of Certification, an ownership or operator change, or a potential significant environmental impact.

Insignificant Staff Change

The proposed change will be processed as an insignificant Staff change if it does not require changing the language in a Condition of Certification, does not have a potential significant environmental impact, and will not cause the project to violate laws, ordinances, regulations or standards.

Verification Change

The proposed change will be processed as a verification change if it involves only the language in the verification portion of the Condition of Certification. This procedure can only be used to change verification requirements that are of an administrative nature, usually the timing of a required action. In the unlikely event that verification language contains technical requirements, the proposed change must be processed as an amendment.

KEY EVENT LIST

PROJECT _____ DATE ENTERED

DOCKET # _____ PROJECT MANAGER

EVENT DESCRIPTION	***DATE ASSIGNED***
Date of Certification	
Start of Construction	
Completion of Construction	
Start of Operation (1st Turbine Roll)	
Start of Rainy Season	
End of Rainy Season	
Start T/L Construction	
Complete T/L Construction	
Start Fuel Supply Line Construction	
Complete Fuel Supply Line Construction	
Start Rough Grading	
Complete Rough Grading	
Start of Water Supply Line Construction	
Complete Water Supply Line Construction	
Start Implementing Erosion Control Measures	
Complete Implementing Erosion Control Measures	

V. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the High Desert Power Project is comprised of individual analyses examining the facility's design, as well as the efficiency and the reliability of the proposed power plant. These individual assessments include the technical disciplines of geologic hazards, as well as civil, structural, mechanical, and electrical engineering. The subjects of this assessment include not only the power generating equipment, but also other project-related elements such as the associated linear facilities (transmission line, and the gas and the water pipelines). This portion of the Decision addresses only the project as proposed by the Applicant; discussion of the engineering aspects associated with the use of dry or hybrid wet/dry cooling appears in section VIII. E., *infra.*

A. FACILITY DESIGN

The purpose of this portion of the project analysis is to determine whether the power plant and ancillary facilities have been described in sufficient detail, including design criteria and analysis methods, to provide reasonable assurance that the project can be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards. As part of this analysis, we also examined whether special design features should be considered during final design to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project.

1. Summary and Discussion of the Evidence

The project will employ site preparation and development criteria consistent with accepted industry standards. This includes design practices and construction methods for grading, flood protection, erosion control, site drainage, and site access. The project will be designed and constructed in conformance with the

latest edition of the California Building Code and other applicable codes and standards in effect at the time construction actually commences. (Ex. 82, p. 417.) A dynamic seismic analysis will be performed on major structures, equipment, and components including the combustion turbine generator (CTG) and steam turbine generator (STG) pedestals and foundations, the heat recovery steam generator (HRSG) structures and foundations, exhaust stacks and foundations, and cooling towers. (Ex. 82, p. 418.) Since the project is located in California Building Code Zone 4 (the zone of greatest potential shaking), it will be designed to appropriate seismic requirements. (Ex. 82, p. 422.)

Testimony of record indicates that the project was designed in order to maximize efficiency and reliability while providing the project owner operating flexibility at a reasonable capital cost. (9/16/99 RT 91-93.) Applicant has identified two alternative natural gas-fired design configurations for the HDPP.[11] Both are combined cycle power plants. One would generate approximately 678 MW of electricity and consists of two power trains. Each power train would incorporate one "G-class" CTG using a dry low NOx combustor, a HRSG equipped with a duct burner, and a STG. The 720 MW three power train design would utilize three "F-class " CTGs, three HRSGs, and three STGs. Each of these configurations would also include exhaust stacks, step-up transformers, wet cooling towers, separate water and wastewater treatment facilities, selective catalytic reduction, aqueous ammonia storage and handling equipment, pressure vessels, piping systems and pumps, air compressors, fire protection systems, heating, ventilating, and air conditioning systems, and potable water, plumbing, and sanitary sewage systems (see Figures 1 and 2). (9/16/99 RT 91, 93, 145; see also Exs. 1, 2, 82 p. 416, 95, 104, 105.)

[11] In the original Application for Certification, three project configurations were proposed. Applicant formally withdrew the simple cycle peaking plant configuration (832 MW) on July 8, 1998. (Ex. 38.)

FIGURE 1

FACILITY DESIGN

ISOMETRIC VIEW "F" CLASS GTG

Source: Exhibit 1

FIGURE 2

FACILITY DESIGN

ISOMETRIC VIEW "G" CLASS GTG

Source: Exhibit 1

The major electrical equipment associated with the project includes: the 7.2 mile long 230 kV single-circuit transmission line (discussed later in this Decision); a 230 kV substation; a 13.8 kV system, 4160 volt switchgear, and a 480 volt system; and power control wiring, protective relaying, grounding system, site lighting, and cathodic protection system. (Ex. 82, pp. 419-20.)

Designing and routing the 7.2 mile long overhead transmission line to the Victor Substation, constructing the new 230 kV switchyard on the eastern end of the project site, and constructing the water pipelines appear to be routine matters. (Ex. 82, p. 421.) The 30-inch, 32-mile long high-pressure natural gas pipeline will be located entirely within previously developed utility and transportation corridors. This pipeline will be owned by Southwest Gas and will be designed, constructed, operated, and maintained in accordance with applicable laws and standards. Cathodic protection will be installed along the pipeline to prevent or minimize corrosion. This gas line will, however, cross under four electric power lines owned by the Los Angeles Department of Water and Power (LADWP).

LADWP intervened in this proceeding, and expressed its concerns regarding potential hazards to transmission line components caused by fugitive dust from construction and installation of the pipeline. To address these concerns, we have incorporated Condition of Certification **MECH-5** which requires the project owner to coordinate pipeline construction activities with owners of potentially affected transmission or distribution lines. (Ex. 83 .)

The evidence also addresses potential project closure. This evidence contains a Condition of Certification (**GEN-9**) which, in conjunction with the general closure provisions contained in the Compliance Plan (*ante*), specifies measures appropriate to ensure that any future closure activities will comply with applicable laws. (Ex. 82, p. 423.)

Finally, the evidence of record establishes that the Conditions of Certification will ensure that ~~the~~ final design and construction of the project comply with applicable standards. Contained in the these Conditions are requirements specifying the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. The Conditions also require that no element of construction proceed without approval from the local building official [12] and that qualified special inspectors perform appropriate inspections required by the California Building Code. (Ex. 82, p. 423.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The High Desert Power Project is currently in the preliminary design stage.

2. The evidence of record contains sufficient information to establish that the proposed facility, whether in the 678 MW or the 720 MW configuration, can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards referenced in the appropriate portion of Appendix A of this Decision.

3. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety.

4. The Conditions of Certification below and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of facility closure.

We therefore conclude that, with the implementation of the Conditions of Certification listed below, the High Desert Power Project can be designed and constructed in conformity with the laws, ordinances, regulations, and standards

[12] In this instance, the local Chief Building Official serves as the delegatee of the Commission.

applicable to its geologic, and its civil, structural, mechanical, and electrical engineering aspects.

CONDITIONS of CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the California Building Code (CBC)[13] and all other applicable laws, ordinances, regulations, and standards (LORS) in effect at the time initial design plans are submitted to the Chief Building Official (CBO) for review and approval. The CBC in effect is that edition that has been adopted by the California Building Standards Commission, and published at least one hundred eighty (180) days previously.

In the event that the HDDP is designed to a successor edition to the 1998 CBC, the 1998 CBC provisions identified herein shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

Verification: Within thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) after receipt of the Certificate of Occupancy, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Commission's Decision have been met for facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within thirty (30) days of receipt from the CBO [1998 CBC, Section 109 – Certificate of Occupancy.]

GEN-2 The project owner shall furnish to the California Energy Commission CPM and to the CBO a schedule of facility design submittals, a Master Drawing List, and a Master Specifications List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major structures and equipment below). To facilitate audits by commission staff, the project

[13] All the Sections, Chapters, Appendices and Tables, unless otherwise stated, refer to Sections, Chapters, Appendices and Tables of the 1998 California Building Code (CBC).

owner shall provide designated packages to the CPM when requested.

Major Structures

Combustion Turbine Generator (CTG) Pedestal and Foundation
Steam Turbine Generator (STG) Pedestal and Foundation
CTG Enclosure Structure
STG Enclosure Structure
Inlet Air Filtration Equipment and Inlet Air Duct Support Structures
Heat Recovery Steam Generator (HRSG) Structure and Foundation
Exhaust Stack and Foundation
Field-Fabricated Tanks and Foundations
Shop-Fabricated Tanks and Foundations
Condenser Support Structure and Foundations
Natural Gas Compressor Structures and Foundations
Equipment Foundations (compressors, pumps, transformers)
Cooling Tower

Major Equipment

CTG
STG
HRSG including the Selective Catalytic Reduction (SCR) System
CTG Inlet Air Filter Structure
Shop-Fabricated Pressure Vessels
STG Condenser
Plume Abated Cooling Tower
Natural Gas Compressor
Main Step-up Transformers
Boiler Feed Pumps
Condensate Pumps

Verification: At least sixty (60) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection, equivalent to the fees listed in the 1998 CBC, Chapter 1, Section 107 and Table 1-A – Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A – Grading Plan Review Fees, and Table A-33-B – Grading Permit Fees. If the City of Victorville or San Bernardino County has adjusted the CBC fees for design review, plan check and construction inspection, the project owner shall pay the adjusted fees.

Verification: The project owner shall make the required payments to the CBO at the time of submittal of the plans, design calculations, specifications, or soil reports. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fee has been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE) to be in general responsible charge of the project. [Building Standards Administrative Code (Cal. Code of Regs., Tit. 24, § 4-209 – Designation of Responsibilities).

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project respectively. A project may be divided into parts, provided each part is clearly defined as a distinct unit. Separate assignment of general responsible charge may be made for each designated part.

Protocol: The RE shall:

1. monitor construction progress to ensure compliance with LORS;

2. ensure that construction of all the facilities conforms in every material respect to the applicable LORS, approved plans, and specifications;

3. prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;

4. be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications, and any other required documents;

5. be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and

6. be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not conform to applicable requirements.

If the RE or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval the name, qualifications and registration number of the RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five (5) days of the approval.

If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five (5) days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five (5) days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a) a civil engineer; b) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; c) a design engineer who is either a structural engineer or a civil engineer who is fully competent and proficient in the design of power plant structures and equipment Supports; d) a mechanical engineer; and e) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 and 6736 require state registration to practice as a civil engineer or structural engineer in California.]

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g. proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the CBO, for review and approval, the names, qualifications and registration numbers of all engineers

assigned to the project. [1998 CBC, Section 104.2 – Powers and Duties of Building Official.]

If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Protocol: A: The civil engineer shall:

1. design (or be responsible for design), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and

2. provide consultation to the RE during the construction phase of the project, and recommend changes in the design of the civil works facilities and changes in the construction procedures.

Protocol: B: The geotechnical engineer or civil engineer experienced and knowledgeable in the practice of soils engineering shall:

1. review all the engineering geology reports, and prepare final soils grading report;

2. prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report, and Section 3309.6 – Engineering Geology Report;

3. be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, Section 3317 – Grading Inspections;

4. recommend field changes to the civil engineer and RE;

5. review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may be susceptible to liquefaction, rapid settlement, or collapse when saturated under load; and

6. prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18, Section 1804 – Foundation Investigations.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations. [1998 CBC, Section 104.2.4 – Stop orders.]

Protocol: C: The design engineer shall:

1. be directly responsible for the design of the proposed structures and equipment supports;

2. provide consultation to the RE during design and construction of the project;

3. monitor construction progress to ensure compliance with LORS;

4. evaluate and recommend necessary changes in design; and

5. prepare and sign all major building plans, specifications, and calculations.

Protocol: D: The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO stating that the proposed final design plans, specifications, and calculations conform with all of the mechanical engineering design requirements set forth in the final Commission Decision.

Protocol: E: The electrical engineer shall:

1. be responsible for the electrical design of the project; and

2. sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approval of the engineers within five (5) days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five (5) days in which to submit the name, qualifications,

and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five (5) days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 1998 CBC, Chapter 17, Section 1701 – Special Inspections and Section – 1701.5 Type of Work (requiring special inspection), Section 106.3.5 – Inspection and observation program.

Protocol: The Special Inspector shall:

1. be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. observe the work assigned for conformance with the approved design drawings and specifications;

3. furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM; and

4. submit a final signed report to the RE, CBO, and CPM stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

A certified weld inspector [certified American Welding Society (AWS) and/or American Society of Mechanical Engineers (ASME) as applicable] shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

Verification: At least fifteen (15) days prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s) or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

If the special inspector is subsequently reassigned or replaced, the project owner has five (5) days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five (5) days of the approval.

GEN-7 The project owner shall keep the CBO informed regarding the status of construction. If any discrepancy between design and construction is discovered during construction, the project owner shall prepare and submit a non-conformance report (NCR) describing the nature of the discrepancy to the CBO. The NCRs shall reference this Condition of Certification and applicable sections of the applicable edition of the CBC.

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within fifteen (15) days. If disapproved, the project owner shall advise the CPM, within five (5) days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the "as-built" and "as graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings. [1998 CBC, Section 108 – Inspections.]

Verification: Within fifteen (15) days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM: (a) a written notice that the completed work is ready for final inspection; and (b) a signed statement that the work conforms to the final approved plans.

GEN-9 The project owner shall file a closure/decommissioning plan with the City of Victorville, San Bernardino County, and the CPM for review and approval at least twelve (12) months (or other mutually agreed to time) prior to commencing the closure activities.

The closure plan shall include a discussion of the following:

1. the proposed closure/decommissioning activities for the project and all appurtenant facilities constructed as part of the project;

2. all applicable LORS, all local/regional plans, and a discussion of the conformance of the proposed decommissioning activities to the applicable LORS and local/regional plans;

3. activities necessary to restore the site if the decommissioning plan requires removal of all equipment and appurtenant facilities; and

4. closure/decommissioning alternatives, other than complete restoration of the site.

Verification: At least twelve (12) months prior to closure or decommissioning activities, the project owner shall file a copy of the closure/decommissioning plan with the City of Victorville, San Bernardino County and the CPM for review and approval. Prior to the submittal of the closure plan, a meeting shall be held between the project owner and the CPM to discuss the specific contents of the plan.

GEO-1 Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) assigned must be approved by the CPM. The functions of the engineering geologist can be performed by the responsible geotechnical engineer, if that person has the appropriate California license.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction, the project owner shall submit to the CBO, for approval, the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal shall include a statement that CBO approval is needed. The CBO shall approve or disapprove of the engineering geologist(s) and shall notify the project owner and CPM of its findings within fifteen (15) days of receipt of the submittal.

If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned individual(s) to the CBO and CPM. The CBO will approve or disapprove of the engineering geologist(s) and will notify the project owner and the CPM of the findings within fifteen (15) days of receipt of the notice of personnel change.

GEO-2 The assigned engineering geologist shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 – Engineered Grading Requirement, and Section 3318.1 – Final Reports. Those duties are:

Protocol: Prepare the Engineering Geology Report. This report shall accompany the Plans and Specifications when applying to the CBO for the grading permit.

2. Monitor geologic conditions during construction.

3. Prepare the Final Geologic Report.

Protocol: The Engineering Geology Report is required by the 1998 CBC, Appendix Chapter 33, Section 3309.3 Grading Designation. It shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on the proposed development, and an opinion on the adequacy, for the intended use, of the site as affected by geologic factors.

The Final Geologic Report is to be completed after completion of grading, as required by the 1998 CBC, Appendix Chapter 33, Section 3318.1. It shall contain a final description of the geology of the site and any new information disclosed during the grading and the effect of same on recommendations incorporated in the approved grading plan. Engineering geologists shall submit a statement that, to the best of their knowledge, the work within their area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of this chapter.

Verification: Within fifteen (15) days after submittal of the application(s) for grading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. Within ninety (90) days following completion of the final grading, the project owner shall submit copies of the Final Geologic Report required by the 1998 CBC, Appendix Chapter 33, Section 3318 Completion of Work, to the CPM and the CBO.

CIVIL-1 Prior to the start of site grading, the project owner shall submit to the CBO for review and approval the following:

1. design of the proposed drainage structures and the grading plan;
2. an erosion and sedimentation control plan;
3. related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. soils report as required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 – Soils Engineering Report and Section 3309.6 – Engineering Geology Report.

Verification: At least fifteen (15) days prior to the start of site grading, the project owner shall submit the documents described above to the CBO for review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible geotechnical engineer or civil engineer, experienced and knowledgeable in the practice of soils engineering, identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area. [1998 CBC, Section 104.2.4 – Stop orders.]

Verification: The project owner shall notify the CPM, within five (5) days, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within five (5) days of the CBO's approval, the project owner shall provide to the CPM a copy of the CBO's approval to resume earthwork and construction in the affected areas.

CIVIL-3 The project owner shall perform inspections in accordance with the 1998 CBC, Section 108 – Inspections, Chapter 17, Section 1701.6 – Continuous and periodic special inspection and Appendix Chapter 33, Section 3317 – Grading inspection. All plant site-grading operations shall be subject to inspection by the CBO and the CPM.

If, in the course of inspection, it is discovered that the work is not being done in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

Verification: Within five (5) days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR), and the proposed corrective action. Within five (5) days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs for the reporting month shall also be included in the following Monthly Compliance Report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage facilities, the project owner shall obtain the CBO's approval of the final "as-graded" grading plans and final "as-built" plans for the erosion and sedimentation control facilities. [1998 CBC, Section 109 – Certificate of Occupancy.]

Verification: Within thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of this report to the CPM in the next Monthly Compliance Report.

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit to the CBO for review and approval the applicable designs, plans, and drawings, and a list of those project structures, components and major equipment items that will undergo dynamic structural analysis. Designs, plans, and drawings shall be those for:

1. major project structures;
2. major foundations, equipment supports and anchorage;
3. large field fabricated tanks;
4. turbine/generator pedestal; and
5. switchyard structures.

Protocol: The project owner shall:

1. obtain agreement with the CBO on the list of those structures, components, and major equipment items to undergo dynamic structural analysis;

2. meet the pile design requirements of the 1998 CBC. Specifically, Section 1807 – General Requirements, Section 1808 – Specific Pile Requirements, and Section 1809 – Foundation Construction (in seismic zones 3 and 4);

3. obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications [1998 CBC, Section 108.4 – Approval Required];

4. submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures at least ninety (90) days prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2 – Retention of plans and Section 106.3.2 – Submittal documents.]; and

5. ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer. [1998 CBC, Section 106.3.4 – Architect or engineer of record.]

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of construction, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications, and calculations conform with all of the requirements set forth in the final Commission Decision.

If the CBO discovers non-conformance with the stated requirements, the project owner shall resubmit the corrected plans to the CBO within twenty (20) days of receipt of the nonconforming submittal, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been

approved and are in conformance with the requirements set forth in the applicable LORS.

STRUC-2 The project owner shall submit to the CBO the required number of sets of the following:

1. concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. concrete pour sign-off sheets;

3. bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number [ref: AWS]; and

5. reports covering other structure activities requiring special inspections shall be in accordance with the 1998 CBC, Chapter 17, Section 1701 – Special Inspections, Section 1701.5 – Type of Work (requiring special inspection), Section 1702 – Structural Observation and Section 1703 – Nondestructive Testing.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five (5) days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the Condition(s) of Certification and applicable CBC chapter and section. Within five (5) days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within fifteen (15) days. If disapproved, the project owner shall advise the CPM, within five (5) days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 1998 CBC, Chapter 1, Section 106.3.2 – Submittal documents, and Section 106.3.3 – Information on

plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give the CBO prior notice of the intended filing.

Verification: On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the Monthly Compliance Report, when the CBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 1998 California Building Code (CBC) shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC. Chapter 16, Table 16–K of the 1998 CBC requires use of the following seismic design criteria: I = 1.25, I_p=1.5 and I_W=1.15.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of installation of the tanks or vessels containing the above specified quantities of highly toxic or explosive substances that would be hazardous to the safety of the general public if released, the project owner shall submit to the CBO, for review and approval, final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the CBO approvals of plan checks to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-1 Prior to the start of any increment of piping construction, the project owner shall submit, for CBO review and approval, the proposed final design drawings, specifications, and calculations for each plant piping system (exclude: domestic water, refrigeration systems, and small bore piping, i.e., piping and tubing with a diameter equal to or less than two and one-half inches). The submittal shall also include the applicable Quality Assurance/Quality Control (QA/QC) procedures. The project owner shall design and install all piping, other than domestic water, refrigeration, and small bore piping, to the applicable edition of the CBC. Upon completion of construction of any piping system, the project owner shall request the CBO's inspection approval

of said construction. [1998 CBC, Section 106.3.2 – Submittal documents, Section 108.3 – Inspection Requests.]

Protocol: The responsible mechanical engineer shall submit a signed and stamped statement to the CBO when:

1. the proposed final design plans, specifications, and calculations conform with all of the piping requirements set forth in the final Commission Decision; and

2. all of the other piping systems, except domestic water, refrigeration systems, and small bore piping, have been designed, fabricated, and installed in accordance with all applicable ordinances, regulations, laws and industry standards, including, as applicable:

   - American National Standards Institute (ANSI) B31.1 (Power Piping Code);
   - ANSI B31.2 (Fuel Gas Piping Code);
   - ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
   - ANSI B31.8 (Gas Transmission and Distribution Piping Code); and
   - Specific City/County code.

   The CBO may require the project owner, as necessary, to employ special inspectors to report directly to the CBO to monitor shop fabrication or equipment installation. [1998 CBC, Section 104.2.2 – Deputies.]

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of any increment of piping construction, the project owner shall submit to the CBO for approval, with a copy of the transmittal letter to the CPM, the proposed final design plans, specifications, calculations, and quality control procedures for that increment of construction of piping systems, including a copy of the signed and stamped engineer's certification of conformance with the final Commission Decision. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code

certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation. [1998 CBC, Section 108.3 – Inspection Requests.]

The project owner shall:

1. ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and

2. have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO, for review and approval, final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall send copies of the CBO plan check approvals to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO's and/or Cal-OSHA inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-3 Prior to the start of construction of any heating, ventilating, air conditioning (HVAC) or refrigeration system, the project owner shall submit to the CBO, for review and approval, the design plans, specifications, calculations, and quality control procedures for that system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the applicable edition of the CBC. Upon completion of any increment of

construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications, and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings, and calculations, and submit a signed statement to the CBO that the proposed final design plans, specifications, and calculations conform with the applicable LORS. [1998 CBC, Section 108.7 Other Inspections; Section 106.3.4 – Architect or engineer of record.]

At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, with a copy of the transmittal letter to the CPM.

The project owner shall send copies of CBO comments and approvals to the CPM in the next Monthly Compliance Report. The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-4 Prior to the start of each increment of plumbing construction, the project owner shall submit for the CBO's approval the final design plans, specifications, calculations, and QA/QC procedures for all plumbing systems, potable water systems, drainage systems (including sanitary drain and waste), toilet rooms, building energy conservation systems, and temperature control and ventilation systems, including water and sewer connection permits issued by the local agency. Upon completion of any increment of construction, the project owner shall request the CBO's inspection approval of said construction. [1998 CBC, Section 108.3 – Inspection Requests, Section 108.4 – Approval Required.]

Protocol: The project owner shall design, fabricate, and install:

1. plumbing, potable water, all drainage systems, and toilet rooms in accordance with Title 24, California Code of Regulations, Division 5, Part 5, and the California Plumbing Code (or other relevant section(s) of the currently adopted California Plumbing Code and Title 24, California Code of Regulations); and

2. building energy conservation systems and temperature control and ventilation systems in accordance with Title 24, California Code of Regulations, Division 5, Chapter 2-53, Part 2.

The final plans, specifications, and calculations shall clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications, and calculations conform with all of the requirements set forth in the final Commission Decision.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction of any of the above systems, the project owner shall submit to the CBO the final design plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

The project owner shall transmit a copy of the CBO's inspection approvals to the CPM in the next Monthly Compliance Report following completion of that increment of construction.

MECH-5 Prior to construction of the natural gas pipeline, the project owner shall coordinate with the owners of any electric power transmission or distribution lines that lie over or near the pipeline route, and shall comply with those owners' standards.

Verification: At least thirty (30) days prior to the beginning of construction of the natural gas pipeline, the project owner shall provide to the CPM written evidence that coordination has taken place with the owners of any affected electric transmission or distribution lines, and written certification that all applicable standards of those owners have been incorporated into the design and construction of the pipeline.

ELEC-1 For the 13.8 kV and lower systems, the project owner shall not begin any increment of electrical construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one (1) year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. [1998 CBC, Section 108.4 – Approval Required, and Section 108.3 – Inspection Requests.]

The following activities shall be reported in the Monthly Compliance Report:

1. receipt or delay of major electrical equipment;
2. testing or energization of major electrical equipment; and
3. the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

ELEC-2 The project owner shall submit to the CBO the required number of copies of items A and B for review and approval and one copy of item C [CBC 1998, Section 106.3.2 – Submittal documents]:

A. Final plant design plans to include:
   1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems;
   2. system grounding drawings;
   3. general arrangement or conduit drawings; and
   4. other plans as required by the CBO.

B. Final plant calculations to establish:
   1. short-circuit ratings of plant equipment;
   2. ampacity of feeder cables;
   3. voltage drop in feeder cables;
   4. system grounding requirements;
   5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
   6. system grounding requirements;
   7. lighting energy calculations; and
   8. other reasonable calculations as customarily required by the CBO.

C. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the final Commission Decision.

Verification: At least thirty (30) days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical equipment installation, the project owner shall submit

to the CBO for review and approval the final design plans, specifications, and calculations for the items enumerated above, including a copy of the signed and stamped statement from the responsible electrical engineer certifying compliance with the applicable LORS. The project owner shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

B. POWER PLANT EFFICIENCY

The California Environmental Quality Act and its implementing regulations require us to consider a proposed power plant's energy requirements and energy use efficiency, effects on local and regional energy supplies and resources, requirements for additional energy supply capacity, compliance with existing energy standards, and whether feasible alternatives exist that could reduce a wasteful, inefficient, and unnecessary consumption of energy. (Pub. Resources Code, § 21002.1; 14 Cal. Code of Regs., Appendix F.)

1. Summary and Discussion of the Evidence

The High Desert Power Project will be configured as a multiple train combined cycle power plant. In a combined cycle design, electricity is generated by gas turbines and additionally by steam turbines that operate on heat energy recuperated from the gas turbines' exhaust. By recovering the heat which would otherwise be lost up the exhaust stack, the efficiency of a combined cycle power plant is increased considerably from that of either gas or steam turbines operating alone. The multiple power train configuration will provide the project operator the option of shutting down one or more of the individual machines while allowing the remaining turbine or turbines to continue to run at full load. Thus, the plant can generate at part load while maintaining optimal efficiency. (Ex. 82, p. 455.)

“G-class” turbines would be employed in the two-train (678 MW) configuration; "F-class" turbines would be used for the three-train (720 MW) configuration. The evidence indicates that both these turbine classes represent acceptably efficient technology. The G-class turbine, however, is typically slightly more efficient than those of the F-class. The evidence further establishes that the Applicant's proposal to include gas turbine inlet air cooling represents a sound engineering choice for the project site. (Ex. 82. pp. 156-57.)

The project would generate electrical power at an average thermal efficiency of 54.2 percent (F-class) or at 55.1 percent (G-class). This would result in the consumption of the natural gas fuel at a rate of up to 2,251 million Btus per hour, or 197 million therms per year. The evidence of record establishes that this level of fuel use will not create a substantial increase in demand upon existing energy sources and will not require the development of any new energy sources. Overall, the project will consume energy in an efficient manner. (Ex. 82, pp.454-55, 457.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The High Desert Power Project will employ gas turbines that are among the most fuel-efficient currently available, whether constructed in the two-train(G-class turbine) or three-train (F-class turbine) configuration .

2. The G-class turbine is slightly more efficient than is the F-class turbine.

3. The project (in either configuration) will not create a substantial increase in demand for natural gas.

4. Available gas supplies exceed the fuel requirements of the proposed project.

5. The project's design, incorporating multiple power trains, will allow the power plant to generate electricity at less than full load while maintaining optimal efficiency.

6. The operational efficiency of the proposed project is consistent with that of comparable power plants.

7. The High Desert Power Project will not consume natural gas in a wasteful, inefficient, or unnecessary manner.

We therefore conclude that the proposed project will not cause any significant direct or indirect adverse impacts upon energy resources.

D. NATURAL GAS PIPELINES

In June 1998, Applicant modified the proposed project by adding a 32-mile long natural gas pipeline. This addition triggered supplemental review by the Commission and by federal agencies including the Bureau of Land Management (BLM) and the U.S. Fish and Wildlife Service (USFWS). The more particularized environmental concerns associated with this linear facility are discussed elsewhere in this Decision such as in the "Biological Resources," "Cultural Resources," and "Paleontological Resources" portions, *infra*. General points concerning pipeline construction and engineering-related activities are summarized below.

1. Summary and Discussion of the Evidence

Two pipelines are proposed to connect the High Desert power plant to natural gas sources. The "south" line is a 24-inch high-pressure steel pipeline approximately 3.35 miles in length. It extends due south from the proposed power plant site to the intrastate gas transmission facilities of the Southern California Gas Company. It passes entirely through the cities of Victorville and Adelanto, following along the sides of several city streets. The south line does not cross sensitive habitat areas.

The "north" line is a 30-inch diameter high-pressure steel pipeline approximately 32 miles in length. It runs north-northwesterly from the plant site to the interstate gas transmission facilities of the Kern River Gas Transmission Company and the intrastate facilities of Pacific Gas and Electric Company. This pipeline follows a perimeter road along the former George Air Force Base, then parallels Helendale Road to the north until it intersects with Colusa Road about three miles north of the base. The north line then proceeds west approximately three miles until it intersects Highway 395 and an adjacent, existing utility corridor. This line then proceeds north along the west side of the existing utility corridor for about 21

miles. The north line traverses critical habitat areas. (9/30/99 RT 28; see also Exs. 27, 28,100, pp. 6-8 .)

The testimony of record establishes that while Applicant is seeking approval for the 32 mile gas pipeline, it has reserved the option to not construct it. (9/30/99 RT 171-72.) If constructed, the north line would be solely for the HDPP; any expansion for service requirements in the Victorville area would be supplied by the existing Southwest Gas distribution infrastructure. (Ex.100, p.12.) Southwest Gas would own and operate the gas pipelines. (Ex. 94, p.1.3-1.) [15]

Pipeline construction typically involves: clearing and grading; trenching; stringing; bending; pipe installation; back filling; hydrostatic testing; cleanup and restoration; and commissioning. Special procedures will be used for crossing roads, utilities, and washes as needed. (Ex. 94, p.1.4-3.) Additionally, Southwest Gas will use an existing access road (extending the length of the utility corridor) for construction and post -construction monitoring activities on the north pipeline. It will also employ measures to restrict the entry of unauthorized vehicles along the right-of-way. (Ex. 100, pp.11-12.) Southwest Gas has obtained a portion of the required right-of-way, and indicated that it is satisfactorily progressing on the remainder. (9/30/99 RT 45, 48.) The evidence indicates that appropriate measures will be taken to address significant environmental concerns; these are discussed later in this Decision.

The pipeline will operate for the lifetime of the HDPP, expected to be a minimum of 30 years. (Ex. 94, p.1.2-1.) Ultimate closure will be governed by the Compliance Plan in this Decision. (9/30/99 RT 35-36.)

[15] Southwest Gas is a natural gas utility engaged in the transmission, distribution, transportation, and sale of retail natural gas for domestic, commercial, agricultural, and industrial uses to customers in various parts of California, Arizona, and Nevada. (9/30/99 RT 27.) The project is located in Southwest's existing service territory. (Letter of October 14, 1999; see also 9/30/99 RT 36-37.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The natural gas pipelines associated with the High Desert Power Project will be designed, constructed, and operated consistent with industry standards and applicable law.

2. The Applicant has not yet decided whether or not to actually construct the 32 mile long "north" pipeline.

3. Specific environmental concerns associated with construction of the 32-mile long natural gas pipeline are addressed in other portions of this Decision.

4. Southwest Gas Corporation will own and operate the natural gas pipelines associated with the High Desert Power Project.

5. The natural gas pipelines are adequate to serve the needs of the High Desert Power Project.

We therefore conclude that the natural gas pipelines are adequate to meet the intended purpose of supplying fuel to the High Desert Power Project.

E. TRANSMISSION SYSTEM ENGINEERING

In addition to the power plant portion of the High Desert Power Project, Applicant will construct a transmission tie-line as an appurtenant facility. (See Pub. Resources Code, §§ 25020, 25110.) The Commission's jurisdiction includes "... any electric power line carrying electric power from a thermal power plant... to a point of junction with any interconnected transmission system." (Pub. Resources Code, § 25107.) Since the 7.2 mile long generation tie-line between the High Desert project and the Victor Substation is not part of the electric system grid controlled by the California Independent System Operator (Cal ISO; Ex. 88, p.3), our examination of the "Transmission System Engineering" factors includes determining whether or not the transmission intertie facilities are likely to conform with all applicable laws, ordinances, regulations, and standards intended to ensure safe and reliable electric power transmission and, if not, what mitigation is needed.

As explained below, the Cal ISO's criteria apply to all existing and proposed facilities interconnecting with the controlled grid. (Ex. 88, p. 2.) Thus, our present examination has been coordinated with the evaluation performed by the Cal ISO in order to also determine the project's effects upon the interconnected electrical grid. Commission staff partially relies on the Cal ISO's determinations in formulating recommendations concerning conformance with applicable reliability standards, as well as the need for additional transmission facilities and any attendant environmental review which may be caused by a particular project.

1. Summary and Discussion of the Evidence

Description. The HDPP project is located in an area containing 500, 287, 230, and 115 kV facilities owned by SCE and LADWP. The Victor Substation is located west of the City of Victorville.

The transmission system associated with the proposed HDPP project consists of a 230 kV switchyard to be constructed at the project site, a 7.2 mile single-circuit outlet line, and additions (including a 230 kV bus) to the Victor Substation. Eight circuit breakers would be used for the 678 MW configuration, eleven for the 720 MW version. (Ex. 82, p. 463.)

The transmission line will exit the switchyard and proceed in a southeasterly direction down El Evado Road for approximately 1.8 miles. The line will then parallel the Intermountain Power Project direct current line in a southerly direction for 0.7 miles. At this point, it crosses under the existing transmission line corridor and proceeds southerly for 0.6 miles until it crosses under LADWP's 500 kV line. About 0.2 miles south of this undercrossing, the line will intersect and parallel SCE's 115 kV line in a southwesterly direction for approximately 3.9 miles, terminating at the Victor Substation.

This intertie line will be a single circuit design, with two 954 thousand circular mil conductors per phase. It will be supported by steel lattice towers where it parallels existing lines, and steel pole structures elsewhere. (Ex. 82, pp. 462-63.) Line crossings will be coordinated with the owners of the existing transmission lines and sufficient separation will be maintained in order to reduce the risk of a common outage [see Condition of Certification **TSE-1(g)**.]

Role of the Cal ISO. The interconnection of a new generator (and any associated modifications to the transmission system), if not properly designed and operated, could adversely impact the reliable operation of the state's electrical power system. The primary roles of the Cal ISO, as they pertain to the interconnection of new generation, are to ensure and to coordinate the reliable operation of the Cal ISO controlled electrical grid. To achieve these goals, the Cal ISO coordinates the planning of modifications to the grid to ensure they meet the Cal ISO's Grid Planning Criteria. These criteria essentially incorporate Western Systems Coordinating Council (WSCC) reliability criteria, the North American Electric Reliability Council (NERC) planning standards, and local area reliability criteria. (Exs. 82, pp. 460-61, 464; 88, pp.1, 4.)

To fulfill its primary role, the Cal ISO reviews a preliminary interconnection study. This study is performed, at the request of a power plant developer, by the Participating Transmission Owner (PTO). In the present case, the PTO is SCE. (See Exs. 9, 21, 22, 23, 26 36, 47.) The Cal ISO may also perform independent analyses to determine a proposed project's impacts upon system reliability.

The Cal ISO assesses the proposed project to determine whether the new project would cause thermal overloads, voltages which are too high or too low, and/or electrical system instability. In addition, the reliability evaluation considers credible emergency conditions including the loss of a single or double circuit line, the loss of a transformer or generator, or the loss of a combination of these facilities.

Results of Analysis. Applicant's witness testified that various potential interconnection points and tie-line routings were analyzed. This analysis included performing power flow and economic studies in order to determine impacts upon the interconnected transmission system before selecting the Victorville Substation as the preferable interconnection point. (9/16/99 RT 226-28; see also Ex. 82, p. 467.)

Evidence sponsored by the Cal ISO establishes that the main impact of generation from the High Desert project occurs in the 230 and 115 kV systems from the Lugo Substation north. Addition of the project's generation will further stress the transmission system in this area and require modifications to existing "Remedial Action Schemes"[16] (RAS; Ex. 88, p. 5.) Specifically, five RAS are required, two to be added to the existing RAS and three new ones. (9/16/99 RT 237; Exs. 82, p. 467; 88, p. 8.) The formulation of these mechanisms is in lieu of transmission upgrades and is consistent with applicable Cal ISO criteria, is economical, and will accommodate generation from either the 678 or 720 MW configuration. [9/16/99 RT 228, 237; Ex. 82, p. 466; see also Condition of

[16] A "Remedial Action Scheme" in the present case basically provides for the automatic shutdown (or "tripping") of generation in the event of a transmission line outage or contingency. (9/16/99 RT 235-36.)

Certification **TSE-1(e)**.] In summary, the evidence indicates that interconnection of the project at the Victor Substation is acceptable. (Exs. 49, 108.)

Closure. Before generating facilities are permitted to provide power to the California Power Exchange, generator standards must be met and power plant operators must commit to comply with instructions of the Cal ISO dispatchers. Participating generators must sign a Participating Generator Agreement. The evidence indicates that procedures for planned, unexpected temporary, and unexpected permanent closures are developed as part of this process to establish coordination between the generator, the PTO, and the Cal ISO. Rules promulgated by the California Public Utilities Commission also govern project closure. In addition, the Compliance Plan incorporated as part of this Decision contains provisions ensuring that project closure will comply with applicable laws, ordinances, regulations, and standards, and that system safety and reliability will not be jeopardized. (Ex. 82, pp. 468-69.)

FINDINGS and CONCLUSIONS

Based upon the unrefuted evidence of record, we find and conclude as follows:

1. The California Independent System Operator has determined that interconnecting the High Desert Power Project at the Victor Substation will not create adverse impacts to the reliability of the electrical system.

2. The California Independent System Operator has determined that interconnecting the High Desert Power Project, whether in the 678 or 720 MW configuration, will not require the construction of additional transmission facilities downstream of the Victor Substation.

3. The High Desert Power Project's electrical generation will be subject to remedial action schemes specified by the California Independent System Operator.

4. The outlet line from the power plant to the point of interconnection at the Victor Substation will transport approximately 700 megawatts in an acceptably economic manner.

5. The Conditions of Certification below ensure that the transmission related aspects of the High Desert Power Project will be designed, constructed, and operated in

conformance with the applicable laws, ordinances, regulations, and standards identified in the pertinent portion of Appendix A of this Decision.

We therefore conclude that interconnection of the project at the Victor Substation is acceptable and will not result in the violation of any criteria pertinent to transmission system engineering.

CONDITIONS of CERTIFICATION

TSE-1 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to requirements 1a through ~~1f~~ 1h listed below. The substitution of CPM approved "equivalent" equipment and equivalent switchyard configurations is acceptable.

a. The project 230 kilovolt switchyard shall include a breaker-and-a-half breaker and bus configuration.

b. Breakers and bus shall be sized to comply with a short circuit analysis.

c. An approximately 7.2 mile single circuit 230 kilovolt line using lattice or steel pole construction with two 954 thousand circular mil conductors (or larger) shall be constructed to the Victor 230 kilovolt substation.

d. Termination facilities at the Victor 230 kilovolt substation shall comply with applicable Cal ISO and Edison interconnection standards (CPUC Rule 21 and Cal ISO Tariff).

e. The HDPP shall be included in the existing Edison remedial action schemes and new remedial action schemes shall be developed in coordination with Edison and the Cal ISO to meet Edison's Transmission Planning Criteria and Guidelines and the WSCC and NERC Reliability criteria and Planning standards.

f. The transmission facilities shall meet or exceed the requirements of CPUC GO-95; and

g. Outlet line crossings and areas where the outlet line parallels other transmission or distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards. The outlet line shall cross under existing extra high voltage transmission lines. Sufficient separation shall be maintained between the outlet line and the Adelanto-Intermountain 500 kV DC line to reduce the risk of the common mode outage of both lines.

h. Recommendations contained in the HDPP Facilities study shall be followed by the project owner/operator.

Verification: At least sixty (60) days prior to start of construction of transmission facilities, the project owner shall submit for approval to the CPM electrical one-line diagrams signed and sealed by a registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements 1a through ~~1f~~ 1h above. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CPM approval.

TSE-2 The project owner shall inform the CPM of any impending changes which may not conform to the requirements 1a through ~~1f~~ 1h of Condition **TSE-1**, and have not received CPM approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or switchyard configurations shall not begin without prior written approval of the changes by the CPM.

Verification: At least sixty (60) days prior to construction of transmission facilities, the project owner shall inform the CPM of any impending changes which may not conform to requirements 1a through ~~1f~~ 1h of Condition **TSE-1** and request approval to implement such changes.

TSE-3 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction and any subsequent CPM approved changes thereto, to ensure conformance with CPUC GO-95 and CPUC Rule No. 21 and these conditions. In case of non-conformance, the project owner shall inform the CPM in writing within ten (10) days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within sixty (60) days after synchronization of the project, the project owner shall transmit to the CPM an engineering description(s), one-line drawings of the "as-built" facilities, and the results of the short circuit study signed and sealed by a registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95, CPUC Rule No. 21 and these conditions shall be concurrently provided.

F. TRANSMISSION LINE SAFETY and NUISANCE

The electricity generated by the High Desert Power Project will be transmitted to the existing area transmission network through the single-circuit 230 kV overhead transmission line described previously. This new line has the potential to cause both safety hazards and nuisance impacts. Therefore, it was evaluated to ascertain whether it created aviation safety hazards or interfered with radio frequency communication, as well as whether it would result in audible noise, fire hazards, nuisance shocks, or an undesirable level of exposure to electric and magnetic fields. Similar design and operational measures are appropriate whether the power plant generates 678 or 720 MW. (Ex. 82, p. 70.)

1. Summary and Discussion of the Evidence

Safety Hazards. The transmission line may pose a hazard to aviation, cause fires, and create electric and magnetic field exposures. The evidence of record establishes that potential safety hazards can be minimized through compliance with applicable laws, ordinances, regulations, and standards. (Ex.82, p. 70; see also 9/16/99 RT 52-53.)

The evidence shows that compliance with Federal Aviation Administration criteria will minimize any associated hazards to aviation. Fire hazards could result from sparks from the conductors or from direct contact between the line and nearby trees; however, compliance with the requirements of California Public Utilities Commission General Order 95 will prevent the accumulation of combustible material in the transmission line right-of-way and thus reduce these potential impacts. (Ex. 82, pp. 70-72.) Similarly, hazardous shocks will be reduced by observing applicable standards developed to prevent direct or indirect contact with an energized transmission line. (Ex. 82, pp. 72-73.) The Conditions of Certification require adherence to these rules.

Electric and magnetic fields occur whenever electricity flows. Exposure to them together is referred to as "EMF exposure." Although available scientific evidence does not indicate that EMF exposure causes a significant hazard to humans, the topic has become a matter of increased concern in recent years to those living near high-voltage lines. The electric field component of EMF typically manifests itself as radio noise, audible noise, and nuisance shocks; the magnetic field component can penetrate most objects and can cause prolonged exposure to individuals. It is the magnetic field component which creates concerns about possible public health consequences.

The strengths of the fields from the transmission line can be estimated using established procedures. Electric field strengths are specified in units of kilovolts per meter (kV/m), and magnetic field strengths in milligauss (mG). The evidence in the present case shows that field strength values were calculated for the proposed transmission line at the edge of the 100 foot right-of-way. The electric field strengths are approximately .53 kV/m at this point; this is below the level of 1.6 kV/m frequently associated with shock hazards. Magnetic fields strengths vary from approximately 39.3 mG to 62.8 mG and are similar in intensity to those from lines of the same voltage class and current carrying capacity. Given these levels, the rapid decrease in field strength with distance, and the fact that the nearest residential development is approximately 400 feet from the line, the evidence establishes that any long-term exposures will be within normal background levels and thus acceptable. (Ex. 82, pp. 75-77.)

<u>Nuisance Impacts.</u> The transmission line may interfere with radio frequency communication or cause audible noise or nuisance shocks. Radio interference is typically caused by spark gap discharges; these are minimized through appropriate maintenance regimens, as required in the Conditions below. Audible noise should approximate the current ambient levels at the project site (50 dBA to 70 d BA), and the 400 foot distance from the nearest residential development will serve to further reduce any potential noise impacts. Nuisance shocks

generally result from contact with objects in which electric charges were induced by the fields from the energized line, but do not typically cause physiological harm. These can be prevented by implementing the grounding procedures required in the Conditions below. (Ex. 82, p. 74.)

Finally, the evidence concludes that the proposed transmission line will be designed and operated in compliance with safety-related specifications, and that it will not pose a significant adverse impact to public health. The measures specified in the Conditions of Certification below will apply whether the HDPP project is built in the 678 or the 720 MW configuration. (Ex. 82, pp. 77-78.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The proposed transmission line which will be constructed in conjunction with the High Desert Power Project is not likely to create safety hazards to aviation, nor to create fire hazards.

2. The electric and the magnetic field strengths created by the project's transmission line will be within acceptable limits, and will not create significant adverse human health impacts.

3. The project's transmission line will not create an unacceptable interference with radio frequency communications, nor will it create a significant shock hazard to humans.

4. Audible noise from the proposed transmission line will be within acceptable limits.

5. The design, construction, and operational measures set forth in the Conditions below are appropriate whether the High Desert Power Project is built in the 678 or the 720 MW configuration.

6. The Conditions of Certification below will ensure that the transmission line is designed, constructed, and operated in compliance with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the transmission line proposed as part of this project will not create any significant adverse health, safety, or nuisance impacts.

CONDITIONS of CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to requirements of GO-95 and Title 8, section 2700 et seq., of the California Code of Regulations.

Verification: Thirty (30) days before start of transmission line construction, the project owner shall submit to the Commission's Compliance Project Manager (CPM) a letter from a California-registered electrical engineer affirming that the proposed transmission line will be constructed according to requirements of GO-95 and Title 8, section 2700 et seq. of the California Code of Regulations.

TLSN-2 The project owner shall make every reasonable effort necessary to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the transmission line and related facilities. In addition to any transmission line repairs, the relevant corrective actions shall include, but not be limited to, adjusting or modifying receivers, adjusting, repairing, replacing or adding antennas, antenna signal amplifiers, filters or lead-in cables.

The project owner shall maintain written records, for a period of five (5) years, of complaints of radio and television interference attributable to operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained. The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

Verification: All reports of line-related complaints shall be summarized and included in the Annual Compliance Report to the CPM.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields before beginning construction and after the line is energized. Measurements should be

made at representative points along the line to verify the design assumptions relative to field strengths. The areas to be measured should include the facility substation and any residences near the right-of-way.

Verification: The project owner shall file a copy of the first set of pre-project measurements with the CPM at least thirty (30) days before the start of construction. The post-project measurement shall be filed with the CPM within thirty (30) days after the day the line is energized.

TLSN-4 The project owner shall ensure that the transmission line right-of-way is kept free of combustible waste material, as required under the provisions of Section 4292 of the Public Resources Code and Title 14, Section 1250 of the California Code of Regulations, "Fire Prevention Standards for Electric Utilities.

Verification: The project owner shall provide a summary of inspection results and any fire prevention activities along the right-of way in the Annual Compliance Report to the CPM.

TLSN-5 The project owner shall send a letter to all owners of property within or outside the right-of-way at least sixty (60) days prior to first transmission of electricity.

Protocol: The letter shall include the following:

- a discussion of the nature and operation of a transmission line;
- a discussion of the project owner's responsibility for grounding existing fences, gates, and other large permanent objects located within the right-of-way regardless of ownership;
- a discussion of the property owner's responsibility to notify the project owner whenever the property owner adds or installs a metallic object which will require grounding, as noted above; and
- a statement recommending against adding fuel to motor vehicles or other mechanical equipment underneath the line.

Verification: The project owner shall submit the proposed letter to the CPM for review and approval thirty (30) days prior to mailing it to the property owners, and shall maintain a record of correspondence (notification and responses) related to this requirement in a compliance file. The project owner shall notify the CPM in the first Monthly Compliance Report that the letters were mailed and that copies are on file.

TLSN-6 The project owner shall ensure the grounding of any ungrounded permanent metallic objects within the right-of-way, regardless of

ownership. Such objects shall include fences, gates, and other large objects. These objects shall be grounded according to procedures specified in the National Electrical Safety Code.

In the event of a refusal by the property owner to permit such grounding, the owner/operator shall so notify the CPM. Such notification shall include, when possible, the property owner's written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding of the object involved.

Verification: At least ten (10) days before the line is energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

B. PUBLIC HEALTH

The public health analysis supplements that performed under the preceding "Air Quality" discussion. This section focuses on exposure to pollutants for which no air quality standards have been established (noncriteria pollutants). The purpose of this topical analysis is to assess whether a significant health risk would result from exposure to the airborne emissions of these pollutants.

1. Summary and Discussion of the Evidence

Health risks associated with a project can result from high-level exposure which creates immediate onset (acute) effects, or from prolonged low-level exposure which creates chronic effects. For projects of this type, acute effects occur only during major accidents and are not expected from routine operations when emissions are much lower. Long-term, chronic exposures are therefore a greater concern in assessing possible public health impacts. (Ex. 82, p. 54.) The evidence of record includes an evaluation of the potential noncancer and cancer health effects and considers possible effects upon sensitive receptor sites such as schools, day-care centers, retirement centers, and hospitals located within a 10-mile radius of the proposed project. (Exs. 4, 16, 82; see also Ex.102; 9/16/99 RT 51-52.)

The background levels of noncriteria pollutants in the project area were not measurable. Thus, the operational emissions from the gas turbines and cooling towers constitute the primary source of potential impacts from noncriteria pollutants. (Ex. 82, pp. 54, 56.) Because the emissions levels differ between the 678 and 720 MW configurations, both were analyzed. (Ex. 82, p. 54.)

The health risk assessment process used to evaluate the potential for adverse health effects consists of the following steps:

- identifying each pollutant of concern and the types of health effects it can cause;
- assessing the relation between the magnitude of exposure and the probability of adverse effects;
- performing dispersion modeling to determine the potential extent of pollutant exposures; and
- determining the resultant risk for creating adverse health impacts.

Health risk analyses were conducted for each of the potential project configurations to determine the potential for acute and chronic effects on the liver, the central nervous system, the immune system, kidneys, the reproductive system, the skin, and the respiratory system. The evidence further consider~~s~~ed the potential for adverse noncancer health effects from the following pollutants: ammonia, acrolein, naphthalene, toulene, xylene, manganese, and chlorine. Polycyclic aromatic hydrocarbons and butadiene were evaluated regarding their possible cancer risks, and acetaldehyde, benzene, formaldehyde, nickel, propylene oxide, and chloroform were assessed for both cancer and noncancer risks. (Ex. 82, p. 56.)

The evidence indicates that a potential cancer risk of one in one million is regarded as the threshold of significance for sources of environmental carcinogens. For noncarcinogenic pollutants, significant health impacts are considered unlikely when the hazard index estimate is less than 1.0. (Ex. 82, p. 55.) The assessment calculates a hazard index value of less than 1.0 for all noncarcinogenic pollutants. This indicates that significant noncancer health effects from project operation would be unlikely. Moreover, the evidence shows that the highest cancer risk estimate was 0.7 in one million; this represents the risk for an individual exposed at the highest possible levels to all the carcinogenic pollutants from the 720 MW combined cycle configuration. The risk for the 678 MW combined cycle configuration is 0.5 in one million. Both these risk values

are below the one in one million level considered significant in evaluating potential public health impacts. (*Id*.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The primary potential adverse public health impacts associated with the High Desert Power Project are due to the emission of pollutants originating from the combustion turbines and the cooling towers.

2. As discussed in the "Air Quality" portion of this Decision, emissions of criteria pollutants will be at levels consistent with those established to protect public health.

3. The accepted method used by state regulatory agencies in assessing the potential significance of both acute and chronic noncarcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the potential significance of carcinogenic public health effects.

4. The hazard index method establishes a value of 1.0 or greater as the threshold of significance for potential adverse public health impacts.

5. The evidence establishes that hazard index values of less than 1.0 were calculated for both carcinogenic and noncarcinogenic pollutants for both the 678 and the 720 MW configurations.

6. The emissions of noncriteria pollutants from the High Desert Power Project are not likely to cause acute or chronic adverse public health impacts.

We therefore conclude that emissions of noncriteria pollutants from the project will not pose a significant direct or indirect adverse public health risk.

C. HAZARDOUS MATERIALS MANAGEMENT

Public safety concerns may arise from the construction and operation of a proposed project, especially insofar as the handling, transportation, and disposal of hazardous materials are concerned. Therefore, the Commission examines each power plant proposal to determine if the facility is adequately designed to ensure the safe handling and storage of these materials. (Related issues are addressed in the "Waste Management," "Worker Safety," and "Traffic and Transportation" portions of this Decision.)

1. Summary and Discussion of the Evidence

Several locational factors affect the potential of a particular project to cause adverse public health and safety impacts. These include the local meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. The evidence of record contains an examination of these factors in conjunction with the hazardous materials which will be used at the project.

The results of this examination indicate that five hazardous materials – sodium hypochlorite, sodium hydroxide, sulfuric acid, aqueous ammonia, and natural gas -- possess the potential to adversely impact the general public. (Exs. 1, section 5.8; 86, p.1.) The evidence further indicates that three major types of hazards are associated with the use of these materials:

- an accidental release of ammonia gas;
- a release of chlorine and hydrogen gas from the accidental mixing of sodium hypochlorite and sulfuric acid; and
- fire and explosion from the use of natural gas.

Of these, the release of ammonia is the most likely accident to occur at the facility. (9/16/99 RT 240-41; Ex. 86, pp. 4-5.)

Ammonia Release. The project will use aqueous (rather than anhydrous) ammonia for the SCR system. (9/16/99 RT 242.) While the use of this type of ammonia is in itself a risk reduction measure, under certain circumstances an aqueous ammonia spill can nevertheless cause adverse public health impacts.

The evidence of record demonstrates that the risks associated with aqueous ammonia releases were modeled for several scenarios, using worst case meteorological assumptions. The scenarios included: a spill during transferring the aqueous ammonia from a delivery truck to the storage tank; and spills caused by tank rupture, including rupture as a result of being impacted by an aircraft. (Exs. 84; 86, pp. 5-8.) As part of the modeling assumptions, an exposure level of 2000 parts per million (ppm) was considered lethal; a level of 300 ppm immediately dangerous to life and health; and a level of 75 ppm as that which caused no serious adverse effects. (Ex. 86, pp. 6, 18-19.)

The expert testimony of record indicates that a delivery truck accident inside the facility is the event most likely to cause the public to be exposed to ammonia. (9/16/99 RT 241.) Such an event could result in a spill of approximately 8,000 gallons. Even were such a spill to occur, however, the evidence indicates that the ammonia would drain into a catchment basin and that there would be no off-site impacts to the public from a spill of this nature. (Ex. 86, p. 6.) Similarly, the evidence indicates that appreciable public health risks are negligible in the unlikely event of a catastrophic rupture of the 50,000 gallon double-wall ammonia storage tank, or as the result of an aircraft collision with the storage tank.(Exs. 1, 86, pp. 6-9.)

Although they agreed on the ultimate conclusions summarized above, Staff and CURE disagreed on the precise formulation of conditions ensuring that public

health risks would be reduced to a minimum. This disagreement centered on portions of Conditions of Certification **HAZ-1** and **HAZ-5** as proposed by Staff. (See generally 9/16/99 RT 251-73; see also Exs. 90, 92, 104 and CURE's 11/5/99 Opening Brief.)

We have reexamined the evidence and arguments of record and are persuaded that certain modifications to Conditions **HAZ-1** and **HAZ-5** are appropriate in order to clarify their intended purposes.

In **HAZ-1**, the concern is balancing the need for a limitation upon the hazardous materials which may be used at the facility with the need for a degree of flexibility by Staff in carrying out its post-certification activities. We believe the wording of this Condition may be appropriately modified to meet CURE's main concern (9/16/99 RT 269: 17-8) by explicitly prohibiting the use of anhydrous ammonia while still providing Staff the degree of flexibility contained in its original version. We have modified the provisions of **HAZ-1** to reflect this balance.

Regarding **HAZ-5**, we accept the modifications agreed to by Staff at the September 16 hearing ("to meet the following criteria:" and "liquid tight"; 9/16/99 RT 252:6-11.) We agree with CURE in clarifying that the sump referred to in subsection 3 of this Condition is indeed the underground sump as proposed by Applicant (9/16/99 RT 263) and have modified the Condition accordingly. We further believe that both Staff and CURE desire to ensure that concentrations of aqueous ammonia at the fence line do not exceed 75 ppm. Accordingly, we ~~suggest adding~~added the phrase "which is designed to ensure that the ammonia concentration~~s~~ does not exceed 75 ppm at the fence line in the event of a release by meeting" to ~~subsection 2 of the Condition as proposed by Staff~~ the first portion of **HAZ-5**. This modification incorporates both the Condition as proposed by Staff and suggestions by Applicant in its PMPD comments.

The Conditions of Certification below reflect these revisions.

Chlorine and Hydrogen Gas Release. Sodium hypochlorite, sulfuric acid, and sodium hydroxide will be used to treat cooling tower water for biological agents, as well as for water neutralization and pH level control. The mixture of sodium hypochlorite and sulfuric acid can result in the release of chlorine gas, which is extremely hazardous. Sulfuric acid and sodium hydroxide react with metals to form hydrogen gas, which is explosive in air.

Several measures will be used at the HDPP to guard against these risks. Sodium hypochlorite, sulfuric acid, and sodium hydroxide will each be stored in separate tanks, with each tank surrounded by separate diked areas sufficient to contain the entire volume of stored materials. The tanks will also be equipped with alarms to indicate tank level. Pumps will be used to transfer these materials through the water treatment system. The controls for each pump will be designed to automatically adjust the pump stroke and equipped with an on/off switch for manual tripping to override any interlocks. Unloading and transfer operations for each chemical will be supervised, and dry-disconnect transfer hoses and piping connections will be used. Neutralizers and/or absorbers will be kept on-site for use in the event of a spill of any substance. Prior to operation, the project owner must also develop a Safety Management Plan which will include employee training and safety procedures to ensure that the probability of accidentally mixing sodium hypochlorite and sulfuric acid will be minimized. (Exs. 1, section 5.8; 86, p. 9.)

Fire and Explosion from the use of Natural Gas. The natural gas fuel is very flammable and presents at least a remote risk of fire or explosion. It will not, however, be stored on-site. The risk of fire and/or explosion will further be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. Gas shut-off valves will be installed, along with automated combustion controls and burner management systems. Start-up procedures will require air purging of gas turbines and fire boxes to preclude the presence of an explosive mixture.

Detailed procedures to address potential hazards will be included in the Safety Management Plan which will be subjected to Staff review and approval prior to operation of the generating equipment. (Exs.1, section 5.8; 86, p. 10.)

Closure. Finally, the evidence indicates that the Compliance Plan's (*ante*) general conditions address the various closure scenarios that the project could face. In each instance, it is imperative that hazardous materials stored on-site be managed safely. To ensure that this is done, a specific Condition of Certification (**HAZ-6**) provides further guidance for the management of hazardous materials in the event of project closure. The evidence establishes that this combination of requirements is adequate to protect public health and safety in the event of project closure. (Ex. 86, p. 12.)

FINDINGS and CONCLUSIONS

Based upon the weight of the evidence of record concerning the topic of Hazardous Materials Management, we find and conclude as follows:

1. Sodium hypochlorite, sulfuric acid, sodium hydroxide, aqueous ammonia, and natural gas are hazardous materials which will be used at the project and which possess the potential to create public health and safety hazards.

2. The principal types of potential public health and safety hazards associated with the materials mentioned in Finding 1 above are the accidental release of ammonia gas, the release of chlorine and hydrogen gas, and fire and explosion from natural gas.

3. The mitigation measures incorporated in the Conditions of Certification below will ensure that risks to public health and safety from hazardous materials are reduced to an insignificant level.

4. Implementation of the Conditions of Certification below will ensure that the High Desert Power Project will comply with the laws, ordinances, regulations, and standards specified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the use of hazardous materials at the High Desert Power Project will not create or contribute to any significant adverse impacts to public health and safety.

CONDITIONS of CERTIFICATION

HAZ-1 The project owner shall not use or store anhydrous ammonia at the project site. The project owner shall not use any hazardous material in reportable quantities that is not listed in Attachment A, unless approved by the CPM.

Verification: The project owner shall provide in the Annual Compliance Report a list of hazardous materials used at the facility in reportable quantities.

HAZ-2 The project owner shall accept deliveries of aqueous ammonia no earlier than sunrise and no later than one hour prior to sunset.

Verification: The project owner shall provide in the Annual Compliance Report a list of all deliveries of aqueous ammonia, which is to include at a minimum: amount delivered; time of delivery; time of sunrise and time of sunset.

HAZ-3 The project owner shall submit both the Business Plan and the Risk Management Plan to the CPM for review and approval, and shall also submit these plans and/or procedures to the Victorville Fire Department for review.

Verification: At least sixty (60) days prior to the initial delivery of any hazardous materials in reportable quantities to the facility, the project owner shall submit the Business Plan and Risk Management Plan to the CPM for review and approval. At the same time, the project owner shall submit these plans to the Victorville Fire Department for review. The project owner shall also submit to the CPM the Victorville Fire Department's comments on these plans when available.

HAZ-4 The project owner shall provide a detailed Safety Management Plan (SMP) to the CPM.

Protocol: The Safety Management Plan shall include the following: 1) a description of how each element of the SMP applies to the

proposed facility; 2) an explicit chain of command (by job title on final organization chart) for each specific objective identified in the plan (for example, under "Accountability," list who will be responsible for the preparation of the specific statement of expectations, objectives and goals by senior management, daily shift logs and reports of abnormal conditions); 3) a description of how corporate management will ensure proper implementation of the SMP and ensure that production and safety are properly balanced; 4) methods that will be used to motivate employees to accomplish safety objectives; and 5) detailed procedures to address the hazards associated with human error during storage and transfer of hazardous materials.

Verification: At least sixty (60) days prior to the initial delivery of any hazardous materials in reportable quantities to the facility, the project owner shall provide a detailed Safety Management Plan as described in the Protocol section of this Condition of Certification to the CPM for review and comment.

HAZ-5 The project owner shall design the aqueous ammonia storage facility to ~~meet~~ ensure that the ammonia concentration does not exceed 75 ppm at the fence line in the event of a release by meeting the following criteria:

1. A vertically mounted double-walled storage tank of no more than 50,000 gallons in capacity, which is designed to UBC Seismic Zone 4 and API 650 standards.
2. A liquid-tight diked area around the tank capable of containing the entire 50,000 gallons of aqueous ammonia plus 10%. ~~, which is designed to ensure that ammonia concentrations do not exceed 75 ppm at the fence line.~~
3. A loading area such that any aqueous ammonia spilled there will drain into an underground sump capable of containing one entire truck delivery plus 10%.

Verification: At least sixty (60) days prior to the initial delivery of aqueous ammonia, the project owner shall provide designs for the aqueous ammonia storage facility as described in this Condition of Certification to the CPM for approval.

HAZ-6 Prior to commencement of commercial operation, the project owner shall submit to the CPM for review and approval hazardous materials management plans as described below. These plans may be incorporated into the Facility Closure Plan and the On-site Contingency Plans (which are required under General Conditions of the Compliance Plan portion of the Commission Decision).

Protocol: For the event of a planned closure or an unexpected permanent closure of the facility, the On-site Contingency Plan (and the Facility Closure Plan, should one be submitted) shall address how all hazardous materials will be removed from the site in accordance with all applicable laws, ordinances, regulations, and standards (LORS).

For the event of an unexpected temporary closure of the facility, the On-site Contingency Plan shall address how the site and the hazardous materials will be secured and maintained safely for the period of closure. For the event in which the temporary closure is declared permanent by the CPM, the On-site Contingency Plan shall address how all hazardous materials will be removed from the site in accordance with all applicable laws, ordinances, regulations and standards.

Verification: At least sixty (60) days (or other time agreed to by the CPM) prior to commencement of commercial operation, the project owner shall submit the above plans to the CPM for review and approval.

ATTACHMENT A

Hazardous Materials to be Used and Stored on-site at the High Desert Power Project

Chemical	Application	Storage Location	Storage Quantity (gallons)	
			Average	Maximum
Sulfuric Acid 93%[1]	pH control of cooling tower water and feed water	Water treatment plant area	5,000 300	10,000 500
		Cooling tower area	55	300
Sodium Hydroxide 50%[2]	pH control Regeneration and water neutralization	Water treatment area	500	500
Volatile oxygen scavenger 30%	Chemical removal of dissolved oxygen	Water treatment area	250	500
Neutralizing amine 20%	Chemical removal of dissolved carbon	Water treatment area	250	500
Phosphate 20%	Removal of dissolved hardness ions (scale deposit control)	Water treatment area	250	500
	Corrosion and scale inhibitor	Water treatment cooling tower area	250	500
Scale control (polymer)	Prevention of hardness forming scales	Water treatment cooling tower area	55	110
Polymeric dispersant	Deposit control and dispersion of suspended mater	Water treatment cooling tower area	250	1,000
Settling aid (polymer)	Suspended mater removal for water clarity	Water treatment cooling tower area	500	1,000
Biocide	Microbiological control to reduce biological growth	Water treatment cooling tower area	250	500
Primary coagulant (polymer)	Suspended mater removal for water clarity	Raw water treatment clarifier area	1,000	5,000
Coagulant aid (polymer)	Suspended mater removal for water clarity	Raw water treatment clarifier area	500	1,000
Settling aid (polymer)	Suspended mater removal for water clarity	Raw water treatment clarifier area	500	1,000
		Cooling tower area	500	1,000
Drainage aid (polymer)	Suspended mater removal for water clarity	Raw water treatment clarifier area	500	1,000
Sodium Hypochlorite	Primary biological control to reduce organic growth	Raw water treatment clarifier	500	1,000

Chemical	Application	Storage Location	Storage Quantity (gallons)	
			Average	Maximum
12% to 15% solution		area		
Soda ash	Water Softening	Cooling tower blowdown treatment clarifier	1200	2,000
Hydrated lime	Water Softening	Cooling tower blowdown treatment clarifier	1200	2,000
Sodium bisulfite	De chlorinator chlorine residual removal	Water treatment cooling tower area	100	300
Natural gas	Fuel for power plant	Piped into plant on as-needed basis	NA	NA
Aqueous ammonia (25% solution)[1]	Air pollution control system (emission control) to control nitrogen oxides	SCR system	75	50,000[3]
Hydraulic fluid	Equipment	Throughout plant	Initial fill	Initial fill
Insulating oil (heat transfer)	Electric equipment	--	Initial fill	Initial fill
Lubricating oil	Rotating equipment	Throughout plant	Initial fill (<5 gpd)	Initial fill
Battery acid	Batteries	--	Initial fill	Initial fill
Carbon dioxide	Fire protection, generator purging	--	8,000 lbs Initial fill	--
Hydrogen	Generator cooling	--	Initial fill	--

1 California acutely hazardous material

2 Material would be transported to the site using 5,000 to 6,000 gallon tanker trucks.

3 Material would be transported to the site using 8,000 gallon tanker trucks.

D. WORKER SAFETY and FIRE PROTECTION

Industrial workers use process equipment and hazardous materials on a daily basis. Accidents involving relatively small amounts of material can result in serious injuries. Moreover, workers are exposed to chemicals spills, hazardous waste, confined space entry egress problems, and moving equipment. This topical analysis assesses the completeness and adequacy of the measures proposed by the Applicant to comply with applicable worker health and safety requirements.

1. Summary and Discussion of the Evidence

The High Desert Power Project presents no unusual features for an industrial facility of its type (Ex. 82, p. 66), and compliance with applicable laws, ordinances, regulations, and standards will sufficiently ensure protection of worker safety. (*Id*., p. 60.) Therefore, the evidence presented under this topic focuses on the remaining relevant inquiry of whether the Applicant will establish adequate policies, procedures, training, and hazard recognition and control at the proposed facility to minimize the potential for injury to workers during construction and operation. (9/16/99 RT 54; Exs. 1 pp. 5.8-10 to 5.8-11; 82, 95, 102, 104.)

In order for Applicant to comply with requirements protecting worker safety it must, in part, provide (post-certification) a "Project Construction Safety and Health Program" and a "Project Operations Safety and Health Program" to the Commission for review and approval. Separate "Injury and Illness Prevention Programs" will also be prepared for the construction and the operational phases of the project. These broad plans will contain elements addressing more particularized aspects such as construction and operational injury and illness

prevention, fire protection and prevention, and the provision and use of personal protective equipment.

Air Base Road, El Evado Road, Phantom Street, and Nevada Avenue provide access for emergency response teams. The Victorville Fire Department has four stations which can respond to fires and other emergencies during project construction and operation; one is located at the Southern California Logistics Airport near the project site. All project employees will also be trained to respond to small fires in their beginning stages by using hand-held extinguishers, fire hoses of two-inch diameter or less, and fire monitors. (Ex. 82, pp. 60-61.) The evidence also establishes that the project owner/operator is responsible for maintaining an operational fire protection system during closure activities *(Id*., p. 62.)

The uncontroverted evidence of record establishes that the Conditions of Certification set forth below will require the adoption and implementation of worker safety measures adequate to meet applicable requirements .

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record regarding the topic of "Worker Safety and Fire Protection," we find and conclude as follows:

1. Compliance with existing laws, ordinances, regulations, and standards will adequately ensure protection of worker health and safety during construction and operation of the High Desert Power Project.

2. In order to comply with applicable requirements, the Applicant must prepare and submit safety, health, and fire programs for the project's construction and operation phases.

3. The Conditions of Certification below require the submission and review of safety, fire, and health programs for the construction and operation phases.

4. Assuming compliance with the Conditions of Certification in contained in this Decision, the project will comply with the laws, ordinances, regulations, and standards intended to protect worker health and safety and identified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the High Desert Power Project will adequately address concerns pertaining to worker safety and health during its construction and operation phases.

CONDITIONS of CERTIFICATION

SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program as follows:

- Construction Injury and Illness Prevention Program
- Construction Fire Protection and Prevention Plan
- Personal Protective Equipment Program

Protocol: The Construction Injury and Illness Prevention Plan and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders. The Construction Fire Protection and Prevention Plan shall be submitted to the Victorville Fire Department for review and acceptance.

Verification: At least thirty (30) days prior to the start of construction or a date agreed to by the CPM, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program, incorporating Cal-OSHA Consultation Service's comments, and a letter from the City of Victorville Fire Department stating that it has reviewed and accepted the Construction Fire Protection and Prevention Plan.

SAFETY- 2 The project owner shall submit to the CPM a copy of the Project Operation Safety and Health Program containing the following:

- Operation Injury and Illness Prevention Plan
- Emergency Action Plan
- Operation Fire Protection Plan

- Personal Protective Equipment

Protocol: The Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders.

The Operation Fire Protection Plan and the Emergency Action Plan shall be submitted to the City of Victorville Fire Department for review and acceptance.

Verification: At least thirty (30) days prior to the start of operation, the project owner shall submit to the CPM a copy of the final version of the Project Operation Safety & Health Program. It shall incorporate CAL-OSHA Consultation Service's comments and a letter from the Victorville Fire Department stating that it has reviewed and accepted the specified elements of the Operation Safety and Health Plan.

The project owner shall notify the CPM that the Project Operation Safety and Health Program which includes the Injury and Illness Prevention Plan, the Fire Protection Plan, the Emergency Action Plan, and the Personal Protective Equipment requirements, together with all records and files on accidents and incidents, are present on-site and available for inspection.

SAFETY-3 The project owner shall design and install all exterior lighting to meet the requirements contained in the Visual Resources Conditions of Certification contained in this Decision, and in accordance with the American National Standards Practice for Industrial Lighting, American National Standards Institute/ Illuminating Engineering Society (ANSI/IES-RP-7).

Verification: Within sixty (60) days after construction is completed, the project owner shall submit a statement to the CPM that the illuminances contained in ANSI/IES RP-7 were used as a basis for the design and installation of the exterior lighting.

VII. ENVIRONMENTAL ASSESSMENT

As part of its statutory mandate, the Commission must analyze a project's potential effects upon various elements of the human and natural environments. Topics pertinent to these concerns are addressed below.

A. BIOLOGICAL RESOURCES

Our examination of biological resources focuses upon impacts to state and federally listed species, species of special concern, wetlands, and other areas of critical biological interest in the project vicinity. Here we summarize the potential biological resources impacts due to the project and its related facilities, and assess the adequacy of mitigation measures necessary to reduce any identified impact to less than a significant level. The detailed evidence of record submitted in this proceeding was developed in consultation and co-operation with CDFG, BLM, and USFWS.

1. Summary and Discussion of the Evidence

The western Mojave Desert, a portion of the 25-million acre California Desert Conservation Area, receives low annual average precipitation and contains soils of limited water holding capacity. As a result, vegetation communities predominantly consist of shrubby perennials and small annuals. Plants such as creosote bush and Joshua trees grow in this area and, along with riparian areas, can provide suitable habitat for a number of wildlife species. Because of the extreme climatic conditions, unmitigated alteration of the desert habitat can cause significant and lasting effects upon sensitive plant and animal species. (Ex. 87, pp. 3-4.)

The 25-acre power plant site, situated on previously disturbed land on the former George Air Force Base and once used as a spoils area for storing miscellaneous refuse and debris, does not raise any significant biological resource issues. (Ex. 87, pp. 4, 6.) The associated linear facilities (i.e. the transmission, water, and natural gas lines),

however, traverse areas that provide useful habitat for sensitive species. Construction and other ground disturbing activities in these areas could destroy needed habitat and/or nesting places, crush burrows, cause mortalities to protected species, or diminish available food supply. Any decrease in riparian flows would also likely result in a decrease in available habitat and significantly affect protected species. (Exs. 87, pp. 6-7; 93, p. 2; 10/7/99 RT 149.)

The evidence establishes that Applicant conducted literature review and field surveys of the plant site and the associated linear facilities in order to assess the project's potential impacts and design appropriate mitigation. (10/7/99 RT 76, 83-6, 89.) Commission staff, in conjunction with CDFG and the federal agencies, also examined the power plant site and associated linear facilities, as well as the riparian habitat along the Mojave River. (10/7/99 RT 129.) This evidence indicates that several state and federally-listed species, and many California species of concern, range within the general project area. The evidence further indicates that project construction and operation could negatively impact the desert tortoise, Mohave ground squirrel, Mohave river vole, southwestern pond turtle, arroyo toad, arroyo chub, California red-legged frog, two striped garter snake, golden eagle, loggerhead shrike, summer tanager, burrowing owl, Cooper's hawk, bald eagle, western yellow-billed cuckoo, yellow warbler, willow flycatcher, yellow-breasted chat, and the least Bell's vireo. (Exs. 87, pp. 5-6; 93, p. 1.)

The project (primarily the linear facilities, especially the 32-mile long natural gas pipeline) will affect desert habitat of varying quality and will create long and short-term habitat losses. In this regard, the evidence indicates that potential impacts to the desert tortoise and the Mohave ground squirrel are of particular concern. Land disturbance for the power plant and its linear facilities, excluding the 32-mile natural gas pipeline, will total 167.8 acres. The 32-mile gas pipeline will disturb an additional 413.4 acres of habitat. (Ex. 87, pp. 8-9.)

The evidence of record establishes that Applicant will mitigate these habitat impacts by purchasing compensatory habitat at compensation ratios ranging from 1:1 for the

project and some appurtenant facilities, to 1:1 to 4:1 for the 32-mile long pipeline. Overall habitat compensation costs, including habitat acquisition and closing costs, initial management activities, and establishing an endowment for long-term stewardship, could ~~be as much as $1,722,051~~ exceed approximately $1,600,000.[22] (Exs. 87, p. 11; 93, p. 1.) Applicant will also contribute $50,000 for funding Mohave ground squirrel studies to aid in determining suitable habitat for the long-term viability of that species. (*Id*.) ~~As a result, the evidence establishes that impacts associated with the loss and degradation of threatened species habitat caused by the project and its linear facilities (including the 32-mile gas pipeline) can be fully mitigated. (Exs. 93, p. 2; 103, p. 1.)~~

The actual amount of compensation has been the subject of a degree of confusion. (See Staff PMPD comments, p. 9; Applicant PMPD comments, p. 4; 1/27/00 RT 21-22.) At the February 18, 2000 hearing, Staff's witness clarified that those involved had differing interpretations of amounts transferable to federal and to state agencies. Consequently, Staff recomputed the monetary habitat compensation amounts for the project, both with and without the 32-mile natural gas pipeline. (2/28/00 RT 36-38; Ex. 146B.) Applicant agrees with these revised figures (2/28/00 RT 35), and CDFG has indicated that it also supports the revisions and will incorporate them into its California Incidental Take Permit. (CDFG's February 16, 2000 comments, pp. 4-5.)

The mechanism for determining the specific compensatory acreage and the precise amount of compensation funds which will be required is set forth in Conditions of Certification **BIO-7** and **8,** below. (See also 10/7/99 RT 105-08,111, 120-25,136-37, 162; Exs. 101, 103.) As a result, the evidence establishes that impacts associated with the loss and degradation of threatened species habitat caused by the project and its linear facilities (including the 32-mile gas pipeline) can be fully mitigated. (Exs. 93, p. 2; 103, p. 1.)

[22] This amount represents mitigation compensation to both State and Federal entities. Condition **BIO-7**, *infra*, reflects a total amount of approximately $1,400,000 for mitigation of impacts within state jurisdiction, and does not include any amount for obtaining a right-of-way across Federal lands. (See January 13, 2000 Staff PMPD comments, p. 9.)

Impacts to riparian habitat along the Mojave River would be caused by using water available in the area. These can be satisfactorily mitigated by banking water and ensuring that the project does not cause any reductions in river bank discharges or base flows. (Exs. 87, p. 11; 93, p. 2.) [The sufficiency of the project's water supply plan is discussed in the "Soil and Water Resources" portion of this Decision, *infra*.]

The potential biological resources impacts of the HDPP are also being scrutinized by federal entities such as the Corps of Engineers, BLM, and USFWS,[23] as well as by CDFG. Applicant has applied for various federal permits, and the impacts of the project ~~will~~ are also ~~be~~ analyzed in a federal Draft Environmental Impact Statement (DEIS) ~~which~~ released in late December 1999~~is currently being prepared~~. (10/7/99 RT 78, 96-101; see also Exs. 10, 17, 18, 29, 41, 46, 53, 68.) Additionally, CDFG will determine whether to issue an "incidental take permit," a "streambed alteration agreement" for the project's water line, transmission line, and gas line crossings of various desert washes, and a second "streambed alteration agreement" with Southwest Gas for the 32-mile long natural gas pipeline. (10/7/99 RT 160-61; Exs. 42; 59; 93, pp. 2-3; see also Condition **BIO-5**.) The witnesses each confirmed that all federal and state agencies were working in a cooperative and collaborative manner, and that there would be no inconsistencies between conditions imposed in this Decision and those developed by federal authorities. (10/7/99 RT 100-03; see also 10/7/99 RT 138-39, 150; 2/18/00 RT 39.)

The testimony of record establishes that, with the measures contained in the Biological Resources Mitigation Implementation and Monitoring Plan and reflected in the Conditions of Certification below, the HDPP and its associated linear facilities will create no significant adverse impacts to affected biological resources. (10/7/99 RT 93-94, 132.) The evidence further indicates that the project will not contribute to cumulative significant adverse impacts upon biological resources, assuming implementation of the required mitigation. (Ex. 87, p. 9.) Future appropriate closure activities may include the

[23] We note that the USEPA has expressed concerns regarding the 32-mile natural gas pipeline. (February 23, 2000 Comments on DEIS, p. 3.)

removal of project structures and revegetation of the area; these matters will be addressed in the closure plan required in the "Compliance" portion of this Decision.

FINDINGS and CONCLUSIONS

Based upon the weight of the evidence of record, we find and conclude as follows:

1. Sensitive plants and animals exist in the general project area.

2. Construction and operation of the High Desert Power Project, if not adequately mitigated, can adversely affect sensitive biological resources in the project area.

3. The mitigation measures contained in the Conditions of Certification set forth below were developed in cooperation with the California Department of Fish and Game, and have been coordinated with the Bureau of Land Management and the United States Fish & Wildlife Service.

4. The evidence establishes that the Conditions of Certification are adequate to assure that the High Desert Power Project will cause no significant unmitigated adverse impacts to biological resources in the project area.

5. The mitigation measures contained in the Conditions of Certification below, in conjunction with the Conditions of Certification contained in the "Soil and Water Resources" portion of this Decision, are sufficient to ensure that the High Desert Power Project does not create adverse impacts to riparian habitat along the Mojave River.

6. The Conditions of Certification, if properly implemented, ensure that the High Desert Power Project will comply with the applicable laws, ordinances, regulations, and standards set forth in the pertinent portion of Appendix A of this Decision.

We therefore conclude that construction and operation of the High Desert Power Project will not create any significant direct, indirect, or cumulative adverse impacts to biological resources.

CONDITIONS of CERTIFICATION

BIO-1 Construction-site and/or ancillary facilities preparation (described as any ground disturbing activity other than allowed geotechnical work) shall not begin until a CPM approved designated biologist is available to be on-site.

Protocol: The designated biologist must meet the following minimum qualifications:

1. a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. three years of experience in field biology or current certification of a nationally recognized biological society, such as the Ecological Society of America or The Wildlife Society;
3. one year of field experience with resources found in or near the project area; and
4. ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resource tasks that must be addressed during project construction and operation.

If the CPM determines the proposed designated biologist to be unacceptable, the project owner shall submit another individual's name and qualifications for consideration.

If the approved designated biologist needs to be replaced, the project owner shall obtain approval of a new designated biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement, within ten (10) working days after termination or release of the preceding designated biologist.

No disturbance will be allowed in any designated sensitive area(s) until the CPM approves a new designated biologist and that designated biologist is on-site.

Verification: At least ninety (90) days prior to the start of any site disturbance, the project owner shall submit to the CPM and to the California Department of Fish and Game for approval, the name, qualifications, address, and telephone number of the individual selected by the project owner as the designated biologist. The CPM will notify the project owner of approval or disapproval of the designated biologist. Oral approval may be given by the CPM, and will be followed up in writing no later than fifteen (15) days after oral approval is granted.

BIO-2 The CPM approved designated biologist shall perform the following duties:

- advise the project owner's supervising construction or operations engineer on the implementation of the biological resources Conditions of Certification;
- supervise or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as wetlands and special status species; and
- notify the project owner and the CPM of any non-compliance with any condition.

Verification: The designated biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted with the Monthly Compliance Reports to the CPM and to the California Department of Fish and Game.

BIO-3 The project owner's supervising construction and operating engineer shall comply with the recommendation of the designated biologist to ensure conformance with the biological resources Conditions of Certification.

Protocol: The project owner's supervising construction and operating engineer shall halt, if needed, all construction activities in areas specifically identified by the designated biologist as sensitive to assure that potential significant biological resource impacts are avoided.

The designated biologist shall:

1. tell the project owner and the supervising construction and operating engineer when to resume construction; and
2. advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two (2) working days of a designated biologist's notification of non-compliance with a Biological Resources condition or a halt of construction, the project owner shall notify the CPM and the California Department of Fish and Game by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a condition.

For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM in consultation with the California Department of Fish and Game within five (5) working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

BIO-4 The project owner shall develop and implement a program approved by the CPM and the California Department of Fish and Game in which each of its own employees, as well as employees of contractors and subcontractors who work on the project site or related facilities (including any access roads, storage areas, transmission lines, water and gas lines) during construction and operation, are informed about biological resource sensitivities associated with the project.

Protocol: The Worker Environmental Awareness Program:

1. shall be administered by the designated biologist and consist of an on-site or classroom presentation in which supporting written material is made available to all participants;
2. must discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. the reasons for protecting these resources;
4. the meaning of various temporary and permanent habitat protection measures; and
5. who to contact if there are further comments and questions about the material discussed in the program.

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

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

The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM and the California Department of Fish and Game for a period of at least six (6) months after the start of commercial operation. Signed statements for active operational personnel shall be kept on file by the project owner for the duration of their employment and for six (6) months after their termination.

Verification: At least thirty (30) days prior to the start of any site disturbance, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the designated biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

BIO-5 The project owner shall acquire from the California Department of Fish and Game and implement the terms of necessary Streambed/Lake Alteration Agreements (§1601 and §1603) for project related construction impacts to drainages and any necessary “take” permit (§2081) for endangered species.

Verification: At least ninety (90) days prior to the start of any site disturbance, the project owner shall provide the CPM with a copy of the California Department of Fish and Game Streambed Alternation Agreement for this project.

BIO-6 The project owner shall submit to the CPM and to the California Department of Fish and Game for review and approval a copy of the Biological Resources Mitigation Implementation and Monitoring Plan for this project.

The Biological Resources Mitigation Implementation and Monitoring Plan shall identify:

- all sensitive biological resources potentially impacted by project construction and operation;
- all mitigation, monitoring, and compliance conditions included in the Commission's Final Decision;
- all mitigation measures specified in the Habitat Conservation Plan developed for issuance of an "Incidental Take Permit" from the U.S. Fish and Wildlife Service;
- all conditions specified in the CDFG Streambed/Lake Alteration Agreement and endangered species "take" permit;
- required mitigation measures for each sensitive biological resource;
- required compensation for any loss of sensitive biological resources;
- all locations, on a map of suitable scale, requiring temporary protection/signs during construction;
- aerial photographs (direct overhead) of all areas to be disturbed during project construction activities (at a scale of 1"=100') - one set prior to site disturbance and one set subsequent to completion of mitigation measures if a one-time mitigation level is required, or periodic monitoring for the life of the project if mitigation for disturbance during operation is required. Include planned timing of aerial photography and a description of why times were chosen;
- monitoring duration for each type of monitoring and a description of monitoring methodologies and frequency;
- performance standards to be used to help decide if/when proposed mitigation is or is not successful;
- all remedial measures to be implemented if performance standards are not met; and
- a process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: At least sixty (60) days prior to any site disturbance, the project owner shall provide the CPM and the California Department of Fish and Game with the final version of the Biological Resources Mitigation Implementation and Monitoring Plan for this project, and the CPM will determine the plan's acceptability within fifteen (15) days of receipt of the final plan. The project owner shall notify the CPM and the California Department of Fish and Game five (5) working days before implementing any modifications to the Biological Resources Mitigation Implementation and Monitoring Plan.

Within thirty (30) days after completion of construction, the project owner shall provide to the CPM and the California Department of Fish and Game for review and approval, a written report identifying which items of the Biological Resources Mitigation Implementation and Monitoring Plan have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which condition items are still outstanding.

BIO-7 ~~Prior to the start of site disturbance of the project or any related facilities, the project owner shall acquire, protect, and transfer 1,242.8 acres of land that the CPM, in consultation with the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS), approves as suitable habitat for the desert tortoise and Mohave ground squirrel. Fee title to the land shall be transferred to CDFG or, with the approval of the CPM and CDFG in consultation with the USFWS, to another public agency or a private non-profit conservation organization. If fee title is not transferred to CDFG, then the project owner shall ensure that a conservation easement approved by CDFG is recorded in favor of CDFG prior to transfer of fee title. Prior to the transfer of fee title, the project owner shall provide $367,256.00 ($49,586 if the pipeline to Kramer Junction is not built) for establishment of a non-wasting endowment for the benefit of the fee title grantee to provide for the long-term management of the habitat lands. The project owner shall obtain approval of the CPM and CDFG of terms governing use and maintenance of the endowment fund.~~

~~The project owner may proceed with site disturbance for the project and related facilities prior to completing the requirements in this condition if the project owner establishes a trust account or irrevocable letter of credit approved by the CPM and CDFG, or some other form of security approved by the CPM and CDFG, in the amount of $ 1,553,819.00 ($209,793 if the pipeline to Kramer Junction is not built). The security shall be provided to CDFG prior to commencement of any site disturbance and shall be maintained until all requirements of this condition are approved by the CPM and CDFG as complete.~~

~~Any remaining security after satisfaction of this condition, as determined by the CPM in consultation with CDFG, shall be returned to the provider of the security. The amount of the security is calculated as follows:~~

~~1.Estimated cost of acquiring and transferring 1,242.8 acres of habitat: $ 873,485.00 (167.8 acres and $117,936 if the pipeline to Kramer Junction is not built).~~

~~2.Estimated cost of initial protection of the land: $ 313,078.00 ($42,271 if the pipeline to Kramer Junction is not built).~~

~~3.~~1. ~~Estimated cost of endowment for long-term management: $ 367,256.00 ($49,586 if the pipeline to Kramer Junction is not built).~~

BIO-7 Prior to the start of rough grading of the project or any related facilities, the project owner shall acquire, protect, and transfer 924.7 acres (167.8 acres if the pipeline to Kramer Junction is not built) of land that the CPM, in consultation with the California Department of Fish and Game (CDFG) and the U. S. Fish and Wildlife Service (USFWS), approves as suitable habitat of the desert tortoise and Mohave ground squirrel. Fee title to the land shall be transferred to CDFG or, with the approval of the CPM and CDFG in consultation with the USFWS, to another public agency or a private non-profit conservation organization. If fee title is not transferred to CDFG, then the project owner shall ensure that a conservation easement approved by CDFG is recorded in favor of CDFG prior to transfer of fee title. Prior to transfer of fee title, the project owner shall provide $482,640.00 ($353,100.00 if the pipeline to Kramer Junction is not built) for establishment of a non-wasting endowment for the benefit of the fee title grantee to provide for the long-term management of the habitat lands. The project owner shall obtain approval of the CPM and CDFG of terms governing use and maintenance of the endowment fund.

The project owner may proceed with site disturbance for the project and related facilities prior to completing the requirements in this Condition if the project owner establishes a trust account or irrevocable letter of credit approved by the CPM and CDFG, in the amount of $1,403,234.00 ($551,476.00 if the pipeline to Kramer Junction is not built). The security shall be provided to CDFG prior to commencement of any site disturbance and shall be maintained until all requirements of this Condition are approved by the CPM and CDFG as complete.

Any remaining security after satisfaction of this condition, as determined by the CPM in consultation with CDFG, shall be returned to the provider of the security. The amount of the security is calculated as follows:

1. Estimated cost of acquring and transferring 924.7 acres of habitat: $873,393.73 (167.8 acres and $162,361.87 if the pipeline to Kramer Junction is not built).

2. Estimated cost of initial protection of the land: $52,200.08 ($36,014.45 if the pipeline to Kramer Junction is not built).

3. Estimated cost of endowment for long-term management; $482,640.00($353,100.00 if the pipeline to Kramer Junction is not built).

If security is provided to allow the commencement of site disturbance prior to transfer of habitat lands, the project owner must complete the required acquisition, protection, and transfer of land no more than twelve (12) months after the start of site disturbance and the endowment must be established for the benefit of the fee title grantee prior to transfer of the land. CDFG shall be entitled to draw upon the security to carry out requirements not completed by the project owner within twelve (12) months from the start of site disturbance.

Verification: At least thirty (30) days prior to the start of surface disturbance on the project site or any related facilities, the project owner shall provide the CPM with a copy of the draft or form of letter of credit established pursuant to this Condition of Certification. The project owner shall provide the CPM and the CDFG a copy of the final letter of credit not fewer than five (5) business days prior to the start of surface disturbance, or at a later mutually agreed upon time. Upon completion of the acquisition and transfer of the habitat lands to the approved recipient(s), the project owner shall provide the CPM with copies of all title transfer records or records verifying other approved transactions.

BIO-8 Prior to the start of surface disturbance at the project site or any related facilities, the project owner shall provide the Desert Tortoise Preserve Committee $50,000.00 to support Mohave ground squirrel research that will aid in determining habitat characteristics indicative of suitability within various parts of its range. Once transferred, the money shall be nonrefundable.

Verification: At least ninety (90) days prior to the start of surface disturbance at the project or any related facilities, the project owner shall provide the CPM with a copy of receipts for all funds provided the Desert Tortoise Preserve Committee.

BIO-9 In the event that the project owner proceeds with the 32-mile long natural gas pipeline that interconnects the High Desert Power Project to an existing gas line near Kramer Junction, and prior to the start of surface disturbance at the construction site, the project owner shall enter into a legally binding agreement with Southwest Gas Corporation whereby Southwest Gas Corporation and any successors or assignees agree to comply with all Conditions of Certification of the project that pertain to the pipeline. The agreement shall require that noncompliance with Conditions of Certification or other permit requirements pertaining to biological resources shall be reported by the designated biologist verbally to the CPM within three (3) days after occurrence, or within three (3) days of the time the party responsible for making such report knew or should have known of the occurrence, with a follow-up notification in writing no more than one (1) week after the verbal report. Included in the agreement shall be terms that allow the CPM right-of-way access to inspect and assess the status of required mitigation measures. The initial agreement, and any subsequent agreement, may be entered into with a party other than Southwest Gas Corporation subject to the approval of the CPM. The initial agreement, and any subsequent agreement, may be terminated at any time, provided that the terminated agreement is replaced by another agreement which complies with the requirements set forth above and is effective immediately upon termination of the prior agreement. An agreement that complies with the requirements set forth above shall be in place at all times following commencement of the construction of the pipeline until the High Desert

Power Project is permanently retired from producing electricity. The project owner is ultimately responsible for implementation of all mitigation measures associated with the 32-mile gas pipeline.

Verification: At least sixty (60) days prior to surface disturbance at the construction site of the gas pipeline, the project owner will provide a copy of the initial agreement to the CPM for review and approval in consultation with appropriate state, local, and federal agencies. Any proposal to enter into a subsequent agreement will be submitted to the CPM for review and approval in consultation with appropriate state, local, and federal agencies.

B. CULTURAL RESOURCES

This section discusses cultural resources, defined as including the structural and cultural evidence of the history of human development of life on earth. These resources assist in the understanding of our culture, our history, and our heritage. The spatial relationships between an undisturbed resource site and the surface resources and features, as well as the locational context of the resource materials within the site and beneath the surface, provide information that can be used to determine the sequence of human occupation and use of an area.

Cultural resources are typically placed in one of three categories: prehistoric archaeologic resources; historic archaeologic resources; and ethnographic resources. The first category relates to the prehistoric human occupation and use of an area; resources typically include sites, deposits, structures, artifacts, rock art, trails, and other traces of human behavior. Historic archaeologic resources are materials usually associated with Euro-American exploration and settlement of an area, as well as the beginning of a written historical record; they may include deposits, sites, structures, traveled ways, artifacts, documents, or other indicia of human activity. Ethnographic resources such as traditional collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures are those materials important to the heritage of a particular ethnic or cultural group such as Native Americans or African, European, or Asian immigrants.

1. Summary and Discussion of the Evidence

The project region is located near the southern edge of the Mojave Desert, in the northwestern portion of San Bernardino County. Numerous archeological sites found throughout the project area provide evidence of prehistoric occupation and use by the native peoples of California. These early occupants had well-established patterns of seasonal hunting and resource collection throughout the

Mojave. The early peoples also had well-established trade routes that extended from the ocean coastal areas, northeastward across the Mojave Desert toward the tribes along the Colorado River and in northern Mexico. They also traveled northward and traded with the tribes along the eastern slopes of the Sierra.

Many of these travel routes were also used by Euro-American explorers and settlers. The location of the City of Victorville at the crest of a pass at the edge of the desert, plus water available in the Mojave River, made Victorville and the surrounding cities of Adelanto, Apple Valley, and Hesperia a focal point for all major transportation routes between the coast and other western states. The numerous archaeologic sites found throughout the project area provide evidence of the succession of historic occupation and development. (Exs. 1, section 5.10-7 to 5.10-8; 85, pp. 265, 290-91.)

Applicant conducted a record search and archival review of the California Historic Resource Information System, San Bernardino County Museum office. It identified all known historic and prehistoric resources in the project area; it further contacted the Native American Heritage Commission for assistance in identifying Native American resources in the project vicinity. Additionally, Applicant conducted intensive field surveys (in April 1997 and in June 1998) of all project components, including the 32-mile natural gas pipeline corridor, and consulted with federal authorities on lands under their jurisdiction. Applicant also conducted testing of two archeological sites to determine eligibility for listing on the National Register of Historic Places. (9/16/99 RT 200-201; see also Exs. 39,48, 62, 64, 75, 78, 79, and 9/16/99 RT 205-06.)

Despite these efforts, no evidence of cultural resources was found within one-half mile of the power plant site. (Ex. 85, pp. 265, 270.) Numerous resources were, however, identified within the respective survey corridors for the project's linear facilities including the electric transmission line, the water and sewage pipelines, and the natural gas pipelines. (Ex. 85, pp. 265-273, 281,291.) The density of

sites recorded in the project vicinity indicates a high potential for encountering additional historic and prehistoric resources in the immediate project area. (Ex. 85, p. 278.)

The evidence contains an evaluation of the project's potential effect upon "historic resources", in accordance with recently adopted CEQA criteria. (Ex. 85, pp. 275-76; see also "Cultural Resources" portion of Appendix A, *infra.)* Staff's analysis concludes that all of the cultural resource sites potentially affected by the project meet one or more of the criteria for being characterized as an historic resource. (Ex. 85, p. 276.) Staff's testimony also explains the basis for its conclusion that mitigation is appropriate for certain archeological resources which, while not "unique", nevertheless qualify as historic resources. (*Id*.)

The evidence establishes that the preferred mitigation for preventing impacts to cultural resources is avoidance of the resource where possible. Clearance and grading associated with preparing the power plant site, excavating, and foundation development is not expected to harm any known cultural resource materials. The potential for discovering new resources and creating negative impacts depends, however, on the extent of surface area disturbance and the depth of excavation into previously undisturbed ground. The presence of known archeological sites within the right-of-way for the 32-mile natural gas pipeline also generates the potential for on-going impacts. (*Id*.)

Because of the uncertain nature of these impacts, mitigation measures contained in the Conditions of Certification below address impacts for both known and unknown cultural resources. These Conditions, which reflect requirements in San Bernardino County's and in the City of Victorville's respective General Plans, were developed in concert with the USFWS and the BLM.[24]

[24] USFWS has determined that the entire HDPP project constitutes an "undertaking" for federal permitting purposes. Although BLM has jurisdiction over lands crossed by approximately eight miles of the 32-mile natural gas pipeline, it will nevertheless assess archaeologic (and paleontological) resources for the entire project. (Ex. 85, pp. 288-89; 9/16/99 RT 211.)

The testimony of record indicates that the Commission and the federal reviewing agencies are employing an informal protocol to ensure consistency between the two layers of permitting requirements. (9/16/99 RT 203-05, 210-13.)

From a cumulative impacts perspective, the disturbance of increasing amounts of land in the project's vicinity can accelerate the potential for cultural resource impacts, thus necessitating measures specified in the Conditions below.[25] Finally, the evidence indicates that impacts to cultural resources from closure activities will be satisfactorily addressed pursuant to the provisions of the Compliance Plan, *ante*. (9/16/99 RT 213-14.)

FINDINGS and CONCLUSIONS

Based upon the uncontested evidence of record, we find and conclude as follows:

1. Cultural resources exist in the project area.
2. Construction activities associated with the High Desert Power Project and its related facilities present the greatest potential for adverse impacts to cultural resources.
3. Adverse impacts may be satisfactorily avoided or lessened by the implementation of appropriate mitigation measures.
4. The Conditions of Certification listed below were developed in consultation and coordination with the appropriate federal reviewing agencies.
5. The Conditions of Certification listed below contain measures that will ensure that construction and operation of the High Desert Power Project and its related facilities will not create significant direct, indirect, or cumulative adverse impacts to cultural resources.

[25] Construction of the 32-mile natural gas pipeline will add to existing impacts at certain sites already determined to be eligible for listing in the National Register. (Ex. 85, pp.281-82.) The evidence does not suggest, however, that these impacts be considered "significant."

6. Implementation of the Conditions of Certification below will assure that the High Desert Power Project complies with all applicable laws, ordinances, regulations, and standards pertaining to cultural resources set forth in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the High Desert Power Project will not create any significant direct, indirect, or cumulative adverse impacts to cultural resources.

CONDITIONS of CERTIFICATION

CUL-1 Project construction (defined as any construction-related vegetation clearance, ground disturbance and preparation, or site excavation activities) shall not begin until the designated cultural resources specialist approved by the California Energy Commission (Commission) Compliance Project Manager (CPM), is available to be on-site.

The designated cultural resources specialist shall be responsible for implementing all the Conditions of Certification and for using qualified personnel to assist him or her in project-related activities. The designated specialist, with professional assistance from team members as needed, shall conduct final pre-construction surveys, flag areas to be avoided, and identify areas where shovel testing, test pits, or backhoe trenching needs to be done; prepare the Cultural Resources Monitoring and Mitigation Plan; prepare and present the pre-construction employee awareness training program; keep a daily log of monitoring and mitigation activities and prepare a summary of these activities to be included in the weekly construction status report filed with the CPM; direct and implement monitoring and mitigation procedures, as needed in sensitive resource areas, during any construction activities associated with all aspects of the project; conduct the mapping, recording, sampling, and collection of sensitive and diagnostic cultural resources; conduct the preparation and analyses of all data and cultural materials recovered during project monitoring and mitigation; identify and inventory recovered cultural resources; prepare recovered cultural resources for delivery and curation to a qualified public repository; and prepare the preliminary and final cultural resources reports to be filed with the receiving curation repository, appropriate regional information center(s), SHPO, and the Commission.

After CPM approval of the Cultural Resources Monitoring and Mitigation Plan, described below in Condition **CUL-4**, the designated

cultural resource specialist and team shall be available to implement the mitigation plan prior to, and throughout, construction of the project.

Protocol: 1) The resume shall include all information needed to demonstrate that the designated cultural resource specialist meets the minimum qualifications specified in the US Secretary of Interior Guidelines, as published by the State Office of Historic Preservation. These minimum qualifications shall include at least the following: a graduate degree in anthropology, archaeology, California history, cultural resource management, or other comparable fields; at least three years of archaeological resource mitigation and field experience in California; and at least one (1) year's experience in each of the following areas: leading archaeological resource field surveys; leading site and artifact mapping, recording, and recovery operations; marshalling and use of equipment necessary for cultural resource recovery and testing; preparing recovered materials for analysis and identification; recognizing the need for appropriate sampling and/or testing in the field and in the lab; directing the analyses of mapped and recovered artifacts; completing the identification and inventory of recovered cultural resource materials; and the preparation of appropriate reports to be filed with the receiving curation repository, the SHPO, all appropriate regional archaeological information center(s), and the CPM.

2) The resume for the designated cultural resource specialist shall include a list of specific projects on which the specialist has previously worked; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

3) If additional personnel will be assisting the designated cultural resource specialist in project-related field surveys, monitoring, data and artifact recovery, mapping, mitigation, cultural resource analysis, or report preparation, the project owner shall also provide names, addresses, and resumes for these cultural resource team members.

4) If the CPM determines that the qualifications of the proposed cultural resource specialist are not in concert with the above requirements, the project owner shall submit another individual's name and qualifications for consideration.

5) If the previously approved, designated cultural resources specialist is replaced prior to completion of project mitigation, the project owner shall obtain CPM approval of the new designated cultural resource specialist by submitting the name and qualifications of the proposed replacement to the CPM at least ten (10) days prior to the termination

or release of the preceding designated cultural resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

Verification: At least one hundred twenty (120) days prior to the start of construction on the project, the project owner shall submit the names and resumes for its designated cultural resource specialist and the specialist's team members to the CPM for review and written approval. The CPM shall provide approval or disapproval of the proposed cultural resource specialist. The submittal from the project owner shall also include an estimated schedule and the approximate number of hours needed to implement the monitoring and mitigation plan.

Thirty (30) days prior to start of construction, the project owner shall confirm in writing to the CPM that the previously approved designated cultural resources specialist and the team of assistants are prepared to implement the monitoring and mitigation measures for cultural resources, as described in the CPM-approved Cultural Resources Monitoring and Mitigation Plan, prepared per Condition **CUL-4**, below.

At least ten (10) days prior to the termination or release of a designated cultural resource specialist, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated cultural resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

CUL-2 Prior to the start of project construction, the project owner shall survey and stake all areas expected to be affected by construction and operation of the proposed project and its associated linear facilities. The surveys and staking shall reflect the final project design and site layout and the final mile-posts, centerlines, and right-of-way boundaries for the linear facilities.

Verification: At least one hundred fifteen (115) days prior to the start of construction, the project owner shall stake and flag the boundaries of all areas expected to be affected by construction and operation of the proposed project and its associated linear facilities. The staking of linear routes shall define the mile-posts, centerlines, and right-of-way boundaries. The project owner shall notify the CPM when the surveys and staking have been completed.

CUL-3 Prior to the start of project construction, the project owner shall provide the designated cultural resource specialist and the CPM with maps and drawings showing the final project design and site layout, and the final alignment of all linear facilities, as surveyed and staked

per Condition **CUL-2,** above. The routes for the linear facilities shall be provided on 7.5 minute quad maps showing mile-post markers, final center lines and right-of-way boundaries, and the location of all the various areas where surface disturbance may be associated with project-related access roads, storage yards, laydown sites, pull sites, pump or pressure stations, switchyards, electrical tower or pole footings, etc.

After reconnaissance surveys by the designated cultural resource specialist, the specialist may request, and the project owner shall provide, enlargements of portions of the 7.5 minute maps presented as a sequence of strip maps for the linear facility routes. The strip maps shall show mile-post markers and the detailed locations of proposed access roads, storage or laydown sites, tower or pole footings, and any other areas of disturbance associated with the construction and maintenance of linear facilities.

At least one hundred ten (110) days prior to the start of construction on the project, the project owner shall provide the designated cultural resource specialist and the CPM with final drawings and site layouts for all project facilities and maps at appropriate scale(s) for all areas potentially affected by project construction.

CUL-4 After the final center lines have been determined and prior to the start of construction, the designated cultural resource specialist shall determine, in consultation with the CPM and the BLM (as appropriate), where and whether reconnaissance surveys need to be conducted for the rights-of-way for linear facility routes and any other areas expected to be affected by construction and operation of the proposed project Surveys of the linear facilities shall use the centerlines and rights-of-way delineated by the survey stakes placed under Condition **CUL-2**, above. During the surveys, potentially sensitive cultural resource areas that must be protected during construction and operation shall be mapped and listed for specific monitoring and / or mitigation measures to be described in the Cultural Resources Monitoring and Mitigation Plan to be prepared per Condition **CUL-5**, below.

A least one hundred five (105) days prior to the start of construction, the designated cultural resources specialist shall conduct a reconnaissance survey of all areas expected to be affected by construction and operation of the proposed project and its associated linear facilities.

CUL-5 Prior to the start of project construction, the designated cultural resources specialist shall prepare a draft Cultural Resources Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive cultural resources. The Cultural Resources Monitoring and Mitigation Plan

prepared for the Energy Commission per this condition may also become part of the Archaeological Resources Treatment Plan required by the US Bureau of Land Management permit process. This permit usually applies to archaeological resource surveys, testing, monitoring and mitigation, and data and resource recovery that takes place on lands managed by the US Bureau of Land Management and/or other federal agencies. The CPM will review, and must approve in writing, the Cultural Resources Monitoring and Mitigation Plan. After CPM approval, the project owner's designated cultural resources specialist and designated cultural resources team shall be available to implement the Monitoring and Mitigation Plan as needed throughout project construction.

Protocol: The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

a. A proposed research design that includes a discussion of questions that may be answered by the mapping, data and artifact recovery conducted during pre-construction and construction activities, and by the post-construction analysis of recovered data and materials.

b. A discussion of the sequence and time frame for project-related tasks such as any final pre-construction surveys, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; preparation of a research design; cultural resource preparation and recovery; preparation of data and recovered materials for analysis, identification, and inventory; preparation of preliminary and final reports; and preparation of materials for curation.

c. An identification of the person(s) expected to assist with each of the tasks identified in (a), above, and a discussion of the mitigation team leadership and organizational structure, including the inter-relationship of tasks and responsibilities.

d. A discussion of the need for Native American observers or monitors, the procedures to be used to select them, the areas or mile-post sections where they will be needed, and their role and responsibilities.

e. Where sensitive areas are to be avoided during construction and/or operation, the designated cultural resources specialist shall identify measures, such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas. The

discussion shall address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

f. Where monitoring of project construction activities is deemed necessary by the designated cultural resource specialist, the specialist will determine the size or extent of the areas where monitoring is to occur and will establish a schedule for the monitor(s) to be present. If the designated specialist determines that the likelihood of encountering cultural resources in certain areas is slight, monitoring may be discontinued in that location;

g. The designated cultural resource specialist shall have the authority to halt or redirect construction if previously unknown midden deposits or cultural resource materials are encountered during project-related grading, augering, excavation, and/or trenching. The halting or redirection of construction shall remain in effect until the designated cultural resources specialist has notified the CPM of the find and the work stoppage, and until the necessary data recovery and mitigation has been completed. After construction is halted or redirected, the designated cultural resources specialist shall act in accordance with the following procedures:

- The designated cultural resources specialist, representatives of the project owner, and the CPM shall confer within five (5) working days of the notification of the CPM, if necessary, to discuss any mitigation measure(s) already implemented or proposed to mitigate potential impacts to these resources.

- If previously unknown cultural resources are encountered, the designated cultural resource specialist and team members shall monitor construction activities and implement data recovery and mitigation measures, as needed.

- If midden deposits are exposed during ground clearance or excavation, then construction activities shall be halted and the construction area shall be spot-checked or monitored by the designated cultural resources specialist to determine whether cultural resources are present in the deposit.

- All necessary and required data recovery and mitigation shall be completed as expeditiously as possible after discovery of any previously unknown cultural resources unless additional time is agreed to by all parties.

h. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping and recovery of cultural resource materials.

i. All cultural resources encountered will be recorded and mapped (may include photos) and all significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in a public repository or museum that meets the US Secretary of Interior standards and requirements for the curation of cultural resources.

j. Identification of the public institution that has agreed to receive any data and cultural resources recovered during project-related monitoring and mitigation work; discussion of any requirements, specifications, or funding needed for the materials to be delivered for curation and how they will be met; also include the name and phone number of the contact person at the institution.

Verification: At least ninety (90) days prior to the start of construction on the project, the project owner shall provide the CPM with a copy of the draft Cultural Resources Monitoring and Mitigation Plan prepared by the designated cultural resource specialist. If the draft plan is not approved, the project owner, the designated cultural resources specialist, and the CPM shall meet to discuss comments and work out necessary changes.

CUL-6 Prior to the start of project construction, the designated cultural resources specialist shall prepare an employee training program. The project owner shall submit the cultural resources training program to the CPM for review and written approval.

Protocol: The training program shall discuss the potential to encounter cultural resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training program shall also include the set of reporting procedures that workers are to follow if previously unknown cultural resources are encountered during project activities. The training program will be presented by the designated cultural resource specialist and may be combined with other training programs prepared for biological resources, hazardous materials, or any other areas of interest or concern.

Verification: At least sixty (60) days prior to the start of construction on the project, the project owner shall submit to the CPM (or designee) for review, comment, and written approval, the proposed employee training program and

set of reporting procedures the workers are to follow if previously unknown cultural resources are encountered during construction.

The CPM shall provide the project owner with written approval or disapproval of the employee training program and set of reporting procedures. If the draft employee training program is not approved, the project owner, the designated cultural resources specialist and the CPM shall meet to discuss comments and work out necessary changes.

CUL-7 Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resources specialist shall provide the CPM-approved training to all project managers, construction supervisors, and workers who operate ground disturbing equipment. The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance.

Verification: Prior to the start of construction and throughout the project construction period as needed for all new employees, the project owner and the designated cultural resources specialist shall present the CPM-approved training program on the potential for project impacts to sensitive cultural resources. The training shall include a set of reporting procedures for cultural resources encountered during project activities. The project owner shall provide documentation to the CPM that the employee training and the set of procedures have been provided to all project managers, construction supervisors, and workers.

CUL-8 Throughout the project construction period, the project owner shall provide the designated cultural resource specialist with a current schedule of anticipated weekly project activity and a map indicting the area(s) where construction activities will occur. The designated cultural resources specialist shall consult daily with the project superintendent or construction field manager to confirm the area(s) to be worked on the next day(s).

Throughout the pre-construction reconnaissance surveys and the construction monitoring and mitigation phases of the project, the designated cultural resources specialist shall keep a daily log of any resource finds and the progress or status of the resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The designated resources specialist may informally discuss the cultural resources monitoring and mitigation activities with Commission technical staff.

The project owner shall include copies of the cultural resources weekly progress or status summaries in the project owner's weekly Construction Status Report to the CPM.

Verification: Throughout the project construction period, the project owner shall include in the Monthly Compliance Reports to the CPM a summary of the daily logs prepared by the designated cultural resources specialist on the progress or status of cultural resources monitoring and mitigation activities.

CUL-9 The designated cultural resources specialist shall be present at all times to monitor construction-related grading, excavation, trenching, and/or augering in the vicinity of previously recorded archaeological sites and in areas where midden deposits have been identified during project construction.

If the designated cultural resources specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner of the changes. Mile-post markers and boundary stakes placed by the project owner will be used to identify areas where monitoring is being reduced or is no longer deemed necessary.

The daily logs prepared by the designated cultural resources specialist shall indicate by post mile, where and when monitoring has taken place and where monitoring has been deemed unnecessary.

Verification: The project owner shall include in the Monthly Compliance Reports to the CPM, a summary of the daily logs prepared by the designated cultural resources specialist.

CUL-10 The project owner shall ensure that the designated cultural resources specialist obtains and maintains a current BLM Archaeological Resource Use Permit to gain access to lands managed by the US BLM or other federal agencies, and to conduct any surveys, monitoring, data and/or artifact recovery activities on these lands. This use permit shall be obtained from the area office of the BLM in Barstow, California, no less than ten (10) days prior to the start of cultural resource activities governed by the permit.

Verification: The project owner shall provide the CPM and the designated BLM representative(s) with a copy of the BLM archaeological resource use permit received by the designated cultural resources specialist in the next Monthly Compliance Report following its receipt or renewal.

CUL-11 The project owner shall ensure that the designated cultural resources specialist meets the professional qualifications specified by

the BLM; that the Cultural Resources Monitoring and Mitigation Plan prepared per Energy Commission Condition CUL-5, also reflects BLM requirements for a Archaeological Resource Treatment Plan; and that all surveys, monitoring, and data and/or artifact recovery activities implemented during the construction and operation of the HDPP project meet the requirements of the BLM and the Energy Commission.

Verification: The project owner shall concurrently provide the designated BLM representative(s) with copies of all information submitted to the CPM in response to Energy Commission Conditions of Certification. The project owner shall provide the CPM with current copies of BLM permit conditions and requirements; the criteria and requirements for the designation of a cultural resources specialist; the contents of its Archaeological Resource Treatment Plan; and any other requirements pertinent to the protection of cultural resources potentially affected by the HDPP project. In each Monthly Compliance Report, the project owner shall provide the CPM with a summary outlining the measures it has taken to ensure that it has met both BLM and Energy Commission requirements.

CUL-12 The project owner shall ensure the recovery, preparation for analysis, analysis, and preparation for curation of all cultural resource materials encountered and collected during pre-construction surveys and during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain, in its compliance files, copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate research specialists which will ensure the necessary recovery, preparation for analysis, and analysis of cultural resource materials collected during data recovery and mitigation for the project. The project owner shall keep these files available for periodic audit by the CPM.

CUL-13 The project owner shall ensure preparation of a Preliminary Cultural Resource Report following completion of data recovery and site mitigation work. The preliminary report is to be prepared by the designated cultural resources specialist, and the project owner shall submit the preliminary report to the CPM for review, comment, and written approval.

Protocol: The preliminary report shall include (but not be limited to) preliminary information on the survey report(s), methodology, and recommendations; site records and maps; determinations of sensitivity and significance; data recovery and other mitigation activities; discussion of possible results and findings of any analysis to be conducted on recovered cultural resource materials and data; proposed research questions which may be answered or raised by the data recovered from the project; and an estimate of the time needed

to complete the analysis of recovered cultural resource materials and prepare a final report.

If no cultural resources are recovered during project construction, the CPM-approved preliminary report shall also serve as the final report and shall be filed with appropriate entities, as described in conditions **CUL-14** and **CUL-15**.

Verification: The designated cultural resources specialist shall prepare a preliminary report on the cultural resource monitoring and mitigation activities conducted for the project. The report shall be prepared within ninety (90) days following completion of the data recovery and site mitigation work. The project owner shall submit a copy of the Preliminary Cultural Resources Report to the CPM for review, comment, and written approval.

CUL-14 The project owner shall ensure preparation of a Final Cultural Resources Report by the designated cultural resources specialist if significant or diagnostic cultural resources are found. The Final Cultural Resource Report shall be completed within ninety (90) days following completion of the analysis of the recovered cultural materials and related information. The project owner shall submit the Final Cultural Resources Report to the CPM for review, comment, and written approval.

Protocol: The Final Cultural Resources Report shall include (but not be limited to): the survey report(s), methodology, and recommendations; site records and maps; description and inventory list of recovered cultural materials; determinations of significance and potential eligibility; data recovery and other mitigation activities; results and findings of any special analyses conducted on recovered cultural resource materials and data; research questions answered or raised by the data from the project; and the name and location of the public institution receiving the recovered cultural resources for curation.

Verification: The Final Cultural Resources Report shall be prepared by the designated cultural resources specialist for the project within ninety (90) days following completion of the analysis of the recovered cultural materials and preparation of related text, maps, tables, charts, photos, etc. The project owner shall submit a copy of the Final Cultural Resources Report to the CPM for review and approval.

CUL-15 The project owner shall submit an original (or an original-quality) copy of the CPM-approved Final Cultural Resources Report to the public institution receiving the recovered data and materials for curation, to the SHPO, and to the appropriate archaeological information center(s). A legible copy of the final report shall be filed with the Commission CPM, with a request for confidentiality if needed to protect any sensitive resources or sites.

Protocol: The copies of the Final Cultural Resources Report sent to the curating institution, the SHPO, and the information center(s) shall include the following (as applicable to the project findings set forth in the final report): clean and reproducible original copies of all text; originals of any topographic maps showing site and resource locations; original or clear copies of drawings of significant or diagnostic cultural resource materials found during pre-construction surveys, during project-related monitoring, data recovery, and mitigation; and photographs (including a set of negatives, if possible) of the site(s) and the various cultural resource materials recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation.

Verification: The project owner shall maintain in its compliance files copies of all documentation related to the filing of the original materials and the Commission-approved Final Cultural Resources Report with the public institution receiving the recovered data and materials for curation, the SHPO, and the appropriate archaeological information center(s). If no significant cultural resources are recovered, then the preliminary report shall serve as the final report and copies of the preliminary report shall be filed with these same agencies.

CUL-16 Following the filing of the CPM-approved Final Cultural Resources Report with the appropriate entities, the project owner shall deliver for curation all cultural resource materials, maps and data collected during data recovery and mitigation for the project. The materials shall be delivered for curation into a public repository that meets the US Secretary of Interior requirements for the curation of cultural resources.

Verification: All recovered cultural resource materials shall be delivered for curation within thirty (30) days following the filing of the CPM-approved Final Cultural Resources Report. The project owner shall maintain in its project history or compliance files copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate public repository(ies) to which the project owner has delivered for curation all cultural resource materials collected during data recovery and mitigation for the project.

C. PALEONTOLOGICAL RESOURCES

Paleontological resources include the fossilized remains or trace evidence of prehistoric plants or animals which are preserved in soil or rock. These fossils are scientifically important because they help document the evolution of particular groups of organisms and the environment in which they lived. Fossils can also be used to date the rocks in which they are found as well as the formative geologic events.

1. Summary and Discussion of the Evidence

The HDPP is located within the southern portion of the Mojave Desert Physiographic Province. The Mojave Desert Province is characterized by broad alluvial basins of Cenezoic sedimentary and volcanic materials overlying pre-Cenozoic plutonic and metamorphic rocks. The types of rocks present in the project region can be generally subdivided into three main groups: pre-Tertiary age crystalline rocks (greater than 67 million years old); Tertiary age sedimentary and volcanic rocks (67 million to 1.6 million years old); and sedimentary and localized volcanic rocks of Quaternary age (1.6 million years to current). (Exs. 1, section 5.7; 82, p. 386.) Fossils are abundant throughout the Mojave Desert Province and have been found in sediments of both Tertiary and Quaternary age. The fossil remains recovered in this area generally range in age from the early Miocene (24 million years ago) to the Pleistocene (1.6 million to 10,000 years ago). (*Id.)*

The project site and the associated linear facilities are located on portions of several large alluvial fans west of the Mojave River. In assessing the potential for the presence of paleontological resources, Applicant conducted investigative literature searches and field surveys for the project site and the linear facility corridors, including the 32-mile long natural gas pipeline. (Exs. 1, section 5.7; 34.) These efforts indicate that the proposed corridors and project site are

underlain directly, or at a shallow depth, by well-known fossil bearing rocks. Since the rock units encountered in the study area have produced significant fossils in numerous nearby localities, they are considered to have a high potential for discovery of fossils in the future. (Exs. 1, section 5.7-5; 82, pp. 388-91.)

Because of this high potential for containing fossils, project-related construction activities (entailing surface and sub-surface ground disturbance) could affect paleontological resources. Direct impact may result from the immediate disturbance of these resources, whether caused by vegetation removal, vehicle surface travel, earth moving activities, or excavation. Indirect impacts may result from increased erosion due to site clearance and preparation. (Exs. 1, section 5.7-5 to 5.7-6; 82, p. 392.) Moreover, the significance of any recovered fossil materials can only be determined after collection, preparation, and study by qualified paleontologists. (Ex. 82, p. 393.)

The evidence of record establishes that the Conditions of Certification below contain measures adequate to prevent significant adverse impacts to paleontological resources. These Conditions incorporate appropriate measures required by both San Bernardino County and the City of Victorville. (9/16/99 RT 218-19; Ex. 82, p. 400.) Since portions of the proposed 32-mile natural gas pipeline traverse lands within the jurisdiction of the BLM, that federal agency is also participating in federal environmental review of the project.[26] (9/16/99 RT 221.) Commission staff has coordinated development of the Conditions of Certification with the federal authorities, and will continue to coordinate post-certification monitoring activities, as appropriate. (9/16/99 RT 219; Ex. 82, p. 400.)

Finally, the evidence of record establishes that the Conditions in this Decision will ensure that the HDPP does not contribute to any adverse cumulative impact to paleontological resources. (Exs.1, section 5.7-6 to 5.7-7; 82, p. 398.) Any effects

[26] The USFWS is the lead federal agency preparing the federal Environmental Impact Study. ~~This document has not yet been released.~~ The Draft was released on December 23, 1999.

of project closure will be assessed as part of the Compliance Plan contained in this Decision.

FINDINGS and CONCLUSIONS

Based upon the unrefuted evidence of record, we find and conclude as follows:

1. Paleontological resources exist in the project area.

2. Construction and ground disturbance activities associated with the High Desert Power Project and its linear facilities can potentially adversely impact paleontological resources.

3. Mitigation measures required by the Conditions of Certification will assure that activities associated with the High Desert Power Project will cause no direct, indirect, or cumulative adverse impacts to paleontological resources.

4. Implementation of the Conditions of Certification will ensure that the project is constructed and operated in compliance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to paleontological resources.

CONDITIONS of CERTIFICATION

PAL-1 Project-related construction activities (defined as any construction-related vegetation clearance, ground disturbance and preparation, or site excavation activities) shall not begin until the designated paleontologic resources specialist, approved by the California Energy Commission (Commission) Compliance Project Manager (CPM), is available to be on site.

The designated paleontologic resources specialist shall be responsible for implementing all the Paleontologic Resources Conditions of Certification and for using qualified personnel to assist him or her in project-related field surveys; monitoring; fossil stabilization, removal, and transport; data collection and mapping; direction and implementation of mitigation procedures; matrix sampling, screen washing, and other micro-fossil

recovery techniques; preparation and analysis of recovered fossils and data; identification and inventory of recovered fossils; preparation of recovered fossils for delivery and curation; and preparation and filing of required report(s).

After CPM approval of the Paleontologic Resources Monitoring and Mitigation Plan described below in Condition **PAL-4**, the designated paleontologic resources specialist and team shall be available to implement the mitigation plan prior to, and throughout, construction of the project.

Protocol: Prior to the start of project construction, the project owner shall provide the CPM with name(s) and statement of qualifications for its designated paleontologic resources specialist and mitigation team members. The resume(s) shall include the following information:

1) The resume for the designated paleontologic resource specialist shall demonstrate that the specialist meets the following minimum qualifications: a graduate degree in paleontology, geology or paleo resource management; at least three years of paleontologic resource mitigation and field experience in California, including at least one year's experience leading paleontologic resource field surveys; leading site mapping and data recording; marshalling and use of equipment necessary for fossil recovery, sampling, and screen washing; leading fossil recovery operations; preparing recovered materials for analysis and identification; recognizing the need for appropriate sampling and/or testing in the field and in the lab; directing the analyses of mapped and recovered fossil materials; completing the identification and inventory of recovered fossil materials; and the preparation of appropriate reports to be filed with the receiving curation repository, the UC Museum of Paleontology at UC Berkeley, all appropriate regional information center(s), and the Energy Commission.

2) The resume for the designated paleontologic resource specialist shall include a list of specific projects the specialist has previously worked on; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist's work on these referenced projects.

3) If additional personnel will be assisting the designated paleontologic resources specialist in project-related field surveys, monitoring, data and fossil recovery, mapping, mitigation, fossil analysis, or report preparation, the project owner shall also provide

names, addresses, and resumes for these paleo resource team members.

4) If the CPM determines that the qualifications of the proposed paleontologic resources specialist are not in concert with the above requirements, the project owner shall submit another individual's name and qualifications for consideration.

5) If the previously approved designated paleontologic resources specialist is replaced prior to completion of project mitigation, the project owner shall obtain CPM approval of the new designated paleontologic resources specialist by submitting the name and qualifications of the proposed replacement to the CPM at least ten (10) days prior to the termination or release of the preceding designated paleontologic resources specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

Verification: At least ninety (90) days prior to the start of construction on the project, the project owner shall submit the name and resume for its designated paleontologic resources specialist, to the CPM for review and approval. The CPM shall provide written approval or disapproval of the proposed paleontologic resources specialist.

Thirty (30) days prior to start of construction, the project owner shall confirm in writing to the CPM that the previously approved, designated paleontologic resources specialist and the team of assistants are prepared to implement the monitoring and mitigation measures for paleo resources, as described in the CPM-approved Paleontologic Resources Monitoring and Mitigation Plan prepared per Condition **PAL-4,** below.

Protocol: At least ten (10) days prior to the termination or release of a designated paleontologic resource specialist, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated paleontologic resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

PAL-2 Prior to the start of project construction, the project owner shall survey and stake all areas expected to be affected by construction and operation of the proposed project and its associated linear facilities. The surveys and staking shall reflect the final project design and site layout and the final mile-posts, centerlines, and right-of-way boundaries for the linear facilities.

Verification: At least ninety (90) days prior to the start of construction, the project owner shall stake and flag the boundaries of all areas expected to be affected by construction and operation of the proposed project and its associated linear facilities. The staking of linear routes shall define the mile-posts, centerlines, and right-of-way boundaries. The project owner shall notify the CPM when the surveys and staking have been completed.

PAL-3 Prior to the start of project construction, the project owner shall provide the designated paleontologic resource specialist and the CPM with maps and drawings showing the final project design and site layout and the final alignment of all linear facilities, as surveyed and staked per Condition **PAL-2**, above. The routes for the linear facilities shall be provided on 7.5 minute quad maps, showing mile-post markers, final center lines and right-of-way boundaries, and the location of all the various areas where surface disturbance may be associated with project-related access roads, storage yards, laydown sites, pull sites, pump or pressure stations, switchyards, electrical tower or pole footings, etc.

After reconnaissance surveys by the designated paleontologic resource specialist, the specialist may request, and the project owner shall provide, enlargements of portions of the 7.5 minute maps presented as a sequence of strip maps for the linear facility routes. The strip maps shall show mile-post markers and the detailed locations of proposed access roads, storage or laydown sites, tower or pole footings, and any other areas of disturbance associated with the construction and maintenance of linear facilities.

Verification: At least ninety (90) days prior to the start of construction on the project, the project owner shall provide the designated paleontologic resource specialist and the CPM with final drawings and site layouts for all project facilities and maps at appropriate scale(s) for all areas potentially affected by project construction.

PAL-4 Prior to the start of construction, the designated paleontologic resource specialist shall conduct a reconnaissance survey of the final project site and the final center lines and rights-of-way for the project's linear facilities. Potentially sensitive areas identified during this reconnaissance shall be included in the Monitoring and Mitigation Plan prepared per Condition **PAL-5**, as well as appropriate monitoring and/ or mitigation measures.

Verification: At least seventy-five (75) days prior to the start of construction the designated paleontologic resources specialist shall conduct a reconnaissance survey of the final project site and the final routes for the project-related linear facilities. The dates, survey methods, findings, and

recommendations shall be summarized in the Monitoring and Mitigation Plan prepared pursuant to Condition **PAL-5**.

PAL-5 Prior to the start of project construction, the designated paleontologic resource specialist shall prepare a draft Paleontologic Resources Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive paleontologic resources. The CPM will review, and must approve in writing, the draft Paleontologic Resources Monitoring and Mitigation Plan. After CPM approval, the project owner's designated paleontologic resource specialist and designated paleontologic resource team shall be available to implement the Monitoring and Mitigation Plan as needed throughout project construction.

Protocol: The Paleontologic Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

1) A discussion of the sequence of project-related tasks, such as any final pre-construction surveys, fieldwork, flagging, or staking; construction monitoring; mapping and data recovery; fossil preparation and recovery; preparation for analysis, identification, and inventory; preparation of preliminary and final reports; and preparation of materials for curation.

2) An identification of the person(s) expected to assist with each of the tasks identified in (a), above, and a discussion of the mitigation team leadership and organizational structure, and the inter-relationship of tasks and responsibilities.

3) Where sensitive areas are to be avoided during construction and/or operation, the designated paleontologic resource specialist shall identify measures, such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas. The discussion should address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

4) Where monitoring of project construction activities is deemed necessary by the designated paleontologic resource specialist, the specialist will determine the size or extent of the areas where monitoring is to occur and will establish a schedule for the monitor(s) to be present. If the designated specialist determines that the likelihood of encountering fossil resources in certain areas is slight, monitoring may be discontinued in that location.

5) In sediments with a high potential to contain fossil resources but where no fossil evidence is observed on the surface or in the excavated spoils, the

designated paleontologic resource specialist shall remove an adequate sample of the spoils and set them aside for further processing (such as screen washing and sorting) to determine if micro-fossil resources are present. Adequate samples shall be obtained from each underlying sedimentary deposit in each area affected by project-related construction activities.

6) If fossil-bearing sediments or fossil materials are encountered on the surface or are exposed during project-related grading, augering, and/or trenching, the designated paleontologic resource specialist shall have the authority to halt or redirect construction in the immediate vicinity of the find until he or she can determine the significance of the find. The designated paleontologic resources specialist shall act in accordance with the following procedures:

   - The project owner, or its designated representative, shall inform the CPM within one (1) working day of the discovery of any potentially significant paleontologic resources and discuss the specific measure(s) proposed to mitigate potential impacts to these resources.

   - The designated paleontologic resource specialist, representatives of the project owner, and the CPM shall confer within five (5) working days of the notification of the CPM, if necessary, to discuss any mitigation measures already implemented or proposed to be implemented and to discuss the disposition of any finds.

   - All necessary and required data recovery and mitigation shall be completed as expeditiously as possible.

7) A discussion of the designated paleontologic resource specialist's access to equipment and supplies necessary for recovery of fossil materials and matrix samples, including screen washing equipment for recovery of micro-fossils. This should include information on the types and availability of specialized equipment and supplies needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.

8) All paleontologic resource localities, rock units, and sediment and stratigraphic boundaries encountered shall be recorded (may include photos) and mapped; all vertebrate fossils and trackways, and all diagnostic invertebrate and plant fossils, shall be stabilized, prepared, and recovered for identification and analysis; adequate samples of potentially fossil-bearing matrix shall be collected and screen washed for sorting and analysis of micro-fossils; recovered fossil materials shall be analyzed and identified to the genus level whenever possible; and all recovered fossil materials shall be inventoried, prepared, and delivered for curation into a retrievable storage collection in a public repository or museum which

meets the Society of Vertebrate Paleontologists (SVP) standards and requirements for the curation of paleontologic resources.

9) Identification of the institution that has agreed to receive any data and fossil materials recovered during project-related monitoring and mitigation work; discussion of any requirements or specifications for materials delivered for curation and how they will be met; also include the name and phone number of the contact person at the institution.

Verification: At least sixty (60) days prior to the start of construction on the project, the project owner shall provide the CPM with a copy of the draft Monitoring and Mitigation Plan prepared by the designated paleontologic resource specialist. The CPM shall provide written approval or disapproval of the proposed Paleontologic Resources Monitoring and Mitigation Plan within fifteen (15) days of receipt of the submittal. If the draft plan is not approved, the project owner, the designated paleontologic resources specialist, and the CPM shall meet to discuss comments and work out necessary changes.

PAL-6 Prior to the start of project construction, the designated paleontologic resources specialist shall prepare an employee training program. The project owner shall submit the paleo resources training program to the CPM for review and approval.

Protocol: The training program will discuss the potential to encounter fossil resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources.

The training shall also include the set of reporting procedures that workers are to follow if sensitive paleontologic resources are encountered during project activities. The training program will be presented by the designated paleo resource specialist and may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

Verification: At least thirty (30) days prior to the start of project construction, the project owner shall submit to the CPM (or designee) for review, comment, and written approval the proposed employee training program and the set of reporting procedures the workers are to follow if paleontologic resources are encountered during project construction.

The CPM shall provide the project owner with written approval or disapproval of the employee training program and set of reporting procedures. If the draft employee training program and set of procedures are not approved, the project owner, the designated paleontologic resources specialist, and the CPM shall meet to discuss comments and work out necessary changes.

PAL-7 Prior to the start of construction, and throughout the project construction period as needed for all new employees, the project owner and the designated paleontologic resource specialist shall provide the CPM-approved training to all project managers, construction supervisors, and workers who operate ground disturbing equipment. The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive paleontologic resources or deposits that may be discovered during project-related ground disturbance.

Verification: Prior to the start of construction, and throughout the project construction period as needed for all new employees, the project owner and the designated paleontologic resources specialist shall present the CPM-approved paleontologic resources training program. The training shall include a set of reporting procedures for paleo resources encountered during project activities. The project owner shall provide documentation to the CPM in the Monthly Compliance Report that the employee training and the set of procedures have been provided to all project managers, construction supervisors, and workers. Documentation for training of additional new employees shall be provided in subsequent Monthly Compliance Reports, as appropriate.

PAL-8 Throughout the project construction period, the project owner shall provide the designated paleontologic resource specialist with a current schedule of anticipated weekly project activity and a map indicating the area(s) where construction activities will occur. The designated paleontologic resource specialist shall consult daily with the project superintendent or construction field manager to confirm the area(s) to be worked on the next day(s).

Protocol: Throughout the pre-construction reconnaissance survey and construction monitoring and mitigation phases of the project, the designated paleontologic resources specialist shall keep a daily log of any fossil resource finds and the progress or status of the surveys, resource monitoring, mitigation, preparation, identification, and analytical work being conducted for the project. The designated resource specialist may informally discuss the paleo resource monitoring and mitigation activities with their Commission technical counterpart. In the Monthly Compliance Report, the project owner shall provide the CPM with a summary of the daily logs prepared by the designated paleontologic specialist.

In the Monthly Compliance Report, the project owner shall provide the CPM with a summary of the daily logs prepared by the designated paleontologic specialist.

Verification: Throughout the project construction period, the project owner shall include in the Monthly Compliance Reports to the CPM a summary of the daily logs prepared by the designated paleontologic resources specialist.

PAL-9 The designated paleontologic resource specialist shall be present at all times to monitor construction-related grading, excavation, trenching, and/or augering in areas where potentially fossil-bearing sediments have been identified. These sediments include the Quaternary-age undifferentiated alluvium; the older alluvium, including occasional lake or pond deposits; the fanglomerate deposits; and the Tertiary-age rock units of the Tropico Group.

Protocol: If the designated paleontologic resources specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner of the changes. Mile-post markers and boundary stakes placed by the project owner will be used to identify areas where monitoring is being reduced or is no longer deemed necessary.

The daily logs prepared by the designated paleontologic resource specialist shall indicate by mile-post, where and when monitoring has taken place and where monitoring has been deemed unnecessary.

Verification: The project owner shall include in the Monthly Compliance Reports to the CPM, a summary of the daily logs prepared by the designated paleontologic resource specialist.

PAL-10 The project owner, through the designated paleontologic resource specialist, shall ensure the recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontologic resource materials encountered and collected during pre-construction surveys and during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain, in its compliance files, copies of signed contracts or agreements with the designated paleontologic resource specialist and other qualified research specialists who will ensure the necessary data and fossil recovery, mapping, preparation for analysis, analysis, identification and inventory, and preparation for and delivery of all significant paleontologic resource materials collected during data recovery and mitigation for the project. The project owner shall maintain these files for a period of three (3) years after completion and approval of the CPM-

approved Final Paleontologic Resources Report and shall keep these files available for periodic audit by the CPM.

PAL-11 The project owner shall ensure that the designated paleontologic resource specialist obtains and maintains a current BLM Paleontologic Resource Use Permit to gain access to lands managed by the US BLM and to conduct any surveys, monitoring, data and/or fossil recovery activities on these lands. This use permit shall be obtained from the state office of the BLM in Sacramento, California, no less than ten (10) days prior to the start of paleontological resource activities governed by the permit.

Verification: The project owner shall provide the CPM with a copy of the BLM paleontologic resource use permit received by the designated paleontologic resource specialist in the next Monthly Compliance Report following its receipt or renewal.

PAL-12 The project owner shall ensure preparation of a Preliminary Paleontologic Resources Report following completion of data recovery and site mitigation work. The preliminary report is to be prepared by the designated paleontologic resources specialist, and the project owner shall submit the preliminary report to the CPM for review, comment, and written approval.

The preliminary report shall include (but not be limited to) preliminary information on the survey report(s), methodology, and recommendations; locality records and maps; determinations of sensitivity and significance; data recovery and other mitigation activities; possible results and findings of any analysis to be conducted on recovered paleontologic resource materials and data; proposed research questions that may be answered or may have been raised by the data from the project; and an estimate of the time needed to complete the analysis of recovered fossil materials and prepare a final report.

Protocol: If no fossil resources were recovered during project construction, the CPM-approved preliminary report shall also serve as the final report and shall be filed with appropriate entities, as described in conditions **PAL-12** and **PAL-13**.

Verification: The designated paleontologic resources specialist shall prepare a preliminary report on paleontologic the resource monitoring and mitigation activities conducted for the project. The report shall be prepared within ninety (90) days following completion of the data recovery and site mitigation work. The project owner shall submit a copy of the Preliminary Paleontologic Resources Report to the CPM for review, comment, and written approval.

PAL-13 The project owner shall ensure preparation of a Final Paleontologic Resources Report by the designated paleontologic resources specialist if significant fossil resources are found and recovered during project-related surveys, monitoring and mitigation activities. The Final Paleontologic Resource Report shall be completed following completion of the analysis of the recovered fossil materials and related information. The project owner shall submit the final paleo report to the CPM for review, comment, and written approval.

Protocol: The final report shall include (but not be limited to): the survey report(s), methodology, and recommendations; locality records and maps; description and inventory list of recovered fossil materials; determinations of sensitivity and significance; summary of data recovery and other mitigation activities; results and findings of any special analyses conducted on recovered paleontologic resource materials and data; research questions answered or raised by the data from the project; and the name and location of the public institution receiving the recovered paleontologic resources for curation.

Verification: The Final Paleontologic Resources Report shall be prepared by the designated paleontologic resources specialist for the project within ninety (90) days following completion of the analysis of the recovered fossil materials and preparation of text and related information such as maps, diagrams, tables, charts, photos, etc. The project owner shall submit a copy of the Final Paleontologic Resources Report to the CPM for review and written approval.

PAL-14 The project owner, through the designated paleontologic resources specialist, shall submit an original (or an original-quality) copy of the CPM-approved Final Paleontologic Resources Report to the public institution receiving the recovered data and materials for curation, to the state Museum of Paleontology at UC Berkeley, and appropriate regional information center(s). A legible copy of the final report shall be filed with the CPM, with a request for confidentiality, if needed to protect any sensitive resources or localities.

Protocol: The report copy sent to the entities identified above shall include the following (as applicable to the project findings set forth in the final report): clean and reproducible original copies of all text; originals of any topographic maps showing site and resource locations, boundaries of any underlying rock units and stratigraphy; original or clear copies of drawings of significant paleontologic resource materials found during pre-construction surveys, during project-related monitoring, data recovery, and mitigation; and photographs (including a set of negatives, if possible) of the locality(ies) and the various paleontologic resource materials

recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation.

Verification: The project owner shall maintain in its compliance files copies of all documentation related to the filing of the original materials and the CPM-approved Final Paleontologic Resources Report with the public institution receiving the recovered data and materials for curation, the state Museum of Paleontology at UC Berkeley, and the appropriate paleontologic information repository(ies). If no significant paleontologic resources were recorded or recovered, then the CPM-approved Preliminary Paleontologic Resources Report shall serve as the final report and shall be filed with these same entities.

PAL-15 Following the filing of the CPM-approved Final Paleontologic Resource Report with the appropriate entities, the project owner shall deliver for curation all paleontologic resource materials and data collected during data recovery and mitigation for the project. The materials shall be delivered for curation into a public repository which meets Society for Vertebrate Paleontology (SVP) requirements for the curation of paleontologic resources.

Verification: All paleontologic resource materials shall be delivered for curation within thirty (30) days following the filing of the CPM-approved Final Paleontologic Resource Report. The project owner shall maintain in its project history or compliance files copies of signed contracts or agreements with the museum(s), university(ies), or other appropriate public repository(ies) by which the project owner has provided for delivery for curation of all the paleontologic resource materials collected during data recovery and site mitigation for the project.

D. WASTE MANAGEMENT

The High Desert Power Project will create various hazardous and nonhazardous waste products during its construction and operation. This portion of the Decision assesses whether the creation of these wastes will result in any potential environmental impact, and examines whether:

- the Applicant's proposed waste management plans adequately reduce the risks and environmental impacts associated with the handling, storing, and disposal of project-related hazardous and non-hazardous wastes; and
- waste management practices will comply with all applicable laws, ordinances, regulations, and standards.

1. Summary and Discussion of the Evidence

Project construction activities will generate a variety of inert solid wastes. The management of these wastes may fall to the project owner and/or the construction contractors. Typical management practices include recycling when possible, proper storage of waste and debris to prevent wind dispersion, and weekly pick-up and disposal of waste in local Class III landfills. (Ex. 1, pp. 5. 8-9.) Hazardous construction wastes will be treated by off-site disposal or recycling.

Construction waste streams and management methods are shown on Waste Management Table 1 below.

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WASTE MANAGEMENT Table 1
Construction Waste Streams and Management Methods

Summary of Construction Waste Streams and Management Methods			
Waste Stream	Classification	Amount	Off-site Treatment
Scrap wood, steel, glass, plastic, paper	Non-hazardous	40 yd^3/ wk	Landfill
Empty hazardous containers	Hazardous	1 yd^3/wk	Hazardous waste disposal facility
Solvents, used oil, paint, adhesives, oily rags	Hazardous	165 gallons	Hazardous waste disposal facility or recycle
HRSG cleaning waste (chelate type solution)	Hazardous	60, 000 gallons	Hazardous waste disposal or recycle
Spent batteries	Hazardous	20 in 2 years	Recycle
Sanitary waste (chemical toilets)	Non-hazardous	200 gallons/day	Sanitary water treatment plant

Source: Exhibit 82, p. 112.

The operational waste streams and the typical management methods are shown on Waste Management Table 2 below.

WASTE MANAGEMENT Table 2
Operational Waste Streams and Management Methods

Summary of Operation Waste Streams and Management Methods			
Waste Stream	Classification	Amount	Off-Site Treatment
Used hydraulic fluid, oils, grease, oily filters	Hazardous	<5 gallons/day	Recycle
Spent batteries	Hazardous	20 every 2 years	Recycle
Spent SCR catalyst (heavy metals)	Hazardous	20,000 ft^3 (once every 3 to 5 yr.)	Recycle
Spent demineralizer resin	Non-hazardous	10 ft^3 (Once every 3 yr.)	Recycle
Anthracite and sand, filter, media	Non-hazardous	100 ft^3 (once every 3 yrs)	Recycle
Cooling tower basin sludge	Non-hazardous	2 tons/yr.	Hazardous waste disposal facility
Effluent from oily water separation system	Hazardous	3000 gal/yr.	Hazardous waste disposal facility
Spent softener resin	Non-hazardous	100 ft^3 (Once every 3 yrs.)	Recycle
oily rags, oil absorbent	Hazardous	55 gallons/month	Hazardous waste

			disposal facility
Crystallizer solid material	Non-hazardous or hazardous waste disposal facility	5.4 tons/day	Hazardous waste disposal facility
Sanitary waste water	Non-hazardous	1400 gallons/day	Sewage treatment plan
Clarifier blowdown sludge	Non-hazardous	2.5 tons/day	Non-hazardous disposal facility
CTG used air filters	Non-hazardous	2100 filters (once every 5 yrs)	Recycle

Source: Exhibit 82, p.112.

Non-hazardous wastes may be transported to local landfills. While the Victorville Class III landfill has an existing life only to the year 2005 (Ex. 82, p. 113), testimony of record indicates that current plans provide for long-term expansion in excess of 30 to 40 years. (9/30/99 RT 208.) Similarly, the Barstow landfill, with an expected remaining life until 2007, is in the planning process for long-term expansion in excess of 100 years. (9/30/99 RT 208-09; see also 9/16/99 RT 195-96.)

Three Class I landfills in California may accept hazardous wastes: Kettleman Hills (remaining life of 48 years); the Lokern facility in Buttonwillow (remaining life of 30 years); and a facility in Westmoreland in Imperial County (remaining life of about 50 years). (Ex. 82, p. 113.)

Overall, the evidence of record shows that wastes generated by project construction and operation will be managed -- by recycling or disposal -- appropriately. Adequate Class I landfill capacity exists to accommodate hazardous wastes, and sufficient Class III capacity should be available to absorb non-hazardous waste. The evidence also establishes that there is no significant difference in waste generation between the two or the three power train configuration. (9/16/99 RT 197.) Similarly, the presence of multiple landfills indicates that cumulative impacts from this and other projects will be insignificant. (Ex. 82, p. 115.)

HDPP's process wastewater stream consists of blowdown from the cooling tower, wash water, safety showers, and neutralizing regeneration wastewaters. The process wastewater stream contains dissolved minerals and left over water treatment chemicals. Naturally occurring minerals in the source water at detectable levels or higher include cadmium, lead, mercury, arsenic, and selenium. The process wastewater is treated in various ways, including passing through a crystallizer where solid waste is separated out. The crystallizer will produce 5.4 tons of solid waste which will be disposed off-site. (Ex. 82, p. 114.)

The project's wastewater treatment system is designed to be a zero-discharge water reclamation process. The effluent water from the wastewater treatment process will be reclaimed and reused at the facility. The wastewater treatment system will consist of a brine concentrator and a Calandria vapor compression or forced circulation crystallizer. (*Id*.)

During early stages in the proceeding, CURE asserted that the project may require a hazardous waste treatment permit from the Department of Toxic Substances Control (DTSC) for the wastewater treatment system. Subsequent discussions and clarifications (including that the project would use a forced circulation crystallizer) established, however, that the project would be eligible for a permit exemption, provided certain conditions were met. These conditions are that the wastewater be recycled at the same facility at which it was generated, the wastewater be recycled within ninety days of its generation, and the wastewater be managed in accordance with requirements applicable for generators of hazardous wastes. (Ex. 82, p. 114; 9/16/99 RT 192-93; see also Ex.107.) These requirements are incorporated in the Conditions of Certification below.

FINDINGS and CONCLUSIONS

Based upon the evidence of record, we find and conclude as follows:

1. Construction and operation of the High Desert Power Project will create hazardous and non-hazardous wastes.

2. There is no significant difference in the amount of waste generated by the 678 or the 720 MW configurations.

3. Waste products will be recycled to the extent practical. Where this is impractical, hazardous wastes will be disposed in a Class I disposal facility, and non-hazardous wastes will be disposed in a Class III facility.

4. The High Desert Power Project will not create quantities of hazardous or non-hazardous construction or operational wastes sufficient to create a significant adverse impact upon the capacities of the Class I or Class III landfills.

5. The waste management practices identified in the Conditions of Certification ensure that project wastes, or their disposal, will not create a significant adverse environmental impact.

6. The process wastewater treatment facility will use a forced circulation crystallizer.

7. The Conditions of Certification below ensure that the project will comply with the laws, ordinances, regulations, and standards identified in the pertinent portion of Appendix A of this Decision.

We therefore conclude that hazardous and non-hazardous construction and operation wastes associated with this project will create no significant adverse direct, indirect, or cumulative environmental impacts.

CONDITIONS of CERTIFICATION

WASTE-1 Prior to the start of construction, the project owner shall prepare and submit to the CPM a finalized Waste Management Plan for all wastes generated during construction and operation of the project. The plan shall contain at least the following:

A. A description of all waste streams including their origin, estimates of amounts, frequency of generation, and hazardous or non-hazardous classification and reasons therefor.

B. Methods of managing each waste, including treatment methods and treatment contractors, methods of testing wastes to assure correct classification, modes of transportation, disposal requirements and sites, and recycling and waste minimization plans.

Verification: At least ninety (90) days prior to start of rough grading the project owner shall submit a Waste Management Plan to the CPM for review and approval. Within fifteen (15) days of receipt of the plan, the CPM will indicate approval/disapproval, changes, or additional information needed. In the Annual Compliance Report, the project owner shall summarize planned versus actual waste management activities.

NOTE: At the project owner's discretion, management plans for construction and operation wastes may be prepared separately. If so, the operational waste plan shall be submitted at least sixty (60) days prior to the start of operation.

WASTE-2 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control. The project owner shall also obtain a hazardous waste generator permit from the City of Victorville's Fire Department, which is a Certified Unified Program Agency (CUPA) agency.

Verification: At least thirty (30) days prior to start of rough grading, the project owner shall submit to the CPM, copies of the hazardous waste generator identification number and of the Victorville City Fire Department hazardous waste generator permit.

WASTE-3 The project operator shall notify the CPM of any waste management-related known enforcement action that has either been taken or is known to be pending against it or against any waste hauler or treatment, storage, or disposal facility with which it contracts.

Verification: The project owner shall notify the CPM, in writing, within ten (10) working days of becoming aware of any such enforcement action.

WASTE-4 The project owner will design and install the process wastewater treatment facility using a forced circulation crystallizer as described in the application. (Exhibit 1.) If the project owner chooses to use any other type of crystallizer, it must submit the process wastewater treatment system to the Department of Toxic Substances Control (DTSC) for review.

Verification: At least thirty (30) days prior to the start of construction, the project owner shall submit to the CPM a copy of a flow diagram that depicts how the process wastewater would be routed to the brine concentrator and forced circulation crystallizer. The diagram shall include all auxiliary equipment associated with the process wastewater treatment system.

VIII. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project affect, in differing degrees, the community in which it is located. The effect upon the local area varies from case to case depending upon the nature of the community and the extent of the associated impacts. In the present instance, the technical elements discussed in this portion of the Decision are those addressing likely areas of local concern.

A. LAND USE

The discussion of the land use impacts for the High Desert Power Project focuses on two main issues: the conformity of the project with local land use plans, ordinances, and policies; and the potential of the proposed project to have direct, indirect, or cumulative conflicts with existing and planned uses. In general, a power plant project can be incompatible with existing or planned land uses when it creates unmitigated noise, dust, public health hazards or nuisances, traffic or visual impacts, or when it significantly restricts existing or future uses.

1. Summary and Discussion and of the Evidence

The 25 acre HDPP site is located within the corporate limits of the City of Victorville, and within the boundaries of the former George Air Force Base. After closure, lands within the former Air Force base became the new Southern California Logistics Airport (SCLA; until recently, this was referred to as the Southern California International Airport). This land is still owned by the federal government, but is undergoing transfer to the City of Victorville. New development at the property will be focused on airport-related uses. The SCLA property is subject to Victorville's General Plan and is also covered by a Specific Plan. (Exs. 1, pp. 5.5-9 to 5.5-10; 82, 126-27; see Land Use Figures 1, 2, and 3, following.)

The power plant site is designated "I" for heavy industrial uses pursuant to the Specific Plan and is also zoned “M-2” for heavy industrial uses. These designations permit power plants as an allowable use. (Exs. 1, p. 5-5.9; 82, p.128.)

The 7.2 mile transmission line is located within the corporate boundaries of Victorville (West City and Turner Heights Planning Areas), with the first one and one-half miles within the SCLA Specific Plan area. The transmission corridor passes through a variety of designated land uses and zones. The City of Victorville's General Plan addresses the transmission line and corridor; no specialized ordinances pertain. (Ex. 82, p.129.)

The potable water connection line will run for about 500 feet along the local streets within the SCLA Specific Plan area. The water supply pipeline will be within county or city rights-of-way, and will require coordination between the cities of Victorville and Adelanto. (Ex. 82, p. 130; 9/16/99 RT 155.)

The southern natural gas pipeline corridor (approximately 2.75 miles long) lies within the SCLA Planning Area. The designated land and zoning uses along this route include various densities of rural residential, family residential, business, commercial, industrial, desert living, and open-space. The northern (second) natural gas pipeline (approximately 32 miles long) will be located within previously developed utility and transportation corridors crossing lands

LAND USE FIGURE 1

General Plan Land Use Designations

(Source: Exhibit 1)

LAND USE FIGURE 2

Jurisdictional Boundaries and Planning Area Map

(Source: Exhibit 1)

LAND USE FIGURE 3

Specific Plan Land Use Designations

(Source: Exhibit 1)

under the jurisdiction of the City of Adelanto, San Bernardino County, and the BLM.[27] (Exs. 29, p. 2.5-3; 82, p.129.)

The evidence of record uniformly establishes that the HDPP project will be compatible, and will not conflict, with current zoning and land uses, nor with anticipated and planned land uses. (9/16/99 RT 154; Ex.82, pp. 128-30.) The evidence also indicates that the General Plan includes the power project as part of the city's balancing of present and future land uses; therefore, the HDPP would not contribute to a cumulative adverse impact from a land use perspective. (9/16/99 RT 155; Ex. 82, p. 130.)

FINDINGS and CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. The High Desert Power Project and its related facilities are allowable uses under the applicable zoning designations.

2. Construction and operation of the High Desert Power Project and its appurtenant facilities will not create conflicts with existing or planned land uses.

3. The Condition of Certification below ensures that the project will be constructed and operated in compliance with the applicable laws, ordinances, regulations, and standards contained in the pertinent portion of Appendix A of this Decision .

We therefore conclude that the High Desert Power Project will not create any significant direct, indirect, or cumulative adverse land use impacts.

[27] BLM manages lands for mixed uses within this region through the California Desert Conservation Area Plan.

CONDITION of CERTIFICATION

LAND USE-1 The project owner shall ensure compliance with Section 18.44 of the City of Victorville's municipal code which sets forth various categories and requirements to be met in the Conditional Use Permit and the various requirements for building site area, building height, fences, walls and hedges, electric transmission lines, off-street parking, and landscaping requirements.

Protocol: The project owner shall submit the proposed design criteria to the CPM and the City of Victorville for review and comment before implementing the work.

Verification: The project owner shall provide to the CPM, in a monthly Compliance Report, evidence of compliance with Section 18.44 of the city's municipal code as described above.

B. NOISE

The construction and operation of any power plant creates noise, or unwanted sound. The character and the loudness of this sound, the times of day or night during which it is produced, and the proximity of the facility to sensitive receptors combine to determine whether a proposed project will meet applicable noise control laws and ordinances, or whether it will create significant adverse impacts.

In this portion of the Decision, we examine the likely noise impacts from the High Desert Power Project and the sufficiency of measures proposed to control them.

1. Summary and Discussion of the Evidence

Neither the City of Victorville's General Plan, its Municipal Code, or the Southern California Logistics Airport Comprehensive Land Use Plan places any limits on the noise emanating from new development such as the High Desert Power Project. The General Plan, however, places limitations on the siting of new projects within already noisy areas, with the purpose of protecting the occupants of the new project from high existing noise levels. (Ex. 82, p.159; see also Exs.102, 104; 9/16/99 RT 49-50.) The evidence indicates that, given this absence of specific standards, potential noise impacts were assessed to determine whether the project would produce an increase in noise levels of five decibels (dB) or greater. This level represents the maximum added noise that produces no significant adverse impacts. (*Id*.)

The nearest sensitive receptors (the Harold H. George and the Shephard Schools, as well as the SCLA golf course) are approximately one and one-quarter miles from the project site. Several single-family dwellings and residential subdivisions, however, are near (ranging between 400 to 2600 feet) the proposed corridors for the gas and water pipelines and the electric transmission line. The evidence establishes that Applicant examined the

prevailing noise environment, and performed a noise survey at the nearest residential area. (Exs. 1, pp. 5.1-3 to 5.1-8; 82, pp. 160-61.)

During its operating life, the power plant will emit a steady, continuous noise both day and night. Occasional short-term increases in noise will occur as steam relief valves open to vent pressure during startup and shutdown. This operational noise level will range between 37 and 49 dBA, yielding a noise level at the Harold H. George School (the nearest sensitive receptor) of about 35 to 47 dBA. This would be considerably quieter than the 60 to 70 dBA level at the school attributable to traffic noise. Thus, power plant operations would likely be virtually inaudible. (Exs. 5.1-10; 82, p. 163.) Similarly, operational noise from the transmission line is projected to be unnoticeable above the background levels. Administrative procedures and hearing protection measures will be employed to protect plant workers. (Ex. 82, p.164.)

Construction of the power plant and the associated linear facilities will cause short-term noise impacts. General construction activities may result in noise emissions in the 68 to 70 dBA range, measured at a distance of 400 feet. While these noise levels could annoy nearby receptors, the evidence establishes that no single receptor should be subject to impacts for more than a few days. The loudest noise attributable to the project (as high as 76 dBA) will be caused by the steam blows. These are necessary to purge piping and tubing of accumulated debris and will occur several times daily over a period of two or three weeks prior to operation. (Ex. 82, p. 162.)

Finally, the evidence indicates that the project is unlikely to impact adjacent development, or contribute to adverse cumulative impacts, due to the commercial and industrial nature of future development in the vicinity, as well as to the project's relatively low noise emissions. The uncontradicted evidence of record thus establishes that the project will represent an unobtrusive, nearly undetectable addition to existing sound levels at sensitive receptors. (Ex. 82, pp.

164-65.) Any potential for residual noise impacts will be adequately mitigated by implementation of the Conditions of Certification below.

FINDINGS AND CONCLUSIONS

Based upon the uncontroverted evidence of record, we find and conclude as follows:

1. Construction and operation activities of the High Desert Power Project will create noise.

2. The nearest sensitive receptors potentially affected by the project's operational noise are approximately one and one-quarter miles away.

3. The nearest sensitive receptors potentially affected by construction noise associated with the project are approximately 400 to 2600 feet away.

4. Operational noise from the power plant under normal operating conditions will not increase the existing ambient noise levels experienced at the nearest sensitive receptors.

5. Construction activities associated with the project will be temporary in nature and will not result in significant adverse noise impacts.

6. Implementation of the measures contained in the Conditions of Certification below will assure that the High Desert Power Project will comply with the applicable laws, ordinances, regulations, and standards specified in the pertinent portion of Appendix A of this Decision, and that noise impacts will be mitigated to the extent feasible.

We therefore conclude that the High Desert Power Project will not create any significant direct, indirect, or cumulative adverse noise impacts.

CONDITIONS of CERTIFICATION

NOISE-1 At least fifteen (15) days prior to the start of rough grading, the project owner shall notify the principals of the Harold H. George and Shepard Schools, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the

public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed twenty-four (24) hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one (1) year.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report following the start of rough grading a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.

Protocol: The project owner or authorized agent shall:

- use the Noise Complaint Resolution Form (see next page for example), or functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- attempt to contact the person(s) making the noise complaint within twenty-four (24) hours;
- conduct an investigation to determine the source of noise related to the complaint;
- if the noise is project related, take all feasible measures to reduce the noise at its source; and
- prepare a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts; and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to complainant's satisfaction.

Verification: Within thirty (30) days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Victorville Department of Planning and Development and with the CPM documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a thirty (30) day period,

the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 Prior to the start of project construction, the project owner shall submit to the CPM for review a noise control program. The noise control program shall be used to limit employee exposure to high noise levels during construction in compliance with applicable OSHA standards.

Verification: At least thirty (30) days prior to the start of rough grading, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

NOISE COMPLAINT RESOLUTION FORM

HIGH DESERT POWER PLANT PROJECT (97-AFC-1)
NOISE COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date complaint received: Time complaint received:
Nature of noise complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted:
Initial noise levels at 3 feet: _____ dBA Date:_____ Initial noise levels at complainant's property: _____ dBA Date:_____ Final noise levels at 3 feet: _____ dBA Date:_____ Final noise levels at complainant's property: _____ dBA Date:_____
Description of corrective measures taken: Complainant's signature: _____ Date:_____
Approximate installed cost of corrective measures: $ Date installation completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct: Plant Manager's Signature: _____ Date:

(Attach additional pages and supporting documentation, as required.)

NOISE-4 The project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to approximately 90 dBA measured at a distance of 1,000 feet. The project owner shall conduct steam blows only during the hours of 7:00 a.m. to 8:00 p.m. weekdays, and 8:00 a.m. to 8:00 p.m. weekends and holidays.

Verification: At least fifteen (15) days prior to the first steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer, and a description of the steam blow schedule.

NOISE-5 At least fifteen (15) days prior to the first steam blows, the project owner shall notify the principals of the Harold H. George and Shepard Schools, and the administrator of the SCIA Golf Course, of the planned steam blow activity, and shall make the notification available to area residents. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means, and shall include a description of the purpose and nature of the steam blows, the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within five (5) days of notifying these entities, the project owner shall send a letter to the CPM confirming that the school principals and the golf course administrator have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE-6 Upon the project first achieving an output of eighty percent (80%) or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey, utilizing the same monitoring site employed in the pre-project ambient noise survey, as well as an appropriate site near the project boundary, as a minimum. The survey shall also include the octave band pressure levels to ensure that no new pure-tone noise components have been introduced. If the results from the survey indicate that operation of the power plant causes noise increases in excess of 5 dBA (l_{eq}) at any sensitive receptor (residences, hospitals, schools, libraries or places of worship), additional mitigation measures shall be implemented to reduce noise to a level of compliance with this limit. No single piece of equipment shall be allowed to stand out as a dominant source of noise.

Verification: Within thirty (30) days after the project first achieves an output of eighty percent (80%) or greater of rated output, the project owner

shall conduct the above described noise survey. Within thirty (30) days after completing the survey, the project owner shall submit a summary report of the survey to the City of Victorville Department of Planning and Development and the CPM. Included in the report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits and a schedule, subject to CPM approval, for implementing these measures. Within thirty (30) days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 The project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted within thirty (30) days after the facility is in full operation, and shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations sections 5095-5100 (Article 105) and Title 29, Code of Federal Regulations, Part 1910. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within thirty (30) days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to the federal Occupational Safety and Health Administration (OSHA) upon request.

C. SOCIOECONOMIC RESOURCES

Under this topic, we evaluate any direct, indirect, or cumulative impacts the project may cause to local public services or infrastructure, and also examine any relevant community issues.

1. Summary and Discussion of the Evidence

The project site is located on a 25-acre parcel within the 5,350 acre SCLA. The parcel is currently owned by the Victor Valley Economic Development Authority (VVEDA).[28] It is within Victorville's city limits, and about three miles from commercial and residential development in Victorville and Adelanto. Because of their proximity, these two cities were considered as the "local area" for purposes of analysis. (9/30/99 RT 117; Ex. 1, section 5.6-2 to 5.6-3.) Their demographic composition is such that " environmental justice" concerns, while explored, were found not to constitute a potential issue. (9/30/99 RT 124-25,131-32; Ex. 87, pp. 302-04.)

The evidence of record contains analyses examining impacts to the local and regional areas due to construction and operation of the project. These impacts include those to population, employment, housing, public services, schools, and the economic base. Of these, testimony of record indicates that the key potential impacts would pertain to public services, schools, and the local tax base. (9/30/99 RT 99-101.)

The project will employ a maximum of approximately 370 unionized construction workers, and about 27 permanent operational personnel. The evidence of record establishes that the available labor pool can readily supply the project's workforce needs. (10/7/99 RT 16-18; Exs.1, section 5.6-12 to 5.6-13; 91.) Sufficient housing is available locally, and it is likely that the bulk of the workforce will be comprised of

[28] VVEDA is a Joint Powers Authority encompassing Victorville, Adelanto, Hesperia, Apple Valley, and unincorporated areas of San Bernardino County. (9/30/99 RT 115.)

area residents and commuters rather than of workers immigrating into the area. (9/30/99 RT 103, 123-24; Exs. 1, section 5.6-3 to 5.6-8; 87, pp. 5-7.)

The Victorville Police Department provides law enforcement services to the project area; average response time to the project site is about two minutes. The Victorville Fire Department provides fire protection, emergency medical services, and hazardous materials response. Fire Station 312 is closest to the project site, located about a mile away, with an average response time of two to three minutes. The Adelanto Fire Department would provide additional fire protection. (Ex. 87, pp. 7-8.) Three hospitals are available within a 10-mile radius of the project, with multiple additional medical facilities available in the cities of San Bernardino, Loma Linda, and Fontana. (Exs.1, section 5.6-9; 87, p. 8.) The evidence of record establishes that the HDPP project would not result in adverse impacts to local services. (Ex. 87, pp. 11-14.)

Five public school districts provide educational services to students in the Victor Valley area; all are operating at or above their design capacity. Applicant will be assessed developer fees which in turn will be distributed to various local districts. (Ex. 87, p. 9.) This factor, and the expectation that there will be little, if any, influx of workers with school-age children caused by the project indicate that local educational facilities will not be adversely impacted. (9/30/99 RT 114, 125-26, 130.)

The HDPP will also pay approximately $3.25 million annually in property taxes. (9/30/99 RT 132.) In addition, the project will generate various sales taxes, and pay other fees and assessments to local entities. (9/30/99 RT 160; Exs. 1, section 5.6-13; 87, pp. 14-17.)

On balance, the expert witnesses for the Applicant and the Staff concluded that the project would result in a degree of positive benefits to the area, and would not create any significant direct, indirect, or cumulative adverse socioeconomic impacts. (9/30/99 RT 104, 108, 135-36; Ex. 87, pp. 18-19.) This sentiment was echoed in public comment provided by the Mayor of Victorville, who also represented VVEDA and the Southern

California International Airport Authority (the entity responsible for the redevelopment of George Air Force Base; 10/7/99 RT 166.) This commenter opined that the HDPP would be a productive use for the site, provide over $100 million in tax revenues as well as inexpensive power for future industrial uses, and otherwise play a crucial role in the redevelopment of George Air Force Base. (10/7/99 RT 167-71.) CURE's witness agreed that the project would supply jobs, power for industry, and could lead to the creation of positive socioeconomic impacts. (10/7/99 RT 20.)

Intervenor Gary Ledford agreed that the project will create short-term economic benefits. (9/30/99 RT 139:12-14; Ex. 97, p. 3.) Mr. Ledford, a developer with experience in both residential and commercial undertakings, posited that the project's anticipated use of 4,000 acre-feet of water would deprive the region of long-term growth. (9/30/99 RT 121, 139.) He hypothesized that the water could be better used for the development of approximately 8,000 residences which, in turn, could generate thousands of jobs and, potentially, add $1 billion dollars annually to the local economy. (Ex. 97, pp. 3-4.)

While we address the water issues in the next portion of this Decision, we note at this point that we are unpersuaded by Mr. Ledford's assertions. The evidence of record does not establish that the level of development indicated by Mr. Ledford is other than speculative, or establish the effect that the sole factor of water would or would not play in such possible development. Moreover, Mr. Ledford apparently bases his contention on a belief that other types of development can create a greater level of socioeconomic benefit than can the HDPP and therefore should be the development of choice.

The accuracy of this position is not within our province to resolve. There is simply no requirement that a project such as the HDPP create a greater level of socioeconomic benefit than other possible projects. The relevant inquiry is much more discrete, i.e., whether the HDPP results in significant unmitigated adverse socioeconomic impacts. As we have summarized above, the evidence of record establishes that the project, as mitigated in the Conditions of Certification, will not result in any significant adverse

socioeconomic impact and that it will comply with applicable laws, ordinances, regulations, and standards, including local General Plan provisions intended to balance the area's growth and development. Therefore, based upon the weight of the evidence of record, we are not persuaded by Mr. Ledford's assertions.

FINDINGS and CONCLUSIONS

Based upon the persuasive weight of the evidence of record, we find and conclude as follows:

1. The High Desert Power Project will draw primarily upon the local labor force for construction and operation workers.

2. The High Desert Power Project will not cause an influx of a significant number of construction and/or operation workers into the project area.

3. The construction and operation of the High Desert Power Project will result in increased revenue from property and sales taxes, employment, and sales of services, manufactured goods, and equipment.

4. Sufficient housing is available in the project area to accommodate workers for the High Desert Power Project

5. Existing local police, fire fighting, and medical services are adequate to accommodate the High Desert Power Project.

6. The persuasive weight of the evidence of record establishes that construction and operation of the High Desert Power Project will not result in any significant adverse socioeconomic impacts.

7. Mr. Ledford's assertions that water potentially used by the High Desert Power Project for project cooling can and should be used for other types of development are speculative and unsupported by the persuasive weight of the evidence of record.

8. The Conditions of Certification below ensure that the High Desert Power Project will comply with the laws, ordinances, regulations, and standards contained in the pertinent portion of Appendix A of this Decision.

We therefore conclude that the High Desert Power Project will not result in any significant direct, indirect, or cumulative adverse socioeconomic impacts.

CONDITIONS of CERTIFICATION

SOCIO-1 The project owner and its contractors and subcontractors shall recruit employees and procure materials and supplies within San Bernardino County first, and Kern,Riverside, and Los Angeles Counties second unless:

- to do so will violate federal and/or state statutes;
- the materials and/or supplies are not available; or
- qualified employees for specific jobs or positions are not available; or
- there is a reasonable basis to hire someone for a specific position from outside the local area.

Verification: At least sixty (60) days prior to the start of construction, the project owner shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) copies of contractor, subcontractor, and vendor solicitations and guidelines stating hiring and procurement requirements and procedures. In addition, the project owner shall notify the CEC CPM in each Monthly Compliance Report of the reasons for any planned procurement of materials or hiring outside the local regional area that will occur during the next two (2) months. The CEC CPM shall review and comment on the submittal as needed.

SOCIO-2 The project owner shall pay the statutory school facility development fee, as required at the time of filing for the "in-lieu" building permit with the City of Victorville Building Department.

Verification: The project owner shall provide proof of payment of the statutory development fee in the next Monthly Compliance Report following the payment.

D. SOIL and WATER RESOURCES

Evidence presented for this technical topic area examined the project's potential impacts upon the soil and the water resources in the area. The analysis concentrated on whether construction and operation of the project would be likely to induce erosion and sedimentation, degrade surface and groundwater quality, or adversely affect local or statewide surface and groundwater supplies. We also explored whether the project's water supply plan would create any growth inducing impacts.

A. Soils

1. Summary and Discussion of the Evidence

Soils in the project area are generally deep, with low permeability and runoff. Surface textures are primarily sand with small amounts of clay and silt. All of the soils affected by the power plant and its appurtenant linear facilities have a high wind erosion potential. (Ex. 87, p. 3.) The soils and their erodability are depicted on the following table.

SOIL&WATER RESOURCES TABLE 1
Soils with Selected Characteristics Affected by the Project

Soil Name & Number	Percent Slope	Project Element(s)	Surface Texture	Runoff	Water Erosion Hazard	Wind Erosion Hazard
Bryman 105	2-9	Water & Gas Pipelines	Sand	Slow	Slight	High
Cajon 113	2-9	Water Pipeline	Sand	Slow	Slight-Moderate	High
Cajon 114	9-15	Water Pipeline	Sand	Slow	Slight-Moderate	High
Haplargids/ Calciorthids Complex 130	15-50	Gas & Sanitary Sewer Pipelines	Loamy Fine Sand to Sand	Medium-Rapid	Moderate-High	Moderate-High
Mohave 150	0-2	Water, Gas & Sanitary Sewer Pipelines, Power Plant	Loamy Sand	Medium	Slight	High

Source: Exhibit 87, p. 3.

Construction activities may require significant disturbances such as excavation, grading, and earth moving. The evidence indicates that, without appropriate mitigation measures, wind erosion during construction activities could be as high as five tons per acre per year. (Ex. 87, p. 11.) Intense storms are common in the Mojave Desert and can cause water erosion. This is especially true where the construction of linear facilities crosses natural drainages. Unprotected surfaces can also continue to erode from the forces of wind and water during project operations. Similarly, an increase in the amount of impervious surfaces can increase runoff, which in turn leads to erosion of unprotected surfaces. (*Id*.)

The Conditions of Certification below (**SOIL & WATER-16**) require Applicant to submit an "Erosion Control and Revegetation Plan." This plan will address appropriate mitigation measures for both the power plant and the associated linear facilities. Included will be methods to control storm water runoff through the use of silt fences and straw bales, dust control measures such as the use of gravel on roads, and measures to protect stockpiled soil and to prevent sediment from reaching adjacent drainages. Permanent erosion control measures will include revegetation, as well as monitoring measures and remedial actions for failed revegetation efforts. (Ex. 87, p. 20.) Applicant must also comply with provisions of the State Water Resources Control Board's "General Construction Activity Storm Water Permit" (**SOIL & ~~Water~~WATER-15**) and CDFG's "Streambed Alteration Permit" which also specify methods of reducing erosion, sedimentation, and other water quality impacts from project related activities in desert washes and streams. (Ex. 87, pp.11, 56; see also Exs. 8, 40, 42.) Erosion concerns are minimal in the event of facility closure due to the lack of cut and fill slopes. (Ex. 87, pp. 3, 20.) The evidence persuasively establishes that the HDPP is unlikely to cause significant erosion and sedimentation impacts. (Ex. 87, p. 58.)

The power plant site is on the Air Force Installation Restoration Program (IRP) Site FT-20. Sampling at this site indicates the presence of low levels of chlorinated solvents and low concentrations of total petroleum hydrocarbons. (Ex. 87, pp. 3-4, 6.) The EPA

and the Lahontan Regional Water Quality Control Board expressed concerns that construction of the power plant could limit site access and possibly impede analysis and any necessary cleanup. (Ex. 140; 10/8/99 RT 98-99.) Clarifying testimony indicated, however, that EPA would assist the Air Force in accomplishing these tasks,[29] that project development would not likely interfere with these efforts, and that no site relocation or design alterations would be required. (10/8/99 RT 99, 144.)

B. Water Resources

This was the most highly contested area in these proceedings. Applicant, Staff, CDFG, and CURE believe that, with implementation of appropriate Conditions of Certification, the HDPP will create no significant adverse impacts to the area's water resources. An Intervenor, Mr. Gary Ledford, strongly disputes the propriety and the impacts of the project's proposed water supply plan. He does not oppose development of the project, *per se*, but rather basically contends that allowing the project to use imported water for its intended consumptive use "…gives HDPP a greater amount of water at a reduced rate than other producers in the Basin and thus creates an inequity." (Ledford's "Brief on Reopened Hearings and Revised Comments", March 7, 2000, p. 20; see also 1/27/00 RT 24.) Several public commentors echo Mr. Ledford's concerns. (See, e.g., 1/27/00 RT 51-56; 2/18/00 RT 78, 90-92.)

The overall record (both evidentiary and non-evidentiary) contains extensive documentary, testimonial, and non-testimonial explanations of these disparate positions as they relate to water use within the basin, broader regional water issues and the use of imported SWP water in general, and the effects of the project upon future growth. While we have considered all of these aspects,~~. W~~we do not provide a complete recital of all competing contentions herein.

[29] We note, however, that in its February 23, 2000 comments on the federal draft EIS, US EPA expressed concerns "…regarding consistency of the proposed project with ongoing remedial cleanup of contaminated groundwater at the former George AFB." (Comments, p. 2.) USEPA basically recommends that the Air Force examine any groundwater plume under the proposed site prior to plant design and construction, and that the federal agencies establish a firm schedule and funding commitment to achieve this task as part of the final EIS. (*Id.*)

Rather, we summarize and address only those points which we find most salient and necessary to understand and objectively evaluate the evidence, and to formulate our decision.

1. Summary of the Evidence

i) Hydrology. The Mojave River is the major surface drainage within the project vicinity, flowing approximately one mile east of the proposed power plant site. Surface flows in the project area typically occur only during heavy rainstorms, except at areas known as the Upper and the Lower Narrows. Northeast of the site, the Victor Valley Wastewater Reclamation Authority's wastewater treatment plant discharges effluent to the Mojave River. Base flows in the River have markedly declined over the last 20 years. (Ex. 87, p. 4.)[30]

The Mojave River Groundwater Basin is composed of two primary water-bearing units herein referred to as the "Mojave River Alluvial Aquifer" and the "Regional Aquifer." The former aquifer occupies the channel of the Mojave River and forms a narrow band of permeable sediments. In the project area, these sediments are less than a mile wide. This aquifer supports both riparian vegetation and highly productive wells. The latter aquifer underlies the Mojave River Alluvial Aquifer and the project area. These aquifers may be hydraulically connected, but the extent of any such connection is not fully understood. (Ex. 87, p. 5.)

The Mojave River Groundwater Basin is severely overdrafted. This essentially means that more water is pumped from the basin than is replaced. This overdraft condition has been characterized as "severe and critical". (10/8/99 RT 139: 5-7.) The Mojave Water Agency (MWA) is the primary local water agency responsible for meeting the area's water needs. Its Master Plan (1994; Ex. 110) estimates that, given historic patterns of growth and water consumption, by the year 2000 overdraft within the Alto Subarea will

[30] "Base flow" essentially comprises the natural flow of the Mojave River at the Lower Narrows, plus the discharge from the wastewater reclamation facility. (10/7/99 RT 324-25.)

be 29,800 acre feet of water. This may increase to 45,400 acre feet by 2020. Basin wide, the overdraft could reach 92,800 acre feet by the year 2015. These amounts do not, however, consider the importation of State Water Project (SWP) water. (Ex. 87, p.5.)

Recharge of the basin occurs primarily from infiltration of rain runoff from the San Bernardino and San Gabriel Mountains. Water from irrigation and septic systems also comprises a source of recharge. (Ex. 87, pp. 4-5.) Full importation of MWA's entitlement to 75,800 acre feet of SWP water would lessen the amount of basin overdraft. No SWP water was, however, imported during 1999 due to financial limitations.[31] (EX. 87, p. 5.) ~~This overdraft condition has been characterized as "severe and critical". (10/8/99 RT 139: 5-7.)~~

Groundwater quality in the project vicinity meets state and federal drinking water standards. (Ex. 87, p. 6.)

ii.) Basin Adjudication. In response to a lawsuit by the City of Barstow and the Southern California Water Company filed in 1990, ~~the Mojave Water Agency (~~MWA~~)~~

[31] California law reflects an interrelationship between state and local entities concerning water supply and use. The Department of Water Resources (DWR) operates the SWP and provides water to 29 contracting agencies. Although an agency may have rights to a given amount of SWP water, DWR annually assesses the state's water resources then determines the supply of SWP water in general and the actual amount which is available to its contractors. DWR's annual determination of water supply for the SWP factors in water needed for environmental considerations and other regulatory constraints. Recent deliveries of SWP water have averaged in excess of 2.1 million acre feet. (Ex. 87, pp. 15-19.) Contractors must pay DWR for water actually purchased. MWA has contracted with DWR since 1963.

DWR not only supplies water to contracting agencies, but also prepares the California Water Plan, which is updated every five years. (Water Code, §§ 10004, et. seq.) The California Water Plan discusses, among other things, "…various strategies…that may be pursued in order to meet the future needs of the state." (Water Code § 10004.5.)

The most recent California Water Plan (Bulletin 160-98) was adopted in 1998. In order to assist understanding the statewide perspective on various water issues, including water supply and management, we took official notice of this document pursuant to 20 Cal. Code of Regs., § 1213.

The Water Code also expressly recognizes that "[m]any water management decisions can best be made at a local or regional level" in furthering the beneficial use policies in Article X, Section 2, of the State Constitution. [Water Code § 380 (c), (d).]

requested the Riverside Superior Court (Case No. 208568) declare the natural water supply of the Mojave Basin inadequate to meet existing water demand and that the court establish water production rights for individual producers throughout the basin. Negotiations among various parties resulted in a "stipulated agreement" and further judicial proceedings. In 1996, the Superior Court adopted the measures included within the stipulated agreement.[32] This judgment was then brought before the 4th Circuit Court of Appeal.[33] The Court of Appeal upheld the judgment for the stipulating parties while also holding that the non-stipulating parties (including Mr. Ledford's Jess Ranch; Ex. 99, p. 17) were exempt from the lower court's decision[34] ~~(Court of Appeal Case Nos. E017881/E018923/E018023 and E018681; see also Ex. 112).~~ The appellate court decision was then appealed to the California Supreme Court (Docket No. S071728) where it is presently pending. (Exs. 87, pp. 8-9; 112.) The Supreme Court decision could affect the existing water supply regimen, and Mr. Ledford argues that we should delay our decision pending action by the Court. (Ledford's comments on PMPD, January 6, 2000, p. 3.)

Because of this lengthy and continuing litigation, and the interpretations advocated by various parties, we do not believe it prudent or possible to explain in detail all the nuances of the various court decisions. However, we believe the following assists in understanding the water issues in the present case.

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[32] This is referred to as the January 10, 1996 "Judgment After Trial" or the "adjudication".

[33] This case is City of Barstow *v.* Mojave Water Agency, 75 Cal.Rptr.2d 477 (Cal.App.4 Dist. 1998).

[34] The City of Barstow decision includes the following characterization of the "physical solution" adopted by the trial court:

> 'The purpose of the judgment is to (1) develop means to conserve local water, (2) guarantee that downstream water producers will not be adversely affected by production upstream, and (3) raise money to purchase supplemental water supplies. *The judgment does not place restrictions on the quantity of water a producer may pump.'* (City of Barstow, *supra,* at 484; italics in original.)

Prior to the adjudication, MWA served only as a wholesaler of water in the area. The Superior Court, however, designated MWA as the "watermaster" for the Mojave Basin.[35] Thus, MWA currently fulfills both roles. (10/8/99 RT 28.) As watermaster, MWA calculates annual baseflow and controls all extractions, recharge, and storage in the underlying groundwater basin for parties stipulating to the court judgment. (10/7/99 RT 269, 300-01, 323; 10/8/99 RT 28-29.)

The adjudication divided the Mojave Basin into five distinct, but hydrologically interrelated, subareas. The court found each of these subareas to be overdrafted due to the water demands of all producers within a particular area. The HDPP is located within the Alto Subarea. Within each of the subareas, the adjudication established a free production allowance (FPA) based upon the producers' maximum water production between 1986 and 1990. If a water producer produces water in excess of its FPA, then it must provide replacement water, usually through a payment to the MWA. (Ex. 87, p. 9.)

One expert witness explained it thus:

> "... the purpose of the adjudication was to develop a revenue supply for [MWA] to purchase water. That revenue supply is generated as people produce, pump in excess of their free production allowance, they have to pay a replacement assessment to the watermaster."
>
> The watermaster then gives the money to [MWA] to purchase State Water Project water for groundwater recharge." (10/8/99 RT 38: 19 to 39: 2; see also Ex. 87, pp. 9-10.)[36]

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[35] "Judgment After Trial," p. 18.

[36] The testimony ~~also~~ defines "free production allowance" as "... the amount of water that a groundwater pumper can produce without being subjected to a replacement obligation or replacement assessment." (10/8/99 RT 62: 7-11.) "Replacement water" is basically "...any water that you pump out of the ground which is more than your base right. You' re obligated…to pay for replacement water, water above…your right that you produced…". (10/7/99 RT 301: 7-11.)

The appellate court decison also explains that a producer's "base annual production right" is the "relative right of each producer to the free production allowance within a given subarea, expressed as a percentage of all producers' base annual production in the subarea." (City of Barstow at 503.)

Such rights may be sold or otherwise transferred. This decision notes that while Jess Ranch claimed that 18,625 acre feet of water should be the basis for determining its base annual production right, the trial

The court decisions do not prevent the extraction or use of groundwater, or the installation of new wells. The evidence of record establishes that a producer may produce water in excess of its FPA and that MWA may supply water to the HDPP or any other project even though the current overdraft exists. (10/7/99 RT 329, 341; Ex. 87, p.9.)

iii.) Applicant's Basic Water Plan. Both the 678 MW and the 720 MW configurations proposed by Applicant will use substantial amounts of water for their respective cooling needs. The larger configuration would use approximately 4000 acre-feet annually, with the smaller consuming approximately 3300 acre-feet each year. (Ex. 87, p. 12.) A relatively small degree of potable water will also be required. [37]

Applicant proposes to use State Water Project (SWP) water for its cooling and makeup water needs. The SWP water would be conveyed to the project site via a two and one-half mile long pipeline which would interconnect with the Mojave River pipeline.[38] (10/8/99 RT 23.) The SWP water would either be ~~either~~ used directly at the power plant or, after treatment at the power plant's water treatment facility, be injected for storage through a series of seven wells located approximately six miles from the plant. This injection for storage is characterized as creating a water "bank". This storage would enable the project to procure SWP water, when it was available, for later use. (10/7/99 RT 301.) As necessary, this stored water would then be pumped and returned to the power plant for cooling uses. (10/7/99 RT 176-77, 182, 212, 261; 10/8/99 RT 54-55.)[39]

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court calculated "a base annual production of 7,480 acre-feet on a consumptive use basis." (*Id.*) The appellate court further observes that:

> The effect of reducing the free production allowance attributable to Jess Ranch is to substantially decrease the income available to Jess Ranch from sale or transfer of this asset. (*Id.* at 506.)

[37] This section focuses on the supply and provision of cooling water; no issues concerning the supply of potable water were raised during these proceedings.

[38] The Mojave River line extends from the California Aqueduct, west of the City of Victorville.

[39] State Water Project water which is used directly for cooling purposes does not require treatment. Conversely, injection of this same water into the underlying aquifer requires treatment so that the injected water will meet applicable water quality standards. (10/7/99 RT 213; 10/8/99 RT 54-55.)

Under its proposal, Applicant would use only imported SWP water for plant cooling purposes. (10/7/99 RT 184: 4-10.)

Effectuation of this plan requires involvement of the following entities (see also Ex. 138):

- MWA -- as watermaster and wholesaler, MWA supplies SWP water, if available, to a user on an annual basis. MWA may not provide this water directly to the project, however. In the present case, water for the project would be provided to the City of Victorville. (10/7/99 RT177; 10/8/99 RT 29.)

- City of Victorville -- applies to MWA for SWP water on behalf of the project. The City delivers the water to the project for direct use or treatment via the new pipeline between the project site and the Mojave River pipeline. (10/7/99 RT177; 10/8/99 RT 24.)

- Victor Valley Water District (VVWD) -- injects the SWP water in its well field for storage, pumps this stored water, and delivers it to the power plant when sufficient SWP water for direct use is unavailable. Applicant will pay for, and VVWD will construct, own, and operate, the seven wells associated with the HDPP. (10/7/99 RT 177-78, 212, 284: 1-3, 311; 10/8/99 RT 26.)

Procurement of the project's water supply requires a series of contractual agreements.(Ex. 139.) These are as follow:

- The City of Victorville, on behalf of HDPP, will annually apply to MWA (in its capacity as wholesale supplier) per Ordinance 9 for SWP water. Allotments by MWA are considered on a yearly basis and are interruptible. (10/7/99 RT 335.) The City has applied for SWP water from MWA. (10/7/99 RT 178: 16-23; 10/8/99 RT 29: 20-22; Ex.. 137.) This application remains "open". (10/7/99 RT 333.)

- HDPP must contract with the City for delivery of the SWP water. The testimony indicates that while the final agreement has not yet been executed, the parties have agreed in concept. (10/7/99 RT 178: 23 to 179: 3.)

- VVWD must enter into two contracts. First, VVWD must contract with MWA (in its capacity as watermaster) in order to store the SWP water; this storage agreement is being developed. (10/7/99 RT 178: 9-14, 342:12 –20, and 344: 4-10; 10/8/99 RT 29: 6-11.) Second, VVWD and HDPP must enter into an "aquifer storage and recovery agreement" in order to allow Applicant to use VVWD's facilities to inject the SWP water, as well as to draw upon the injected water when needed for power plant cooling.

(10/7/99 RT 178; 10/8/99 RT 29-30.) Applicant provided an executed version of Tthis second agreement has not yet been completed. [40]

Expert testimony of record from Applicant and Staff, and supported by representatives of MWA and VVWD, indicates that the proposed water supply plan is consistent with the terms of the adjudication summarized above. (10/8/99 RT 329: 10-13; Ex. 130, p. 2.) Mr. Ledford, however, contends that provisions of the water supply plan violate Article X, section 2 of the California Constitution,[41] and that Applicant should be required to purchase two acre feet of water for every acre foot the plant consumes in order to provide excess water for aquifer recharge. (Ledford's comments on PMPD, January 6, 2000 pp. 11-13; Brief on Reopened Hearing, March 7, 2000, p. 19.) Several commentors support his basic position.

iv.) Potential Impacts and Mitigation. Evidence presented by Staff and CDFG establishes that, unless adequately mitigated, the project's pumping of stored water could cause a decline in river bank discharges and base flows, or in the water level of the Mojave River Alluvial Aquifer. This in turn would result in adverse effects upon riparian vegetation and, ultimately, species dependent upon this vegetation.[42] (10/8/99 RT 107; Ex. 93, p.2.) Mr. Ledford contends that providing SWP water as currently proposed for the HDPP will prevent MWA from curing the overdraft situation in the basin since the project will not provide excess water for recharge. (10/8/99 RT 7, 64-65, 75.)

Applicant, Staff, and CDFG developed a modeling regimen to assess project impacts. The evidence establishes that the model was designed to represent the major hydrogeologic properties of the groundwater system, as well as the hydraulics of the

[40] This is essentially what has been referred to as the "will serve" letter. A draft of this agreement was identified as Exhibit 133 during the evidentiary hearings. (10/7/99 RT 178:6-18, 179: 4-5; see also 10/7/99 RT 261; 10/8/99 RT 30: 6-15, 258.) Subsequent discussions (summarized herein) identified concerns with its provisions and Applicant withdrew the draft (10/7/99 RT 302.) The executed version was discussed at the February 18, 2000 hearing and received as Exhibit 145A final version has not yet been submitted.

[41] This provision is entitled: "Conservation of Water Resources; restriction on riparian rights", and basically contains the "beneficial use" policies of the state Constitution.

[42] The Judgment After Trial provides compensation for biological resources impacts to riparian areas (p. 21).

interaction with the Mojave River. It employed conservative ~~"worst-case"~~ assumptions based upon the best available data and accounted for the pumping and injection activities of the project in order to ascertain any project related changes in the groundwater levels or the stream flow of the Mojave River. The model also considered the loss of injected water through dissipation. (10/7/99 RT 228-29, 231; 10/8/99 RT 103, 106-09; Ex. 87, pp. 27-56.) This modeling analysis considered only the impacts of the HDPP; the expert testimony of record indicates that this approach is appropriate. (10/7/99 RT 229-30, 327; 10/8/99 RT 42, 104, 119.) No evidence was presented which persuasively refutes the validity of the modeling results.

These modeling results establish that the project's water supply plan, if properly defined in Conditions of Certification, will not cause or contribute to the depletion of water resources in the area and will actually result in a slightly beneficial effect. (10/7/99 RT 238-239, 328-29; 10/8/99 RT 132-33, 145-46.) To ensure these results, several witnesses explained what the Conditions of Certification must require. (see Ex. 142.) Briefly, the key provisions are:

- the HDPP will use only imported SWP water for cooling uses; other water may not be substituted for this purpose (10/7/99 RT 272:7-13, 275:5-12, 291:16-19, 306:13 to 307:3);

- at all times, including prior to commencing operations and at the conclusion of operations, a balance of 1000 acre-feet (after accounting for dissipation) must be stored in the project's water "bank" (10/7/99 RT 199, 206, 209; 108/99 RT 116);

- if at any time the water balance in the bank is at 1000 acre-feet, the HDPP must shut down (10/7/99 RT 208; 10/8/99 RT 26, 122, 124);

- though the annual amount of ~~imported~~ SWP water imported ~~by~~ for the project will vary, no later than the end of five years after the commencement of operations a total of 13,000 acre-feet of water must be injected into the groundwater system (10/7/99 RT 337; 10/8/99 RT 25, 113-14);

- dissipation of injected water is factored in and aquifer tests will be conducted annually, or if necessary quarterly, to monitor groundwater behavior; this monitoring will use the best data available (10/7/99 RT 261, 270; 10/8/99 RT 147-51; Ex.. 131, p. 2);

- up until the last three years of project operation, stored water that is removed from the bank must be replaced by injecting additional SWP water (10/7/99 RT 201-02, 262; 10/8/99 RT 115).

The testimony confirms that Applicant can implement its water plan under the provisions of such conditions. (10/7/99 RT 181: 1-4.) With these restrictions and the importation of SWP water for project use, Staff and CDFG conclude that the HDPP would cause no impacts to the area's water resources, either to the Mojave River Alluvial Aquifer, Mojave River base flows, downstream water users, or, on average, to water levels in nearby wells. (10/8/99 RT 107-09; Ex. 87, p. 25.) In the opinion of these parties, the HDPP, as mitigated, will be "water neutral" and will not contribute to any decline in the underlying aquifer regardless of the level of any future redevelopment which may occur at George Air Force Base. (10/8/99 RT 145: 9-13; Ex. 131.) Thus, all parties except Mr. Ledford agree that, with the implementation of appropriate Conditions of Certification, the HDPP will not create or contribute to any significant direct or cumulative adverse environmental impacts upon ~~the area' s~~ water resources. (10/7/99 RT 22, 159; Exs. 87, p. 58; 131.)

After reopening the evidentiary record, the Committee received evidence concerning any potential "growth inducing" impacts associated with the HDPP. [See, 14 Cal. Code of Regs., § 15126.2(d).] The principal concern expressed by Staff, CDFG, and Mr. Ledford revolved around whether the HDPP's water supply plan, including the Aquifer Storage and Recovery Agreement with VVWD (Agreement; Ex. 145), would result in, or remove an impediment to, a level of growth which had not been included in the project analysis. (See, e.g., Staff's March 7, 2000 Brief, pp. 1-4.) More specifically, Staff, with support from CDFG, opined that the water supply plan could allow VVWD to treat and inject water for later sale which, in turn, could remove an impediment to future growth. (2/18/00 RT 191-192; 200-201, 204.) Mr. Ledford was also similarly concerned that the project facilities would provide VVWD with additional capacity which could be used to serve, or expand, its customer base. (2/18/00 RT 222-23, 226-27; Exs. 168, p.5; 172, p.4.)

Applicant's basic view is that the requirement to analyze growth inducing impacts must be predicated upon a real expectation – not merely a speculation – that VVWD will use

the project's water facilities to induce, or remove an impediment to, a level of growth. (2/18/00 RT 104-114; see also, Applicant's March 7, 2000 Brief, pp. 8-10.) Applicant points out that it has reduced the term of the Agreement with VVWD to 50 from 80 years[43] (2/18/00 RT 96), and that various provisions of the Agreement assure that VVWD will not use the water supply plan and project water facilities to expand District services. While the Agreement states that VVWD will own and operate the project's water wells, pumping station, and pipeline (Ex. 145, section 1), testimony from Applicant's witness, corroborated by testimony from a representative of VVWD, indicates their mutual interpretation is that VVWD cannot rely on these facilities to meet any load growth or existing demand in the District's service territory. (2/18/00 RT 99, 106, 134, 155.) These witnesses further indicated that, in addition to supplying the HDPP, VVWD could use the project wells to displace pumping from other wells closer to the Mojave River (2/18/00 RT 130, 138, 153, 163-64), or to inject water to recharge the groundwater basin (2/18/00 RT 134; Ex. 145, section 8.3), but not to provide domestic water supply to customers (2/18/00 RT 101.)

The water treatment plant will be owned and operated by Applicant (2/18/00 RT 160, 216-17) and will, when not being used to treat SWP water for injection into the project's water bank,[44] have capacity available to treat additional water. (2/18/00 RT 158:11-18.) The Agreement does not specifically address use of this available capacity (2/18/00 RT 58:11-18), but the testimony indicates that VVWD could purchase SWP water from MWA, and then use the facility to treat that water for injection and aquifer recharge. (2/18/00 RT 101, 120.) While, once treated and injected, this water *could* be withdrawn and used for domestic purposes (2/18/00 RT 130), the testimony indicates that any such treated water would be used solely for groundwater recharge. (2/18/00 RT 129,

[43] Although the assumed life of the power plant, for purposes of analysis, is 30 years, uncontradicted testimony from Applicant's witness establishes that the longer term is necessary for project financing. (2/18/00 RT 97.)

[44] Injected water, including that stored and eventually used for project cooling, must be treated to meet applicable standards. (2/18/00 RT 199:2-6, 212:15-21.)

166:2-6.) Additional, non-project water storage by VVWD would require a separate storage agreement with MWA, subject to CEQA review by that agency.

The other parties do not directly challenge the foregoing. Rather, their position is essentially that VVWD's use of the water treatment plant, wells, and associated facilities could remove an impediment to growth (the effects of which have not been analyzed) unless appropriate restrictions are imposed. (2/18/00 RT 192.) Staff, with CDFG's support, therefore proposed four Conditions of Certification in addition to those which were reflected in the December 1999 PMPD. In summary, these new Conditions would require:

- reevaluation of the groundwater study in thirty years should the project wish to continue operation (proposed as Condition 6.d);
- Applicant to maintain ownership of all project water facilities, including the wells (proposed as Condition 7);
- that continuing operation of the water facilities be addressed in the project closure plan (proposed as Verification to Condition 6); and
- that VVWD's use of the water treatment facilities be limited to emergency Conditions (proposed as Condition 17.4; 2/18/00 RT 192-93; Ex. 146A, p.5.)

At the February 18, 2000 hearing, Staff and CDFG indicated that these Conditions would adequately limit the potential for the occurrence of growth inducing impacts. (Ex. 146A, p. 3; see also, Staff's March 7, 2000 Brief, p.5.) CDFG also proposed clarifying changes to the Conditions in the December 1999 PMPD. (CDFG's February 16, 2000 Comments.) [On March 24, 2000, after circulating proposed revisions to Conditions 7 and 17.4 to all parties for review and comment, Staff provided alternative language for consideration. These revised Conditions do not attempt to introduce new evidence into the record, but rather are clarifying revisions based upon the evidence of record through the February 18 hearing. (Staff proposed Alternative Soil & Water Resources Conditions, March 24, 2000). The net effect of the proposed revisions is to require Applicant to retain operational control of the water treatment plant, rather than the plant and wells, and to remove the restriction regarding VVWD's use of the water treatment facility to emergency circumstances as indicated in 17.4. Instead, the clarifying

revisions contain a new Condition of Certification (**SOIL&WATER-19**) which specifically requires Applicant to limit VVWD's use of the treatment plant and recognizes that use of the water treatment facility for non-project purposes by VVWD requires a separate storage agreement with MWA, which is subject to further CEQA review.]

At the February 18, 2000 hearing, Applicant opposed two of the four newly proposed conditions: requiring it to retain ownership of the wells (proposed as Condition 7; see Ex. 146A, p. 11); and limiting VVWD's use of the water treatment facility to emergency circumstances, not to exceed fourteen days per calendar year (proposed as Condition 17.4; see Ex. 146A. p. 16; see also 2/18/00 RT 98-99). VVWD opposed the new Staff Conditions in general, but most stridently the limitation upon its use of the water treatment facility. (2/18/00 RT 159, 161.) The VVWD representative noted that the governing Board had thrice adopted the Aquifer Storage and Recovery Agreement (Ex. 145), with various provisions to maintain consistency with proposed Conditions of Certification, and that the acceptability of further modifications at that point was uncertain. (2/18/00 RT 148-51.)

Witnesses presented by Mr. Ledford did not address particular provisions of the proposed Conditions of Certification. Rather, these witnesses emphasized that the water supply pipelines were larger than needed to provide 4000 acre feet of water for plant cooling. (2/18/00 RT 221-23, 226; see also Exs. 168, 172; 1/27/00 RT 26.) Additionally, one witness testified that water treatment plants are modular and can readily be expanded (2/18/00 RT 226.) In the opinion of these witnesses, this combination of factors could provide VVWD with access to a presently unavailable source of treated water which, in turn, VVWD could use, presumably to meet additional customer needs and thus result in growth inducing impacts. (2/18/00 RT 222-23, 227; see also, Ledford's March 7, 2000 Brief, p. 4.)

2. Discussion

Based upon the presentations at the February 18, 2000 hearing, it appeared Applicant and VVWD continued to oppose the imposition of certain additional Conditions of Certification supported by Staff and CDFG. This situation has, however, apparently changed. [45] However, to our knowledge, Mr. Ledford continues to contest~~s~~ the sufficiency of the proposed mitigation measures and Conditions of Certification ~~proposed by Staff and CDFG~~ for a myriad of reasons, ~~but~~and fundamentally contends that, since evaporative cooling will be a 100 percent consumptive use, the HDPP must provide replacement water to the basin or be required to use dry cooling.[46] (Ledford's 11/16/99 Reply Brief, p. 7; see also 1/5/00 PMPD comments, pp. 12-13 and 3/7/00 Brief, pp. 5-7.)

Mr. Ledford contends that MWA's primary duty is to cure the overdraft in the water basin and that it is violating this duty by potentially providing SWP water for use at the HDPP. (10/8/99 RT 7-8, 73, 177-80.) In his view, MWA should only supply water to HDPP at a "2 for 1" rate (i.e., require HDPP to purchase 8,000 acre feet annually) so that the excess water could be used for aquifer recharge and thus ensure that the power project is placed on an "equitable footing" with other water users. (1/27/00 RT 24; 1/5/00 PMPD comments, pp. 12-14.)[47] In rejecting this contention, the Committee presumed that other governmental entities would act properly and in conformity with their own rules. Mr. Ledford continues to dispute this notion, inferring that recent local political activities demonstrate the irregularity of MWA's potential actions. (10/8/99 RT 14.) (See Ledford's 11/16/99 Reply Brief, p. 5.)

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[45] In its post-hearing comments (March 7, 2000) , VVWD indicated its willingness to "enter into an agreement with the CEC to insure that it [VVWD] complies with pertinent Conditions of Certification." (p. 2.) Staff provided revised proposed Conditions, and Applicant also filed an additional response, on March 21, 2000, indicating its support for the revised Conditions.

[46] This latter point is addressed in the next subsection of this Decision.

[47] In order for MWA to impose the " 2 for 1" ratio , its Ordinance 9 must be changed. (10/7/99 RT 338.) This would require a separate CEQA analysis. (10/7/99 RT 339.) MWA recently considered, and rejected, revising Ordinance 9 and potentially adopting a "2 for 1" requirement.

Here we address the most germane contentions and summarize how, in our opinion, the Conditions of Certification ensure that the HDPP water supply plan will not result in the creation of significant adverse impacts to water resources. In this regard, there is simply no credible reason for us to question the propriety of any future action MWA may take. We note that the evidence of record establishes that MWA is the watermaster responsible for managing the water basin and may, consistent with the terms of the adjudication, continue to provide water to qualified users. The law (Water Code § 380, et. seq.) specifically recognizes the important water managment role of agencies such as MWA.

We also note that the evidence of record establishes that MWA, through its existing agreements with the Department of Water Resources and as a water wholesaler, is entitled to 75,800 acre-feet of SWP water, as available, annually. MWA has never taken over 17,000 acre-feet of this annual entitlement. (10/7/99 RT 183; 10/8/99 RT 22-23, 31.) ~~The evidence t~~Thus, ~~indicates that~~ MWA has access to a considerable amount of SWP water which it has not used. However, the evidence also indicates that it lacks available revenues to purchase this water and use it to address the overdraft. (10/8/99 RT 33, 37-38; Ex. 87, p. 5; Ex. 130, p. 3.) This suggests that revenues provided for purchase of SWP water for the project will also allow MWA to purchase additional water for recharge. (*Id*.)

Regardless of the amount of water available, however, the ~~significant~~ key point is that the project's use of cooling water will not result in any significant adverse environmental impacts since, without sufficient *imported* water, the project cannot operate. This requirement is memorialized in Condition **SOIL&WATER-1**, below. Whether or not MWA chooses to, or can, provide this water, consistent with its applicable ordinances, is not our water management decision and is a risk borne by this privately funded Applicant in a competitive marketplace. (See 1/27/00 RT 47-48.) For our purposes, and as Staff points out, it is important only that the project's water plan not interfere with

MWA's ability to address the overdraft. (Staff Brief 11/19/99, p. 2.) The evidence establishes that it does not.

Mr. Ledford asserts that the present power plant project is part of a larger plan for reuse of the former George Air Force Base and that we must therefore examine the level of development and water needs associated with such potential reuse. (See Ledford 11/3/99 Opening Brief, p. 3; 1/5/00 PMPD comments, pp. 5-6.) The Committee rejected this contention in declaring that the "project" for purposes of our review is the power plant and its appurtenant facilities. (10/8/99 RT 13-14.) As explained in the "Project Description portion of this Decision, *supra*, we cannot agree with Mr. Ledford's characterization of the scope of the project. Moreover, we note that the evidence summarized above persuasively establishes that, regardless of any level of future development, the HDPP project will essentially be "water neutral" insofar as the local aquifers are concerned since it will use only imported SWP water for cooling purposes.[48]

Mr. Ledford also argues that use of cooling water by the project is inconsistent with State Water Resources Control Board Policy 75-58. (Ex. 124.) We explored the applicability of this statewide Policy during the hearings. It suggests limitations, where feasible, upon the use of fresh inland waters for power plant cooling. The evidence shows that Applicant assessed the use of reclaimed water[49] and FPA allotments as alternative sources of cooling water. CDFG opposed the use of these sources, however, since such use would take water from the basin and potentially cause adverse impacts to riparian vegetation. (10/7/99 RT 151-55; see also Exs. 14, 15, 65.) Under these circumstances, and in the opinion of the expert witnesses, the project's use of SWP water is consistent with Policy 75-58. (10/7/99 RT 216-18, 329-30; 10/8/99 RT 165-67.)

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[48] We address potential growth inducing impacts of the project *infra*.

[49] Somewhat paradoxically, Mr. Ledford raised concerns that the project would use reclaimed water from the Victor Valley Waste Water Authority. (2/18/00 RT 140-43), and desires a Condition preventing use of the wastewater. (Ledford's 3/7/00 Brief, p. 18.) Applicant stated it was already precluded from using

~~Finally~~Overall, the key concerns in evaluating Applicant's water supply plan are ensuring: 1) that only imported water be used for the project so that the project not cause groundwater basin to be further depleted; and 2) that the water plan be used to supply water for only the HDPP project. It is axiomatic that the water supply agreements previously summarized are required in order to supply project water~~. Of these agreements, the executed aquifer storage and recovery agreement with VVWD (the "will serve" agreement) is critical in persuading us that Applicant has addressed the concerns mentioned above.~~

The December 1999 PMPD noted that t~~T~~he submission of ~~this~~a final Aquifer Storage and Recovery ~~a~~Agreement (Agreement) with VVWD ~~is~~would be necessary ~~for us~~to determine whether complying with the terms of an ancillary contract ~~w~~could result in the creation of environmental impacts which have not been analyzed and appropriately mitigated. Staff and CDFG ~~apparently~~ shared these concerns since pumping from VVWD wells closer to the Mojave River could adversely impact riparian vegetation. (10/8/99 RT 100-01; Staff's 11/5/99 Brief, p. 4.) ~~Moreover, it is our~~The initial PMPD also reflected the intent that this imported water be used solely for the HDPP project, and that~~. A~~ an executed ~~a~~Agreement should ~~thus also~~ allay concerns voiced during the hearings over whether the water imported for use at the HDPP could be put to other uses, or potentially create growth inducing impacts. (See generally, 10/7/99 RT 272-81; 10/8/99 RT 57; Ledford's 11/16/99 Reply Brief, p. 7.)

~~We have previously expressed our desire for such an agreement. (10/8/99 RT 14-15.) Moreover, this agreement must be executed and not conflict with the final Conditions of Certification imposed by the Commission. (10/7/99 RT 305.) We note that MWA has also advised that such agreement should be consistent with our Conditions and pointed out various provisions of the draft agreement (identified as Ex. 133) with which it had~~

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such source, but did not object to a specific prohibition to that effect. (2/18/00 RT 143-44.) We have included this prohibition in Condition **SOIL & WATER-1.d**, below.

~~concerns. (Letter of November 3, 1999.) Until such an agreement is provided, we remain unable to recommend that the project be certified.~~

Applicant offered an executed Agreement as one of the reasons supporting its Motion to reopen the evidentiary record. The provisions of this Agreement, their consistency with our Conditions of Certification, the potential uses of water imported for the project, and use of the project's water facilities were explored at the February 18, 2000 evidentiary hearing.[50] These matters also included any potential growth inducing impacts.

At the outset, we note that the evidence of record does not establish or credibly suggest that the SWP water discussed during these proceedings will be used for other than project purposes. Uncontradicted testimony from both Applicant and VVWD clearly indicates that the imported water will be used for project cooling; moreover, our Conditions of Certification provide a comprehensive modeling and monitoring regimen to track water use and ensure that the HDPP does not consume native groundwater. (See, e.g., Conditions **SOIL&WATER-4, 5, 6, 8-10, 13, 17, 18,** *infra*.) We further note that the weight of the evidence of record does not establish that the project, including its appurtenant facilities, will create or lead to any future new projects or level of growth. Testimony of record indicates that the HDPP is not growth inducing, has characterized the project as preventing long-term growth, and nowhere identifies any additional development planned or reasonably expected to occur as a result of the project. (See, e.g., 9/30/99 RT 123-24, 139:19-21, 140-41.)

The concerns expressed during the hearings regarding the project's growth inducing impacts therefore appear founded upon a considerable degree of speculation in that they are oriented toward future non-specific development which possibly *could* occur. Moreover, this possible future development and accompanying level of impact are not centered around the power plant but rather the HDPP's water supply and treatment facilities. Specifically, various parties are apparently concerned that VVWD – a public

[50] . We require the final version, incorporating all our Conditions, prior to commencing project construction (Verification to Condition **SOIL&WATER 17**; *infra*).

agency -- could essentially use the project's water wells, pipeline, and water treatment facilities to meet its customer demands or to expand its water supply.

This notion overlooks the fact that all impacts, including growth inducing impacts, associated with the importation of SWP water into the basin have been analyzed in the environmental documents underlying MWA's Regional Water Management Plan (Ex. 110, p. 2) and also as part of the CEQA review evaluating the recent transfer of additional SWP entitlements to MWA.[51] These contentions also ignore the fact that to use the treatment facility for new project purposes, VVWD would need an additional water storage agreement with MWA, which would require further CEQA review.

The facts established by the evidence of record do not support the credibility of these assertions that the HDPP project will create an unanalyzed level of growth. First, while VVWD will own and operate the injection wells (and will be reimbursed by HDPP for design and construction costs), the evidence establishes that the intended use of these wells is for direct injection of imported water for storage and extraction of stored water for plant cooling. (2/18/00 RT 99:11-14; 106:3-6; 116:13-18; 134; Ex. 145, sections 1, 3, 8, 10, 11, 12.) VVWD may, however, use these wells only to inject additional water, if available, for aquifer recharge, or to displace pumping from existing wells nearer the Mojave River. (2/18/00 RT 108:21-25, 129, 136-38, 153, 157, 164.) Testimony indicates that the former use would assist VVWD in decreasing its reliance on groundwater, and that the latter use would reduce the current level of impact upon riparian habitat. (2/18/00 RT 137, 153-56.)

VVWD's ownership and operation of the wells appears to be mutually beneficial to VVWD and to HDPP. VVWD will gain operational flexibility and have well costs absorbed by HDPP; HDPP, in turn, will not have to assume responsibility for well installation, operation, maintenance, or land acquisition. (2/18/00 RT 99, 105-07, 139;

[51] Portions of these environmental documents were provided, and docketed, on March 17, 2000. (Communication from Tom Dodson & Associates to Mr. Randy Hill, March 14, 2000; see also, Exs. 109, p. 14; 110.) They constitute a portion of the administrative record pursuant to 20 Cal. Code of Regs., § 1702(a).

Ex. 145.) Ownership does not provide VVWD with additional facilities or water supplies which it could not otherwise obtain. The uncontroverted testimony establishes that, with or without ownership of the project wells, VVWD may continue to install wells to extract water to meet the demands of its customers and must pursue obtaining additional water rights consistent with the provisions of the adjudication. (2/18/00 RT 99-100, 102, 106, 108, 136, 154-55, 165:15-20; 167-68.) The project wells (or their ownership) thus neither enhance nor diminish VVWD's existing ability to obtain additional capacity nor, in view of the more costly nature of imported water versus the rights to unused groundwater,[52] provide an economic incentive for VVWD to rely upon them.[53]

Next, witnesses sponsored by Mr. Ledford established that the water pipelines are larger than needed to solely supply the project's annual operational needs of 4000 acre feet. (2/18/00 RT 221, 226.) Mr. Ledford apparently believes this fact, when viewed in combination with other existing and planned pipelines, indicates that VVWD may intend to use the project pipeline to meet, or expand, the needs of its service area. (See generally, 2/18/00 RT 121-25, 179-83.)

The evidence simply does not support Mr. Ledford's conjecture. Direct, uncontradicted testimony establishes that the design capacity of project pipelines is required to meet project needs. (2/1800 RT 126:19-25 to 127:1-4; see also, Ex.14.) These needs include "peak", not just "average," water flows in order to transport water both for cooling as well as injection for storage.[54] (2/18/00 RT 117-19.) Moreover, the evidence persuasively establishes that the project's water pipelines will not be interconnected ("looped") with existing or currently planned pipelines (2/18/00 RT 179-83), other than

[52] The testimony of record establishes that VVWD's cost of imported water (including purchase, treatment, and delivery) is about $400 per acre foot. By comparison, purchase of unused groundwater carryover rights are approximately $35 per acre foot. (2/18/00 RT 156-57.)

[53] Staff apparently agrees since its revised version of Condition 7 (March 24, 2000) requires HDPP ownership of only the project water treatment plant.

[54] We have included an additional Condition (**SOIL & WATER-7.e**, *infra*), specifying that the water facilities be consistent with the design specifications of the project. (See, 2/18/00 RT 135:7-11.)

is necessary to allow VVWD to use project wells to supply the project or to offset existing pumping near the Mojave River. (2/18/00 RT 125-26, 179-83.)

Since imported water injected into the aquifer (whether for storage, recharge, or domestic use) must first be treated to meet applicable standards, HDPP's water facilities include a water treatment plant. Unlike the wells and supply pipelines, HDPP will own and operate this unit. (2/18/00 RT 119-20, 130:14-16; see Condition **SOIL&WATER-7**.)

Testimony from Applicant and VVWD indicates that while the Agreement allows VVWD to use the project's water facilities to serve customers other than HDPP, such use must expressly be consistent with our Conditions of Certification. (2/18/00 RT 134; Ex. 145, section 15.) This testimony further establishes that, while VVWD does not currently have treated water for injection available (2/18/00 RT 165:3-5), the Agreement limits VVWD's use of the project's water facilities to aquifer recharge (as opposed to domestic supply) purposes only. (2/18/00 RT 101, 129, 166:1-6.)

The testimony also establishes, however, that once water is treated and injected, the possibility exists that it could be supply domestic or other needs. (2/18/00 RT 119-20, 130:14-16.) This factor has been characterized as one which creates the potential for growth inducing impacts which have not been analyzed as part of the project. (See, e.g., 2/18/00 RT 201, 212.)

We recognize that VVWD may desire to use the facility for aquifer recharge purposes. This use could benefit the over drafted basin by either replenishing water or displacing pumping of existing groundwater. Even though the Agreement allows VVWD to use the treatment plant only for groundwater recharge, and VVWD acknowledges that its direct use for other purposes would require additional analysis (2/18/00 RT 158), we recognize the possibility that such potential use be characterized as one which allows VVWD to gain access to additional water supplies. To prevent this, we believe it prudent to simply specify in our

Conditions of Certification the purposes for which VVWD may use the project's water treatment facility.

In this regard we note that Staff filed a clarification to the additional Conditions proposed at the February 18, 2000 hearing. (Staff "Alternative Conditions", March 24, 2000.) This submittal includes a revision to Condition **SOIL&WATER-17** and a new **Condition 19** which, to our reading, succinctly memorializes the limitation upon VVWD's use of the water treatment facilities to aquifer recharge purposes only. We believe this language adequately captures our intent and the stated intention of Applicant and VVWD. We further note that should VVWD wish to use the water facility to treat water for other purposes, such action would require a separate storage agreement between MWA and VVWD, and additional CEQA review as provided in MWA's Ordinance 9.

In summary, we have examined the water issues in depth. The Conditions of Certification require the HDPP to use only imported water for cooling purposes, and provide a comprehensive monitoring apparatus to ensure that project operations are "water neutral", at worst, and do not further deplete water levels in the aquifer. We have also included provisions requiring reexamination of the water situation as part of project closure activities (**SOIL&WATER-6.d**.), and have required that the project's water treatment facilities be used only for project or aquifer recharge purposes (**SOIL&WATER-19**). We believe that the weight of the evidence of record establishes that the comprehensive requirements set forth below are adequate to mitigate the impacts of the HDPP to below a level of significance and to preclude use of project facilities from resulting in growth inducing impacts or from any adverse effects upon water resources.

Finally, we realize that our Conditions do not resolve the broader water management issues within the region as articulated by Mr. Ledford. [55] We have examined the

[55] The California Water Plan addresses water supply and water management, including water supply reliability, issues from a statewide perspective. It is informative to note that, even based on this assessment, DWR cannot require a local water agency to adopt one type of water management option over another. (Executive Summary, Chapter 1, p. 6; see also, Chapter 5, p. 13.) The Water Plan does,

project's consistency with statewide water policies and supply assessments, and can conclude only that the choice of how water is used within a particular region is simply not within our jurisdiction. This choice is subject, in main part, to decisions and water allocation rules established by MWA, in accordance with the direction of the court adjudication and its responsibilities as watermaster. We trust that agency will balance all competing factors in formulating its necessary analysis and fulfilling its obligations.

FINDINGS and CONCLUSIONS

Based upon the persuasive weight of the evidence of record, we find and conclude as follows:

1. Soils in the project area are susceptible to wind and water erosion.

2. The Conditions of Certification below will ensure that the project does not create any significant adverse impacts to soil resources.

3. The Mojave River Groundwater Basin is severely overdrafted.

4. The High Desert Power Project will use wet cooling technology.

5. The use of wet cooling technology requires approximately 3300 to 4000 acre-feet of water annually.

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however, assess the sufficiency of the state's water resources and DWR's ability to meet contractual entitlements to agencies such as MWA after first meeting statewide environmental needs. These environmental needs are defined as including:

- Dedicated flows in State and federal wild and scenic rivers;
- Instream flow requirements established by water right permits, CDFG agreements, court actions, or other adminstrative documents;
- Bay-Delta outflows required by SWRCB; and
- Applied water demands of managed freshwater wildlife areas. (Executive Summary, Chapter 4, p. 12; see also, pp. 12-17.)

The Water Plan is based on a planning horizon of 1995-2020. It indicates that, in an average water year, environmental water use is 36.9 million acre feet of a total statewide water supply (surface water, groundwater, and recycled and desalted water) of 78 million acre feet. Environmental water use demands are not projected to increase dramatically over the planning period. (Executive Summary, Chapter 5, p.2.)

Based upon these statewide evaluations, it is estimated that the State Water Project will, assuming an average water year, provide approximately 3.4 million acre feet in the year 2020. (Executive Summary, Chapter 3, p. 5.) These matters are also reflected in Staff's testimony. (Ex. 87.)

6. Under the Applicant's water plan, State Water Project water will be imported to supply the cooling needs of the High Desert Power Project.

7. The Conditions of Certification below require that ~~In order for~~ the High Desert Power Project ~~to be approved, it must~~ use only imported State Water Project water for its cooling needs.

~~8.State Water Project water is available in sufficient quantities from the Mojave Water Agency to supply the needs of the High Desert Power Project.~~

~~9.~~8. The Mojave Water Agency supplies State Water Project water on an annual and interruptible basis~~.~~, and is the court-appointed watermaster for the Basin.

9. The Mojave Water Agency is entitled to approximately 75,000 acre feet per year of State Water Project water.

10. The availability and amount of State Water Project water is determined on an annual basis.

11. The Mojave Water Agency annually determines for which uses its supply of State Water Project may be put.

~~10.~~12. Use of imported State Water Project water by the High Desert Power Project will not negatively affect water levels or supply in the local aquifers, ~~or~~ in the Mojave River, or create a significant new demand upon the supply of State Water Project Water, nor prevent the Mojave Water Agency from addressing the basin's overdraft.

~~11. An executed aquifer storage and recovery agreement with the Victor Valley Water District, which is consistent with Energy Commission Conditions of Certification, is necessary to establish the overall viability of the Applicant's proposed water supply plan.~~

~~11.~~13. The Conditions of Certification require that the project's water treatment facilities be used only for project or for aquifer recharge purposes.

~~12.If Applicant provides the final agreement referred to in Finding 11 above, the water supply plan will likely be acceptable.~~

14. Based on the evidence of record, Victor Valley Water District will limit its use of project wells and pipelines to supplying the High Desert Power Project, recharging the aquifer, or displacing existing pumping from wells nearer the Mojave River.

15. The evidence of record does not identify any future projects which have been specified or are reasonably foreseeable as a result of the High Desert Power Project. In addition, the Conditions of Certification adequately ensure that the project's water facilities will not remove an impediment to growth, or result in growth inducing impacts.

16. The analysis of record did not evaluate storage of water for withdrawal and non-project use by the Victor Valley Water District.

17. Before Victor Valley Water District may use the project's water treatment facility for any non-project withdrawal and use, it must first obtain a separate water storage agreement from the Mojave Water Agency.

18. The agreement mentioned in Finding 17, above, is subject to the requirements of Ordinance 9 and additional analysis under the California Environmental Quality Act.

19. The evaluation of record included an examination of alternate sources of water supply for the project.

20. Impacts associated with the importation of State Water Project water by the Mojave Water Agency have been examined in environmental documentation certified by that agency.

~~18.~~21. The Conditions of Certification below ensure that the High Desert Power Project will comply with all applicable laws, ordinances, regulations, and standards mentioned in the appropriate portion of Appendix A of this Decision.

We therefore conclude that the High Desert Power Project will not create any significant adverse direct, indirect, or cumulative impacts upon water resources, and that it will be constructed and operated in accordance with all applicable laws.

~~Applicant has not yet provided an executed aquifer storage and recovery agreement with the Victor Valley Water District. It is therefore unknown whether the Conditions below are consistent with such agreement. Moreover, the record does not indicate whether the Conditions below are sufficient to address the concerns raised by Staff and CDFG at the October 8, 1999 evidentiary hearing. We therefore are currently unable to recommend the Commission certify the High Desert Power Project.~~

~~At the October 8 hearing, Applicant, Staff, and CDFG indicated they would reexamine the proposed Conditions of Certification to ensure that the contents of the Conditions of Certification and the provisions of the agreement with VVWD were consistent. At that~~

~~time, the parties anticipated providing stipulated revisions within a week. (10/8/99 RT 172-73.) To date, revisions have not been submitted.~~

~~**We have included the following Conditions as proposed during the hearings for reference purposes only, and in anticipation of further changes.**~~

CONDITIONS of CERTIFICATION ~~(Pending Revision)~~

~~**SOIL&WATER-1** The only water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency's (MWA) Ordinance 9.~~

~~a)____Whenever SWP water is available to be purchased from MWA, the project owner shall use direct delivery of such water for project operation.~~

~~**b)**____Whenever water is not available to be purchased from the MWA, the project owner may use SWP water banked in the seven HDPP wells as identified in Figure Number 1 of the Addendum Number 1 to the "Evaluation of Alternative Water Supplies for the High Desert Power Project" (Bookman-Edmonston 1998) as long as the amount of water used does not exceed the amount of water determined to be available pursuant to **SOIL&WATER-5.**~~

~~c)____If there is no water available to be purchased from the MWA and there is no water available to be pumped, as determined pursuant to **SOIL&WATER-5**, no groundwater may be pumped, and the project may not operate. At the project owner's discretion, dry cooling may be used instead, if an amendment to the Commission's is decision is approved.~~

~~**Verification:** The project owner shall submit to the California Energy Commission (CEC) Compliance Project Manager (CPM) a copy of the annual application to the MWA for SWP water when it is filed with the agency. The project owner shall submit to the CEC CPM a copy of the MWA's annual approved application for SWP water. The project owner shall submit to the CEC CPM a copy of the finalized agreement with the Victor Valley Water District (VVWD).~~

~~**SOIL&WATER-2** The project owner shall provide evidence of a storage agreement between the Mojave Basin Area Watermaster (Mojave Water Agency) and VVWD prior to the initiation of any groundwater banking.~~

~~**Verification:** The project owner shall submit to the CEC CPM a copy of the application for a storage agreement with the Mojave Basin Area Watermaster when the application is filed. The project owner shall submit to the CEC CPM a~~

~~copy of the approved storage agreement from the Mojave Basin Area Watermaster within fifteen (15) days of receipt of the agreement.~~

~~**SOIL&WATER-3** The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM prior to the start of commercial operation.~~

~~**Verification:** The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM within thirty (30) days of its receipt by the project owner.~~

~~**SOIL&WATER-4** The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the commercial operation. During this period, the project owner may pump banked groundwater that is available to the project as determined by **SOIL&WATER-5**.~~

~~**Verification:** The project owner shall provide a monthly report to the CEC CPM and to the CDFG on the progress of construction of the project wells, the amount of SWP water injected and the amount of groundwater pumped during the period beginning eighteen (18) months from the start of rough grading to the end of the first twelve (12) months of commercial operation. The project owner shall provide the CEC CPM and the CDFG with verification that one thousand (1,000) acre-feet of SWP water has been injected within one (1) month of the start of the second year of commercial operation.~~

~~**SOIL&WATER-5** The amount of banked groundwater available to the project during the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the High Desert Power Project (HDPP) wells minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater. The amount of banked groundwater available to the project after the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the HDPP wells, minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater, minus one thousand (1,000) acre feet.~~

~~The amount of banked groundwater water available to the project shall be calculated by the CEC Staff using the HDPP model, based upon the United States Geological Survey (USGS) model, FEMFLOW3D. The amount of banked groundwater available shall be updated on a calendar year basis by the CEC Staff, taking into account the amount of groundwater pumped by the project during the preceding year and the amount of water banked by the project during the preceding year. Each annual model run shall simulate the actual sequence of historic pumping and injection since the injection program began. From the model runs, the CEC Staff shall determine the amount of groundwater available for each new calendar year. If the amount of banked~~

~~groundwater available to the project is less than one (1) year's supply plus 1,000 acre-feet, the CEC Staff shall determine the amount of groundwater available to the project on a quarterly basis.~~

~~**Verification:** The project owner shall submit to the CEC CPM and to the CDFG in writing, on a quarterly basis, a monthly accounting of all groundwater pumped and all SWP water treated and injected for the preceding quarter. Within thirty (30) days of receipt of the approved storage agreement, pursuant to **SOIL&WATER-2**, the project owner shall submit to the CEC CPM and to the CDFG an annual written estimate of the anticipated amount of SWP water that will be banked and the anticipated amount of groundwater that will be pumped in the coming year. If the amount of banked groundwater available to the project is less than one (1) year's supply plus one thousand (1,000) acre-feet, quarterly estimates of anticipated injection and withdrawal will be required; under these conditions, the project owner shall submit to the CEC CPM and to the CDFG a quarterly written estimate of the anticipated amount of SWP water that will be banked and the anticipated amount of groundwater that will be pumped in the coming quarter.~~

~~CEC Staff shall use this information in the HDPP model to evaluate the amount of banked groundwater available and to calculate the approximate rate of decay. CEC Staff shall notify the project owner within thirty (30) days of the amount of banked groundwater available to be pumped in the new calendar year or in the next quarter, if applicable.~~

~~**SOIL&WATER-6** By the end of the fifth year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation shall meet or exceed thirteen thousand (13,000) acre-feet.~~

~~**Verification:** The project owner shall submit verification to the CEC CPM and the CDFG that the amount of injected groundwater minus the amount of banked groundwater pumped equals or exceeds thirteen thousand (13,000) acre feet of water within one (1) month of the start of the sixth year of commercial operation.~~

~~**SOIL&WATER-7** After the fifth year of commercial operation and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet. Once the limit of one thousand (1,000) acre-feet has been reached, the project owner shall replace banked groundwater used for project operation during aqueduct outages as soon as SWP water is available for sale by MWA~~

~~During the three (3) years prior to project closure, the project owner may withdraw the balance of banked groundwater determined to be available to the project, except for one thousand (1,000) acre-feet, pursuant to **SOIL&WATER-5.** The project owner is not required to replace this final withdrawal of groundwater. However, during the three years prior to project closure, at no time may the balance of banked groundwater decline below one thousand (1,000) acre-feet. Furthermore, there must be a remaining balance of one thousand (1,000) acre-feet banked in the groundwater system at closure, as determined to be available to the project pursuant to **SOIL&WATER-5**.~~

~~**Verification:** The project owner may use the verification for **SOIL&WATER-6** for **SOIL&WATER-7**; however, in addition, the facility closure plan submitted three (3) years prior to closure to the CEC CPM and the CDFG shall specify any plans for the pumping of any banked groundwater available to the project.~~

~~**SOIL&WATER-8** The project owner shall conduct pumping tests in all project wells to establish *in situ* hydraulic parameters including transmissivity and storativity in the Regional Aquifer. From these parameters and the project well-log data, the project owner shall calculate the following site-specific values:~~

~~- effective horizontal hydraulic conductivity~~
~~- effective vertical hydraulic conductivity~~
~~- specific yield, if pumping tests indicate the aquifer is unconfined, or~~
~~- specific storage, if aquifer is confined.~~

~~Prior to conducting the pumping test, the project owner shall submit a work plan detailing the methodology to be used to conduct the proposed pumping tests and to calculate the specified parameters and values to the CEC CPM and to the CDFG for review and approval.~~

~~Based upon the information generated by the pumping tests, CEC Staff shall revise the HDPP model to reflect the results of the pumping tests. All modeling runs referred to in **SOIL&WATER-5** shall incorporate the results of these pumping tests, following approval by the CEC CPM determined pursuant to this condition.~~

~~Protocol: The pumping tests shall provide data to calculate the *in situ* hydraulic parameters of the Regional Aquifer.~~

~~- At a minimum the pumping tests for all HDPP wells shall include the measurement of drawdown in at least one (1) non-pumping (observation) well that is screened at the same depth as the pumping well.~~

~~- Observation well(s) for each pumping test must be sufficiently close to the pumping well that pumping produces measurable drawdown of sufficient~~

duration in the observation well(s) to analyze the site-specific hydraulic parameters including transmissivity and storativity in the Regional Aquifer.

In addition, if the observation well data indicates a slow release of groundwater from storage, the pumping test shall be extended until the release from storage can be observed to stabilize in a plot of the data from the observation well(s). (For a description of the evaluation of storativity under slow release conditions, see Driscoll, F.G., 1986, Groundwater and Wells, H.M. Smyth, Inc., p. 229-230).

Single well pumping tests and pumping tests that do not produce enough measurable drawdown in observation wells to conclusively calculate hydraulic parameters will not meet the Conditions of Certification.

Verification: The project owner shall submit to the CEC CPM and to the CDFG, six (6) months prior to the start of pumping tests, the work plan that details the methodology for conducting the proposed pumping tests on the seven (7) HDPP wells and for calculating the specified parameters and values. With the approval of the work plan by the CEC CPM, in consultation with the CDFG, the project owner shall perform the pumping tests following the CEC protocol.

Within two (2) months after the completion of pumping tests, the project owner shall submit to the CEC CPM and to the CDFG a report detailing how the pumping tests were conducted and the results of the tests, including the calculation of: (1) the *in situ* hydraulic parameters of transmissivity and storativity for the Regional Aquifer; and (2) the site-specific values of effective horizontal hydraulic conductivity, effective vertical hydraulic conductivity, and specific yield and/or specific storage.

SOIL&WATER-9 The project owner shall modify the HDPP model grid to accommodate the representation of gradational changes in the hydraulic conductivity of the Regional Aquifer, in conformance with the USGS Mojave River Groundwater Basin model.

The CEC Staff shall revise the HDPP model, using the modified grid, to incorporate the gradational changes in the hydraulic conductivity of the Regional Aquifer represented in the USGS Mojave River Groundwater Basin model.

All modeling runs referred to in **SOIL&WATER-5** shall incorporate the modifications of the model along with the model information obtained from the USGS following approval by the CEC CPM determined pursuant to this condition.

Verification: The project owner shall submit the modified model grid input files (including updated versions of any other input files that are effected by the

~~modification of the grid) within two (2) months after the construction of the HDPP wells to the CEC Staff for review and approval, in consultation with the CDFG.~~

~~**SOIL&WATER-10** The project owner shall prepare an annual report of describing groundwater level monitoring performed as follows. The project owner shall monitor groundwater levels in all project wells, in VVWD wells 21, 27, 32, and 37, in Adelanto wells 4 and 8a, and in all other wells within a one (1) mile radius of the project wells. Groundwater monitoring shall also be conducted within the Mojave River Aquifer Alluvium. Additional monitoring wells specified by VVWD for the evaluation of well interference within Pressure Zone 2 should also be included. Monitoring shall be performed on a quarterly basis starting within six (6) months after the start of rough grading.~~

~~**Verification:** The project owner shall annually submit a copy of the groundwater level monitoring report to the CEC CPM, the CDFG, the MWA and the VVWD.~~

~~**SOIL&WATER-11** The project owner shall submit an approved Waste Discharge Requirement prior to the start of any groundwater banking unless the Regional Water Quality Control Board (RWQCB) decides to waive the need to issue a waste discharge requirement or waive the need for the project owner to file a Report of Waste Discharge.~~

~~**Verification:** The project owner shall submit a copy of the approved Waste Discharge Requirement from the Lahontan RWQCB to the CEC CPM within sixty (60) days of the start of rough grading. The project owner shall also submit to the CEC CPM a copy of any additional information requested by the RWQCB as part of their evaluation of the application. If the RWQCB decides to waive the need to file a Report of Waste Discharge or the need for a waste discharge requirement, the project owner shall submit a copy of the letter from the RWQCB to the CEC CPM. If a waste discharge requirement is required by the RWQCB, the project owner shall provide a copy of the approved permit to the CEC CPM.~~

~~**SOIL&WATER-12** The project owner shall prepare and submit to the CEC CPM and, if applicable, to the Lahontan RWQCB for review and approval, a water treatment and monitoring plan that specifies the type and characteristics of the treatment processes and identify any waste streams and their disposal methods. The plan shall provide water quality values for all constituents monitored under requirements specified under California Code of Regulations, Title 22 Drinking Water Requirements from all production wells within two (2) miles of the injection wellfield for the last five (5) years.~~

~~The plan shall also provide SWP water quality sampling results from Rock Springs, Silverwood Lake or other portions of the East Branch of the California Aqueduct in this area for the last five (5) years. Also identified in the plan will be the proposed treatment level for each constituent based upon a statistical analysis of the collected water information. The statistical~~

~~approach used for water quality analysis shall be approved prior to report submittal by the CEC CPM and, if applicable, the RWQCB. Treatment of SWP water prior to injection shall be to levels approaching background water quality levels of the receiving aquifer or shall meet drinking water standards, whichever is more protective. The plan will also identify contingency measures to be implemented in case of treatment plant upset.~~

~~The plan submitted for approval shall include the proposed monitoring and reporting requirements identified in the Report of Waste Discharge (Bookman-Edmonston 1998d) with any modifications required by the RWQCB.~~

~~**Verification:** Ninety (90) days prior to banking of SWP water within the Regional Aquifer, the project owner shall submit to the Lahontan RWQCB and the CEC CPM a proposed statistical approach to analyzing water quality monitoring data and determining water treatment levels. The project owner shall submit the SWP water treatment and monitoring plan to the CEC CPM and, if appropriate, to the Lahontan RWQCB for review and approval. The CEC CPM's review will be conducted in consultation with the MWA, the VVWD, and the City of Victorville. The plan submitted for review and approval shall reflect any requirements imposed by the RWQCB through a Waste Discharge Requirement.~~

~~**SOIL&WATER-13** The project owner shall implement the approved water treatment and monitoring plan. All banked SWP water shall be treated to meet local groundwater conditions as identified in Condition **SOIL&WATER-2**. Treatment levels may be revised by the CEC and, if applicable, by the RWQCB, based upon changes in local groundwater quality identified in the monitoring program not attributable to the groundwater-banking program. Monitoring results shall be submitted annually to the CEC CPM and, if applicable, to the RWQCB.~~

~~**Verification:** The project owner shall annually submit monitoring results as specified in the approved plan to the CEC CPM. The project owner shall identify any proposed changes to SWP water treatment levels for review and approval by the CEC and, if appropriate, the Lahontan RWQCB. The project owner shall notify the RWQCB, the VVWD and the CEC CPM of the injection of any inadequately treated SWP water into the aquifer due to an upset in the treatment process or for other reasons. Monitoring results shall be submitted to the CEC CPM~~

~~**SOIL&WATER-14** The project owner shall provide access to the United States Air Force for all efforts to characterize and remediate all soil and groundwater contamination at the power plant site.~~

~~**Verification:** The project owner shall submit in writing a copy within two (2) weeks of receipt of any request from the Air Force for site access to characterize or remediate contaminated soil and/or groundwater to the CEC CPM.~~

~~**SOIL&WATER-15** Prior to beginning any clearing, grading or excavation activities associated with closure activities, the project owner must submit a notice of intent to the State Water Resources Control Board to indicate that the project will operate under provisions of the General Construction Activity Storm Water Permit. As required by the general permit, the project owner will develop and implement a Storm Water Pollution Prevention Plan.~~

~~**Verification:** Two (2) weeks prior to the start of construction, the project owner will submit to the CEC CPM a copy of the Storm Water Pollution Prevention Plan.~~

~~**SOIL&WATER-16** Prior to the initiation of any earth moving activities, the project owner shall submit an erosion control and revegetation plan for CEC Staff approval. The final plan shall contain all the elements of the draft plan with changes made to address the final design of the project.~~

~~**Verification:** Thirty (30) days prior to the initiation of any earth moving activities, the final erosion control and revegetation plan shall be submitted to the CPM for approval, in consultation with the CDFG.~~

SOIL&WATER-1 The only water used for project operation (except for domestic purposes) shall be State Water Project (SWP) water obtained by the project owner consistent with the provisions of the Mojave Water Agency's (MWA) Ordinance 9.

a. Whenever SWP water is available to be purchased from MWA, the project owner shall use direct delivery of such water for project operation.

b. Whenever water is not available to be purchased from the MWA, the project owner may use SWP water banked in the seven HDPP wells identified in Figure Number 1 of the Addendum Number 1 to the "Evaluation of Alternative Water Supplies for the High Desert Power Project" (Bookman-Edmonston 1998) as long as the amount of water used does not exceed the amount of water determined to be available to the project pursuant to **SOIL&WATER-5.**

c. If there is no water available to be purchased from the MWA and there is no banked water available to the project, as determined pursuant to **SOIL&WATER-5**, no groundwater shall be pumped, and the project shall not operate. At the project owner's discretion, dry cooling may be used instead, if an amendment to the Commission's decision allowing dry cooling is approved.

d. The project shall not use treated water from the Victor Valley Wastewater Authority.

e. The project's water supply facilities shall be appropriately sized to meet project needs.

See verification for Conditions 2, 3 and 6.

SOIL&WATER-2 The project owner shall provide a copy of the storage agreement between the Mojave Basin Area Watermaster (Mojave Water Agency) and VVWD prior to the initiation of any groundwater banking, and on an annual basis thereafter.

Verification: The project owner shall submit to the CEC CPM a copy of the application for a storage agreement with the Mojave Basin Area Watermaster at the time the application is filed. The project owner shall submit to the CEC CPM a copy of the approved storage agreement from the Mojave Basin Area Watermaster within fifteen (15) days of receipt of the agreement.

SOIL&WATER-3 The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM prior to the start of commercial operation.

Verification: The project owner shall provide a copy of a "Will Serve Letter" from VVWD to the CEC CPM within thirty (30) days of its receipt by the project owner.

SOIL&WATER-4 Injection Schedule:

a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the project's commercial operation.

b. By the end of the fifth year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation, minus the amount of dissipated groundwater shall meet or exceed thirteen thousand (13,000) acre-feet.

c. After the fifth year of commercial operation and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet. Once the limit of one thousand (1,000) acre-feet has been reached, the project owner shall replace banked groundwater used for project operation during aqueduct outages as soon as SWP water is available for sale by MWA.

See the verification to Condition 5.

SOIL&WATER-5 Calculation of Balance:

a. The amount of banked groundwater available to the project shall be calculated by the CEC staff using the HDPP model, FEMFLOW3D. The amount of banked groundwater available shall be updated on a calendar year basis by the CEC staff, taking into account the amount of groundwater pumped by the project during the preceding year and the amount of water banked by the project during the preceding year.

b. When calculating the amount of banked groundwater available to the project, CEC staff shall subtract any amount of water that is produced by Victor Valley Water District (VVWD) from the project wells for purposes other than use by the project that exceeds the baseline, as defined in **SOIL&WATER-17(1)**.

c. Each annual model run shall simulate the actual sequence of historic pumping and injection since the injection program began. From the model runs, the CEC Staff shall determine the amount of groundwater available for each new calendar year. If the amount of banked groundwater available to the project is less than one (1) year's supply plus 1,000 acre-feet, the CEC Staff shall determine the amount of groundwater available to the project on a quarterly basis.

Verification: During the period beginning eighteen (18) months after the start of rough grading and concluding at the end of the first month after one full year (12 months) of commercial operation, the project owner shall provide a monthly report to the CEC CPM and to the CDFG on the progress of construction of the project wells, and shall identify the amount of SWP water injected and the amount of groundwater pumped during the previous month.

After the end of the first month after one full year (12 months) of commercial operation, the project owner shall submit to the CEC CPM and to the CDFG in writing, on a quarterly basis, a monthly accounting of all groundwater pumped and all SWP water treated and injected for the preceding quarter. Within thirty (30) days of receipt of the approved annual storage agreement, pursuant to **SOIL&WATER-2**, the project owner shall submit to the CEC CPM and to the CDFG an annual written estimate of the anticipated amount of SWP water that will be banked and the anticipated amount of groundwater that will be pumped in the coming year. If the amount of banked groundwater available to the project is less than one (1) year's supply plus one thousand (1,000) acre-feet, quarterly estimates of anticipated injection and withdrawal will be required.

CEC Staff shall use this information in the HDPP model to evaluate the amount of banked groundwater available and to calculate the approximate rate of decay. CEC Staff shall notify the project owner within thirty (30) days of the amount of banked

groundwater available to be pumped in the new calendar year or in the next quarter, if applicable.

SOIL&WATER-6 Banked Water Available for Project Use:

a. The amount of banked groundwater available to the project during the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the High Desert Power Project (project) wells, minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater, and minus any amount described in **SOIL&WATER-5(b).**

b. The amount of banked groundwater available to the project after the first twelve (12) months of commercial operation is the amount of SWP water injected by the project owner into the project wells, minus the amount of groundwater pumped by the project owner, minus the amount of dissipated groundwater, minus one thousand (1,000) acre feet, and minus any amount described in **SOIL&WATER-5(b).**

c. During the three (3) years prior to project closure, the project owner may withdraw the balance of banked groundwater determined to be available to the project, except for one thousand (1,000) acre-feet, pursuant to **SOIL&WATER-5.** The project owner is not required to replace this final withdrawal of groundwater. However, during the three (3) years prior to project closure, at no time may the balance of banked groundwater decline below one thousand (1,000) acre-feet. Furthermore, there must be a remaining balance of one thousand (1,000) acre-feet banked in the groundwater system at closure, as determined to be available to the project pursuant to **SOIL&WATER-5**. This balance of one thousand (1,000) acre-feet must remain in the groundwater system, and the project owner, by contract or other conveyance, may not transfer the rights to this balance.

d. The project shall not operate for longer than thirty (30) years unless the Commission has approved an amendment to its license that specifically evaluates the water resources impacts of continued operation and imposes any mitigation necessary to ameliorate any identified impacts.

e. No water is available for project use if the requirements of **SOIL&WATER-4** are not met by the project owner.

Verification: The project owner shall use the same verification as for **SOIL&WATER-5**; however, in addition, any facility closure plan submitted during that last three (3) years of commercial operation shall address the disposition of any remaining water available to the project, as well as the disposition of the water treatment facility.

SOIL&WATER-7 The project owner shall retain ownership and operational control of the water treatment facility.

Verification: Should the project owner choose to transfer ownership or operational control of the water treatment facility, it must apply for an amendment to the Energy Commission Decision, and include an evaluation of any environmental effects associated with the transfer of ownership or operational control to another entity.

SOIL&WATER-8 The project owner shall conduct pumping tests in all project wells to establish *in situ* hydraulic parameters including transmissivity and storativity in the Regional Aquifer. From these parameters and the project well-log data, the project owner shall calculate the following site-specific values:

- effective horizontal hydraulic conductivity
- effective vertical hydraulic conductivity
- specific yield, if pumping tests indicate the aquifer is unconfined, or
- specific storage, if aquifer is confined.

Prior to conducting the pumping test, the project owner shall submit a work plan detailing the methodology to be used to conduct the proposed pumping tests and to calculate the specified parameters and values to the CEC CPM and to the CDFG for review and approval.

Based upon the information generated by the pumping tests, CEC Staff shall revise the HDPP model to reflect the results of the pumping tests. All modeling runs referred to in **SOIL&WATER-5** shall incorporate the results of these pumping tests, following approval by the CEC CPM determined pursuant to this Condition.

Protocol: The pumping tests shall provide data to calculate the *in situ* hydraulic parameters of the Regional Aquifer.

- At a minimum the pumping tests for all HDPP wells shall include the measurement of drawdown in at least one (1) non-pumping (observation) well that is screened at the same depth as the pumping well.
- Observation well(s) for each pumping test must be sufficiently close to the pumping well that pumping produces measurable drawdown of sufficient duration in the observation well(s) to analyze the site-specific hydraulic parameters including transmissivity and storativity in the Regional Aquifer.
- In addition, if the observation well data indicates a slow release of groundwater from storage, the pumping test shall be extended until the release from storage can be observed to stabilize in a plot of the data from the observation well(s). (For a description of the evaluation of storativity under slow release conditions, see Driscoll, F.G., 1986, Groundwater and Wells, H.M. Smyth, Inc., p. 229-230).

- Single well pumping tests and pumping tests that do not produce enough measurable drawdown in observation wells to conclusively calculate hydraulic parameters will not meet the Conditions of Certification.

Verification: The project owner shall submit to the CEC CPM and to the CDFG, six (6) months prior to the start of pumping tests, the work plan that details the methodology for conducting the proposed pumping tests on the seven (7) HDPP wells and for calculating the specified parameters and values. With the approval of the work plan by the CEC CPM, in consultation with the CDFG, the project owner shall perform the pumping tests following the CEC protocol.

Within two (2) months after the completion of pumping tests, the project owner shall submit to the CEC CPM and to the CDFG a report detailing how the pumping tests were conducted and the results of the tests, including the calculation of: (1) the *in situ* hydraulic parameters of transmissivity and storativity for the Regional Aquifer; and (2) the site-specific values of effective horizontal hydraulic conductivity, effective vertical hydraulic conductivity, and specific yield and/or specific storage.

SOIL&WATER-9 The project owner shall modify the HDPP model grid to accommodate the representation of gradational changes in the hydraulic conductivity of the Regional Aquifer, in conformance with the USGS Mojave River Groundwater Basin model.

The CEC Staff shall revise the HDPP model, using the modified grid, to incorporate the gradational changes in the hydraulic conductivity of the Regional Aquifer represented in the USGS Mojave River Groundwater Basin model.

All modeling runs referred to in **SOIL&WATER-5** shall incorporate the modifications of the model along with the model information obtained from the USGS following approval by the CEC CPM determined pursuant to this Condition.

Verification: The project owner shall submit the modified model grid input files (including updated versions of any other input files that are effected by the modification of the grid) within two (2) months after the construction of the HDPP wells to the CEC Staff for review and approval, in consultation with the CDFG.

SOIL&WATER-10 The project owner shall prepare an annual report describing groundwater level monitoring performed as follows. The project owner shall monitor groundwater levels in all project wells, in VVWD wells 21, 27, 32, and 37, in Adelanto wells 4 and 8a, and in all other wells within a one (1) mile radius of the project wells. Groundwater monitoring shall also be conducted within the Mojave River Aquifer Alluvium. Additional monitoring wells specified by VVWD for the evaluation of well interference within Pressure Zone 2 shall also be included. Monitoring shall be performed on a quarterly basis starting within six (6) months after the start of rough grading.

Verification: The project owner shall annually submit a copy of the groundwater level monitoring report to the CEC CPM, the CDFG, the MWA, and the VVWD.

SOIL&WATER-11 The project owner shall submit an approved Waste Discharge Requirement prior to the start of any groundwater banking unless the Regional Water Quality Control Board (RWQCB) decides to waive the need to issue a waste discharge requirement or waive the need for the project owner to file a Report of Waste Discharge.

Verification: The project owner shall submit a copy of the approved Waste Discharge Requirement from the Lahontan RWQCB to the CEC CPM within sixty (60) days of the start of rough grading. The project owner shall also submit to the CEC CPM a copy of any additional information requested by the RWQCB as part of their evaluation of the application. If the RWQCB decides to waive the need to file a Report of Waste Discharge or the need for a waste discharge requirement, the project owner shall submit a copy of the letter from the RWQCB to the CEC CPM. If a waste discharge requirement is required by the RWQCB, the project owner shall provide a copy of the approved permit to the CEC CPM.

SOIL&WATER-12 The project owner shall prepare and submit to the CEC CPM and, if applicable, to the Lahontan RWQCB for review and approval, a water treatment and monitoring plan that specifies the type and characteristics of the treatment processes and identify any waste streams and their disposal methods. The plan shall provide water quality values for all constituents monitored under requirements specified under California Code of Regulations, Title 22 Drinking Water Requirements, from all production wells within two (2) miles of the injection wellfield for the last five (5) years.

The plan shall also provide SWP water quality sampling results from Rock Springs, Silverwood Lake, or other portions of the East Branch of the California Aqueduct in this area for the last five (5) years. Also identified in the plan will be the proposed treatment level for each constituent based upon a statistical analysis of the collected water information. The statistical approach used for water quality analysis shall be approved prior to report submittal by the CEC CPM and, if applicable, the RWQCB. Treatment of SWP water prior to injection shall be to levels approaching background water quality levels of the receiving aquifer or shall meet drinking water standards, whichever is more protective. The plan will also identify contingency measures to be implemented in case of treatment plant upset.

The plan submitted for approval shall include the proposed monitoring and reporting requirements identified in the Report of Waste Discharge (Bookman-Edmonston 1998d) with any modifications required by the RWQCB.

Verification: Ninety (90) days prior to banking of SWP water within the Regional Aquifer, the project owner shall submit to the Lahontan RWQCB and the CEC CPM

a proposed statistical approach to analyzing water quality monitoring data and determining water treatment levels. The project owner shall submit the SWP water treatment and monitoring plan to the CEC CPM and, if appropriate, to the Lahontan RWQCB for review and approval. The CEC CPM's review shall be conducted in consultation with the MWA, the VVWD, and the City of Victorville. The plan submitted for review and approval shall reflect any requirements imposed by the RWQCB through a Waste Discharge Requirement.

SOIL&WATER-13 The project owner shall implement the approved water treatment and monitoring plan. All banked SWP water shall be treated to meet local groundwater conditions as identified in Condition **SOIL&WATER-2**. Treatment levels may be revised by the CEC and, if applicable, by the RWQCB, based upon changes in local groundwater quality identified in the monitoring program not attributable to the groundwater-banking program. Monitoring results shall be submitted annually to the CEC CPM and, if applicable, to the RWQCB.

Verification: The project owner shall annually submit monitoring results as specified in the approved plan to the CEC CPM. The project owner shall identify any proposed changes to SWP water treatment levels for review and approval by the CEC and, if appropriate, the Lahontan RWQCB. The project owner shall notify the RWQCB, the VVWD, and the CEC CPM of the injection of any inadequately treated SWP water into the aquifer due to an upset in the treatment process or for other reasons. Monitoring results shall be submitted to the CEC CPM

SOIL&WATER-14 The project owner shall provide access to the United States Air Force for all efforts to characterize and remediate all soil and groundwater contamination at the power plant site.

Verification: The project owner shall submit, in writing, a copy within two (2) weeks of receipt of any request from the Air Force for site access to characterize or remediate contaminated soil and/or groundwater to the CEC CPM.

SOIL&WATER-15 Prior to beginning any clearing, grading, or excavation activities associated with closure activities, the project owner must submit a notice of intent to the State Water Resources Control Board to indicate that the project will operate under provisions of the General Construction Activity Storm Water Permit. As required by the general permit, the project owner will develop and implement a Storm Water Pollution Prevention Plan.

Verification: Two (2) weeks prior to the start of construction, the project owner shall submit to the CEC CPM a copy of the Storm Water Pollution Prevention Plan.

SOIL&WATER-16 Prior to the initiation of any earth moving activities, the project owner shall submit an erosion control and revegetation plan for CEC Staff

approval. The final plan shall contain all the elements of the draft plan with changes made to address the final design of the project.

Verification: Thirty (30) days prior to the initiation of any earth moving activities, the final erosion control and revegetation plan shall be submitted to the CPM for approval, in consultation with the CDFG.

SOIL&WATER-17 The project owner shall enter into an Aquifer Storage and Recovery Agreement with the Victor Valley Water District (VVWD). This agreement shall contain the following conditions:

1) It shall prohibit VVWD from producing or allowing others to produce water from project wells, except that VVWD may produce water from project wells: (i) for use by the HDPP project pursuant to **SOIL&WATER-1**; and (ii) for purposes other than use by the HDPP project pursuant to **SOIL&WATER-1** provided that such production, in combination with production from the VVWD wells identified in "c" below does not exceed the amount identified as "the baseline", as defined in "a" below.

   a. The contract shall define the baseline as the average aggregated annual production of the wells identified in "c" during the immediately preceding five (5) years. The contract shall state that any water produced by VVWD pursuant to (ii) above shall be included in subsequent calculations of the baseline only if that production does not exceed the baseline for the calendar year in which the production occurs, as required by this Condition.

   b. The contract shall require VVWD to establish the first baseline using the five (5) calendar years preceding the operation of the project wells, and shall re-calculate the baseline on a calendar year basis by January 15 of each year.

   c. The contract shall state that "wells identified in "c" means VVWD wells that are located in a corridor two (2) to two and one half (2½) miles wide adjacent to and west of the river's western bank including all wells within the following land sections:

      - Within Township 6 North, Range 4 West, sections 31, 32, 33, and 34.
      - Within Township 5 North, Range 4 West, sections 4, 5, the east ½ of 8, 9, 10, 15, 16, the east ½ of 21, 22, 23, 25, 26, 27, the east ½ of 28, the east ½ of 33, 34, 35, and 36.

2) It shall state that the project owner shall provide to the CEC CPM and CDFG on a quarterly basis a monthly accounting of: 1) all water pumped from project wells that is supplied to the project owner; and 2) water pumped from project wells that is supplied to VVWD.

3) It shall state that VVWD shall provide to the CEC CPM and CDFG a baseline calculation no later than January 15 of each year.

4) The contract may include terms that require VVWD to compensate HDPP for any costs associated with subtractions from the amount of banked groundwater available to HDPP under the terms of **SOIL&WATER-5**(c).

Verification: The project owner shall provide to the CEC CPM and CDFG a copy of a signed Aquifer Storage and Recovery Agreement with the terms described above prior to commencing construction of the project. Any amendments to this agreement shall be approved by the CEC CPM thirty (30) days prior to the effective date of the amendment.

SOIL&WATER-18 The project owner shall ensure that flow meters are installed on project wells such that the total amount of water injected and produced on a monthly basis can be determined. In addition, the project owner shall ensure that separate flow meters are installed on: 1) that portion of the water delivery system that is dedicated to providing water to the project owner; and 2) on that portion of the water delivery system that will be used to provide water to VVWD pursuant to **SOIL&WATER-17.1(ii).**

Verification: The project owner shall provide to the CEC CPM and CDFG on a quarterly basis a monthly accounting of: 1) all groundwater injected into project wells; 2) water pumped from project wells that is supplied to the project owner; and 3) water pumped from project wells that is supplied to VVWD.

SOIL&WATER-19 The project owner shall limit any use of water treatment facilities by VVWD or another entity, for purposes other than providing water to the HDPP, to treating SWP water for injection into the regional aquifer. The project owner shall not allow VVWD or another entity to use the water treatment facility for treatment of water that is injected and then recovered by VVWD unless the watermaster and VVWD have entered into a water storage agreement, and for which the appropriate lead agency has completed a CEQA review as required by MWA Ordinance 9. Any water injected by VVWD shall not increase the baseline pursuant to **SOIL&WATER-17.1**). The project owner shall not enter into any contract or amend any existing contract to allow VVWD or another entity to use the water treatment facility for domestic purposes, unless the Energy Commission has approved an amendment to the project Decision allowing such use.

Verification: The project owner shall provide to the CEC CPM and CDFG a copy of any water storage agreement between the watermaster and VVWD within thirty (30) days of its execution which incorporates these restrictions.

E. DRY and HYBRID COOLING

The issue concerning which cooling technology could be used at the HDPP was much discussed throughout these proceedings, primarily due to the water requirements of the "wet (evaporative) cooling" proposed by Applicant. Mr. Ledford believes that the use of water for evaporative cooling violates Article X, section 2, of the California Constitution essentially because, in his view, water is not being used for its most beneficial purpose. (Ledford's 1/6/00 PMPD comments, pp. 4-5.) Other members of the community have also urged that we require the HDPP to use dry cooling. (See, e.g., 1/27/00 RT 50, 55, 56; 2/18/00 RT 51, 71, 77, 90-92.)

Impacts associated with the project's water requirements are discussed in the preceding section of this Decision; the present section summarizes and discusses the differences among heat rejection technologies available for power plant use.

1. Summary of the Evidence

a) Cooling Technologies

Wet Cooling. Wet cooling tower systems circulate a large volume of cooling water through the steam condenser to reject heat from the steam cycle. The circulating water passes through the condenser and is then sent to the cooling tower. Evaporation, drift, and blow-down create losses in this circulating water; this requires the addition of make-up water to the system. Large fans or natural drafts move air to assist in water evaporation. The warm air then rises as a plume which may or may not become visible. Wet cooling is more effective than dry cooling in dry, low-humidity areas. (Ex. 85, p. 2.)

Dry Cooling. In the direct dry cooling system, steam exhausts from the turbine to a manifold radiator system. The steam condense~~d~~s in the radiator system as heat and is conducted through the pipe walls to the atmosphere. Direct dry cooling does not require a large volume of circulating cooling water, and the closed system does not experience water losses due to evaporation. In an indirect dry cooling system, a secondary working fluid (such as water, ammonia, or another suitable fluid mixture) is used to transfer heat from the steam cycle to the atmosphere. Dry cooling systems do not require the large volumes of make-up water that are necessary in wet cooling systems. (Ex. 85, p. 3.)

Wet/Dry Hybrid Cooling. Wet/dry hybrid cooling towers use both an evaporative system and a radiator system to reject heat from the condenser. The ratio of dry to wet depends on the ambient conditions and the desired degree of heat rejection, water savings, or visible plume reduction. The key to the hybrid system is controlling the dry radiator system and the evaporative system to achieve the desired heat rejection, plume reduction, and/or water savings while balancing pump and fan loads. (Ex. 85, p. 4.)

b) Comparison of Cooling Technologies

The evidence of record establishes that there are numerous site, design, construction, and operational variables that affect the initial, operating, and maintenance costs of the cooling technologies. The evidence further indicates that the choice to use dry, hybrid, or wet cooling towers ultimately depends on the specific needs of ~~the~~ a proposed project. In general, dry and hybrid cooling systems provide benefits in the areas of lessened water use and diminished plume visibility; wet systems possess the advantage of allowing increased plant efficiency at a lower cost. (Ex. 85, pp. 1, 4-5.)

Costs. ~~The evidence of record does not contain a specific financial feasibility study directly pertinent to the use of dry or wet/dry hybrid cooling at the HDPP.~~

~~(9/16/99 RT 95:19 to 96:8; 10/8/99 RT 161.)~~ The evidence of record ~~does, however,~~ contains various approximations of the range of costs which could be incurred were ~~either of these technologies~~ dry or wet/dry hybrid cooling used at the HDPP. (10/8/99 RT 163, 168; Exs. 85, p.5; 122; see also, 9/16/99 RT 95:19 to 96:8; 10/8/99 RT 161.)

In the present case, the evidence establishes that dry cooling systems are more expensive than wet systems. For hybrid designs, costs may be more or less than dry cooling systems, depending upon the ratio of "wet to dry" cooling in the hybrid system. Capital, as well as operating and maintenance expenses, are also higher for dry or hybrid systems. (2/18/00 RT 59-60.) In general, the ~~capital~~ cost differences are due to the dry condenser or heat exchanger, the taller structures required for dry and hybrid cooling systems, and the larger fans and motors used in those systems. (Ex. 85, p. 5.) In the present instance, the testimony indicates that the power plant would need to be designed to use one dry cooling system per powertrain. (9/16/99 RT 110-11.)

~~Rough~~General estimates indicate that a hybrid cooling system would cost twice, and a dry cooling system two and one-half times, that of the proposed wet system. (*Id*.) Testimony from Applicant's witness places this variation in the $10 to 20 million range. (9/16/99 RT 117-18; see also Ex. 85, pp. 5-6; Applicant's Opening Brief, p.3.) Documentary evidence submitted by Intervenor Ledford suggests that the actual costs of the dry or hybrid cooling systems may be below this level when costs unique to the wet cooling system, such as that of water and the accompanying treatment system, are subtracted. (Exs. 119, 122.)

Overall, the testimony establishes that the Applicant proposes to use water cooling since it is the most efficient and least cost option. From an efficiency and reliability perspective, the higher parasitic loads associated with the use of dry or hybrid cooling would decrease the power plant's power output and its efficiency -- the former in the range of about 10 percent (70 MW) during summer

months and the latter in the range of 2 to 3 percent. (9/16/99 RT 114, 116, 174-75; 10/8/99 RT 163; 2/18/00 RT 59-60; Exs. 85, 143.) The efficiency of a dry cooling system decreases with an increase in ambient temperature. The use of dry cooling would also reduce plant availability during hot weather because of operational factors and low humidity generally encountered at the project site. (2/18/00 RT 60-61; Ex. 85.)

Given these and other factors, Applicant's witness stated that using dry cooling would reduce expected economic returns to the point "…where it [the HDPP] would not offer enough of a payback to make this investment worth the risk." (2/18/00 RT 58: 12-18; see also, Ex. 143, p. 2.)

In the opinion of Applicant's witness, the choice of using dry or wet cooling is basically an economic question, with water cooling being the preferable choice. (9/16/99 RT 116-17.) In the opinion of Staff's witness, the degradation in project efficiency would not be so great as to preclude the use of dry cooling. (9/16/99 RT 177.) Staff concludes that dry cooling would indeed make the HDPP less economic, though not necessarily economically infeasible. (2/18/00 RT 63-64; Ex. 146A.) Staff agrees, however, that the Applicant should determine which cooling technology to use for the HDPP. (9/16/99 RT 160, 177:6-11; 2/18/00 RT 64:8-11, 67; Ex. 146A.)

Environmental Comparison. The evidence before us also includes a comparison of the relative environmental effects of wet cooling when compared to hybrid and to dry cooling. This is summarized on Table 1 below.

Table 1 – Qualitative Comparison of Cooling Tower Environmental Characteristics

Environmental Impact	Wet Cooling	Wet/Dry Cooling	Dry Cooling
Water Supply	Highest supply and treatment requirements	Intermediate supply and treatment requirements	None
Water discharge	Highest discharge and treatment requirements	Intermediate discharge and treatment requirements	None
Plant efficiency/ Fuel supply	Baseline	Lower plant efficiency or higher fuel demand	Lower plant efficiency or higher fuel demand
Plant Emissions	Baseline	Can be higher if additional fuel used	Can be higher if additional fuel used
Auxiliary power requirements	Some	More than wet	Most compared to wet
Secondary emissions	Salt deposition from cooling tower drift	Less salt deposition from cooling tower drift	No secondary emissions
Land requirements	Baseline	Similar to more	Similar to more
Visual impact – Structural	Least obtrusive	Taller structure compared to wet	Taller structure compared to wet
Visual impacts – Plume	Visible plume, function of ambient temperatures	Plume occurrence can be reduced to almost zero	No plume
Noise	Lowest	Can be higher than wet	Can be higher than wet

Source: Exhibit 85, p. 6.

The testimony of record supports the foregoing characterizations. In addition, the evidence further establishes that the ~~U~~use of dry cooling could reduce the amount of PM10 emissions ~~from the cooling tower. This~~and thus ~~would reduce~~ the amount of PM10 offsets required~~,~~. (10/7/99 RT 55.) ~~although~~Wet/dry cooling would result in a higher level of air emissions, which would create the potential for exceeding the 24-hour PM10 standard ~~could be present~~ at the property line. (10/7/99 RT 52-53.) ~~The evidence further indicates that~~ ~~a~~Regardless of these emission levels, however, additional fuel usage, due to lower plant efficiency from dry or hybrid cooling, would likely require obtaining more offsets for increased air emissions. (Ex. 85, p. 9.) These potential impacts are avoided by the use of wet cooling.

~~Dry cooling also requires a higher (154 feet) cooling tower, which could interfere with air operations. (10/7/99 RT 52-3.)~~ Expert testimony further establishes that

wet cooling allows the project's exhaust stacks to be limited to approximately 130 feet in height. The use of alternative cooling technologies would require higher exhaust stacks which, in turn, could interfere with air operations at the SCLA and result in non-compliance with Federal Aviation Administration regulations.[56] (10/7/99 RT 52-53.) ~~From an efficiency and reliability perspective, the higher parasitic loads associated with the use of dry or hybrid cooling would decrease the power plant's power output and its efficiency -- the former in the range of 20 to 30 MW and the latter in the range of 2 to 3 percent. (9/16/99 RT 114, 116, 174-75; 10/8/99 RT 163; Ex. 85.)~~

The evidence also shows that the use of dry cooling would likely require a larger plant site. (9/16/99 RT 111-13.) Noise levels would also increase (on the order of 5-15 dBA)~~,~~ but, because of the distance from sensitive receptors, this increased level would not likely create a significant impact. (Ex. 85; see also 9/16/99 RT 49-50.) While the use of dry cooling would reduce visual impacts from visible plumes, the estimated 8 percent of the time that plumes would be visible from wet cooling towers is insignificant in any event. (9/16/99 RT 281-3.) Dry cooling would also require larger, more visually prominent cooling towers. The major components of the project's waste stream would remain the same, although the use of dry cooling would generate a lesser level of wastes. (9/16/99 RT 195; Ex. 85; see also, 2/18/00 RT 61-62.)

Testimony offered on behalf of Applicant indicates that the cooling water will be used to its maximum efficiency since the project is designed with water treatment systems to treat and capture effluent which is then reused. (9/16/99 RT 107-08.) Dry cooling could, however, reduce project cooling water consumption by approximately 95 percent. (Ex. 85, p. 7.) Staff witnesses testified, ~~however~~ moreover, that from a water conservation perspective, dry or hybrid cooling would be appropriate and preferable. (9/16/99 RT 159; 10/8/99 RT 143.) Staff did not, however, recommend that the HDPP

[56] Limiting exhaust stack height to approximately 130 feet is necessary to prevent intrusion into transitional airspace at the SCLA, as required by FAA regulations. The stack height limitation was discussed at the September 30, 1999 evidentiary hearing (9/30/99 RT 75-83, 158-59), and is further addressed in the Traffic and Transportation section of this Decision, *infra*.

be required to use dry cooling. (2/18/00 RT 64, 67; Ex. 146A; compare with Ledford's 1/5/00 comments on PMPD, pp. 21-23.) Finally, the use of dry cooling would eliminate any potential impacts to riparian habitat along the Mojave River. (10/7/99 RT 143-44.)

2. Discussion of the Evidence

The evidence of record clearly establishes that the use of dry or hybrid cooling is technologically feasible for the proposed project. (9/16/99 RT 115, 171; 10/8/99 RT 163; Ex. 85, p. 12.) The evidence also establishes that the project, as proposed with wet cooling, needs a consistent source of water in order to operate reliably. We note that dry cooling will be employed on the recently certified Sutter Power Project (Docket No. 97-AFC-2) and is proposed for use on the pending Otay Mesa project (Docket No. 99-AFC-5). (9/16/99 RT 97: 8-10; 10/8/99 RT 160-61.) Additionally, at the February 18, 2000 hearing, Mr. Ledford submitted information concerning a Nevada power plant, situated in climatic conditions apparently similar to those of the HDPP, which will use dry cooling. (2/18/00 RT 74-76.) These facts suggest that the use of dry or hybrid cooling is economically acceptable, at least for certain projects at certain sites. These matters are beyond reasonable dispute.

Applicant has chosen, however, to design the project with wet cooling towers, in other words to use water for cooling when it is available, and has knowingly assumed the risk of curtailing project operations should cooling water not be available. (9/16/99 RT 165-66, 170; 2/18/00 RT 47-48.) This decision is apparently founded upon an economic and engineering evaluation (9/16/99 RT 113; 2/18/00 RT 56-60), and Applicant believes the HDPP will create a margin of economic profits which would be unacceptably diminished were dry cooling mandated. (2/18/00 RT 58; Ex. 143.) ~~and,~~

~~i~~In the current competitive and deregulated electricity market, the risks are borne by private developers, and the Applicant's economic choices are not ours to second guess~~.~~ where, as here, the overall evidence indicates that all environmental impacts

will be reduced below a level of significance.[57] Similarly, the observation that the Applicant has not proven the economic *infeasibility* of dry cooling (see, e.g., 2/18/00 RT 63; Ex. 146A) suggests that Applicant be required to "prove a negative." This is logically unnecessary, especially in light of the acknowledgement that, in the present instance, the choice of cooling technologies is ultimately the developer's. (2/18/00 RT 64, 67; Ex. 146A.)

~~The evidence of record does not persuasively establish whether or not the use of dry or hybrid cooling is economically prohibitive since the record does not contain a detailed economic analysis of this privately funded project. We note, however, that dry cooling will be employed on the recently certified Sutter Power Project (Docket No. 97-AFC-2) and is proposed for use on the pending Otay Mesa project (Docket No. 99-AFC-5). (9/16/99 RT 97: 8-10; 10/8/99 RT 160-61.)~~

In the present circumstance we believe the appropriate inquiry is not whether Applicant *could* ~~or *should*~~ use an alternative cooling technology, but rather whether it *must*. In this context, the question becomes whether the use of dry or hybrid cooling would prevent or avoid residual significant environmental impacts caused by the use of the proposed wet cooling technology. We believe we have answered this question in the preceding portion of this Decision relating to impacts upon water resources. Furthermore, as summarized above, we have examined the comparative impacts of possible cooling technologies and note that credible evidence indicates that the use of alternative systems would increase the level of certain impacts or cause nonconformance with applicable regulations. We are persuaded that, as the evidence of record as a whole shows, mitigation measures required by the various Conditions of Certification will reduce all impacts attributed to the project in general, and to the use of the wet cooling technology in particular (10/8/99 RT 167: 17-21), to below a level of significance~~.[58]~~

[57] Particularized costs could, however, be relevant were we called upon to evaluate the feasibility of a necessary mitigation measure, or in an override situation.

~~[58] We note that the evidence of record analyzes, but does not recommend, the use of dry or hybrid cooling technologies. (See, e.g. 9/16/99 RT 160, 177:6-11.)~~

FINDINGS and CONCLUSIONS

Based upon the persuasive weight of the evidence of record, we find and conclude as follows:

1. It is technologically feasible to use either a dry or hybrid wet/dry cooling system at the High Desert Power Project.

2. The use of dry or hybrid wet/dry cooling systems would substantially reduce the use of cooling water by the High Desert Power Project, but would increase the level of other impacts.

3. The use of either dry or hybrid wet/dry cooling systems would increase capital, operating, and maintenance expenditures, and lessen power plant efficiency and output.

4. ~~The evidence of record does not~~ Because all environmental impacts will be reduced to below a level of significance, it is not necessary to establish whether or not the increased capital, operating, and maintenance expenditures and decreased power plant efficiency and output referred to in Finding 3, above, render the use of dry or hybrid wet/dry cooling systems economically infeasible for use at the High Desert Power Project.

5. The evidence of record indicates that the decision to use the wet cooling tower technology at the High Desert Power Project is largely an economic and engineering decision by Applicant.

6. All direct, indirect, or cumulative environmental impacts attributable to the High Desert Power Project have been reduced to below a level of significance through the Conditions of Certification contained in this Decision.

We therefore conclude that the use of a dry or hybrid wet /dry cooling system at the High Desert Power Project is technologically feasible, but is not necessary in order to reduce any direct, indirect, or cumulative environmental impacts to below a level of significance.

F. TRAFFIC and TRANSPORTATION

In this section, we examine the extent to which the High Desert Power Project will affect the local and the regional transportation systems. In some cases large numbers of construction workers can, over the course of the construction period, increase roadway congestion and affect traffic flow. Trenching and other activities associated with building the project's linear facilities may also prove disruptive, as can the transportation of large pieces of equipment on local roadways.

Therefore, during these licensing proceedings, we identified: the roads and routings which will be used; potential traffic problems associated with those routings; the anticipated number of deliveries of oversized/overweight equipment; anticipated encroachments upon public rights-of- way; the frequency of, and routes associated with, delivery of hazardous materials; and the availability of alternative transportation methods. In addition, because of the power plant's specific location, we also examined the potential of the project's direct or indirect impacts to air operations and navigation at the Southern California Logistics Airport (SCLA).

1. Summary and Discussion of the Evidence

Surface Roads. Victorville is located within the High Desert Subregion of California, approximately 41 miles north of San Bernardino. Barstow is located 36 miles to the north; Lancaster and Palmdale, 45 and 50 miles to the east, respectively. The area is linked to the local and regional markets through a number of highways, major local roadways, and air and rail transportation.

Regional access is provided to the project site by U.S. 395, Interstate 15 (I-15), and Palmdale Road (State Route 18). These three roadways have been designated by the San Bernardino Associated Governments as roadways of regional significance. Other roadways providing regional access include Air Base Road (extending westerly from the SCLA to U.S. 395), Village Drive (extending southerly from Air Base Road to I-15), and

National Trails Highway (Route 66; also extending southerly from Air Base Road to I-15). (Exs. 1, section 5.4-4; 82, p. 139; see Traffic and Transportation Figure 1.) The project site is linked to the City of Victorville by a combination of Air Base Road, Phantom Street, Cory Boulevard, and Village Drive or National Trails Highway.

The evidence of record indicates that level of service (LOS) measurements are typically used to evaluate a project's potential impact on the local transportation system. Essentially LOS measurements represent the flow of traffic. These range from A (free flowing traffic) to F (heavily congested with stoppage of traffic flow). LOS can be determined through two related means: intersection capacity utilization (ICU) and roadway segment vehicle to capacity (V/C) ratios. (Ex. 82, p. 142.) Available data indicate LOS in the project area (prior to the closure of George Air Force Base) as shown on Table 1, below.

TRANSPORTATION Table 1

Roadway Segment Level of Service

Segment	Description	A.M. Peak		P.M. Peak		Average	
		V/C	LOS	V/C	LOS	V/C	LOS
SR-18	Amargosa Rd. and I-15 (SB)	N/A	N/A	N/A	B	N/A	N/A
US-395	El Mirage and Airbase Roads	N/A	N/A	N/A	B	N/A	N/A
US-395	Airbase Road and SR-18	N/A	N/A	N/A	A	N/A	N/A
US-395	SR-18 and I-15	N/A	N/A	N/A	A	N/A	N/A
I-15 (NB)	Jct. Rte. 18 WB and Mojave Dr.	N/A	B	N/A	C	N/A	N/A
I-15 (NB)	Mojave Dr. and SR-18 (D Street)	N/A	B	N/A	C	N/A	N/A
I-15 (SB)	Jct. Rt. 18 WB and Mojave Dr.	N/A	B	N/A	B	N/A	N/A
I-15 (SB)	Mojave Dr. and SR-18 (D St.)	N/A	C	N/A	B	N/A	N/A
SR-18	Amargosa Rd. and Jct. US 395	N/A	N/A	N/A	N/A	N/A	E
Sr-18	Jct. US 395 and L.A. Co. Line	N/A	N/A	N/A	N/A	N/A	D
US-395	I-15 and SR-18	N/A	N/A	N/A	N/A	N/A	E
US-395	SR-18 and Airbase Rd.	N/A	N/A	N/A	N/A	N/A	E
US-395	El Mirage Rd. and County Line	N/A	N/A	N/A	N/A	N/A	E

Airbase Rd.	US 395 to Adelanto Rd.	N/A	N/A	N/A	N/A	.67	B
Airbase Rd.	Adelanto Rd. to Phantom Rd.	N/A	N/A	N/A	N/A	.67	B
Airbase Rd.	Phantom Rd. to Village Dr.	N/A	N/A	N/A	N/A	.24	A
Airbase Rd.	Village Dr. to Rt. 66	N/A	N/A	N/A	N/A	.48	A

Source: Exhibit 82, p. 143

Testimony sponsored by Applicant establishes that it began its evaluation of traffic and transportation impacts by reviewing documentation of existing traffic volumes and LOS, followed by developing forecasts of both short-term construction and long-term operational traffic attributable to the project. Applicant then evaluated the potential impacts of those traffic increases upon available roadway capacity and LOS, including the potential impacts of moving major pieces of equipment or hazardous materials to the site. (9/30/99 RT 51.) As a result, Applicant concluded that the project's traffic impacts, including potential cumulative impacts, would be minimal when compared to available roadway capacities and LOS since the traffic volumes associated with the project are less than what would typically be experienced in daily traffic fluctuations. (9/30/99 RT 52, 54-55.)

TRAFFIC AND TRANSPORTATION

FIGURE 1

Regional Transportation Access

Source: Exhibit 1

Testimony sponsored by Staff's witness indicates that LOS "C" is the established threshold for local urban roadways and LOS "E" for roadways of regional significance. At most, 370 vehicle trips would be generated during the project construction period, with 56 daily vehicle trips during the operational phase. These traffic flows would not cause a decline in the LOS past the threshold levels. (Ex. 82, pp.144-45; see also 9/30/99 RT 57.) Similarly, construction of the linear facilities is short term in nature and will not cause significant impacts. (Ex. 82, pp. 148-49.)

The evidence of record also recognizes that the transportation and handling of hazardous substances associated with the project's operational phase can increase the roadway hazard potential. The evidence indicates that the potential truck routes used for the delivery of aqueous ammonia (I-15 to U.S. 395 north for approximately nine miles to Adelanto Road, then to Airport Boulevard east to El Evado Road; and State Highway 15 to National Trails Highway, then approximately two miles north to Air Base Road west to El Evado Road) are adequately designed to safely accommodate this traffic. Moreover, commercial trucks transporting hazardous materials must comply with state and federal regulations addressing safety considerations for the transport of such goods, materials, and substances over public highways. (Ex. 84; see also 9/30/99 RT 86.)

Airport Operations. The exhaust stacks associated with the HDPP would be located approximately 1700 feet from the centerline of Runway 21 at the SCLA. These stacks possess the potential to intrude into the imaginary horizontal and transitional airspaces, thus posing a hazard to airport operations. In addition, the thermal plume emitted from the combustion turbine exhausts could create instability and hazardous air navigation conditions for small aircraft landing on Runway 21. (Ex. 82, pp. 145-47.)

The initially proposed height of the exhaust stacks (175 feet above grade level) gave rise to the first concern noted above. At 175 feet high, the stacks would have intruded into the horizontal imaginary surface. Applicant, however, decided to reduce the stack height to 130 feet. (9/30/99 RT 158-59; Ex. 129.) The evidence establishes that stacks

at this reduced height will likely comply with Federal Aviation Administration (FAA) criteria and cause no aviation hazard. (9/30/99 RT 74-77; Ex. 82, pp. 146-47.) Applicant will file an updated application for the 130 foot height with the FAA. (9/30/99 RT 159.)

The testimony of record further indicates that it is unlikely that visible plumes would obstruct the runways. (9/30/99 RT 65-67, 78.) The evidence also indicates that thermal plumes from the exhaust stacks and the cooling towers will rapidly dissipate and not be discernible to approaching aircraft. (9/30/99 RT 77-78; Ex. 82, pp. 148-49.)

Finally, on cross-examination, Intervenor Gary Ledford inquired whether the traffic attributable to this project would create or contribute to a cumulative adverse impact. The evidence of record concerning the project' s traffic impacts persuasively indicates that it will not. (9/30/99 RT 72; see also Ex. 82, p. 149.)

FINDINGS and CONCLUSIONS

Based upon the evidence of record, we find and conclude as follows:

1. Construction and operation of the High Desert Power Project will cause increased traffic on roadways in the local and regional areas.

2. The roadway capacities in the local and the regional areas are sufficient to satisfactorily absorb the increased traffic occasioned by the construction and the operation of the High Desert Power Project.

3. All potential adverse impacts from the transportation and the handling of hazardous substances can be mitigated to a level of insignificance by complying with applicable law.

4. Potential adverse impacts associated with the transportation and handling of hazardous materials during the construction and operation phases will be adequately mitigated by compliance with the Conditions of Certification of this Decision.

5. Impacts upon roadways due to construction activities will be temporary and not significant.

6. Construction and operation of the High Desert Power Project will not cause or contribute to cumulatively significant adverse traffic impacts.

7. The exhaust stacks for the High Desert Power Project will not exceed 130 feet above ground level.

8. The exhaust stacks (at 130 feet in height above ground level) will not create hazards to aviation.

9. The thermal and/or visible plumes from the exhaust stacks and the cooling towers will not create hazards to aircraft using the Southern California Logistics Airport.

10. The Conditions of Certification below ensure that construction and operation of the High Desert Power Project will comply with applicable laws, ordinances, regulations, and standards.

We therefore conclude that construction and operation of the project will not result in significant direct, indirect, or cumulative adverse impacts to the area's transportation system.

CONDITIONS of CERTIFICATION

TRANS-1 The project owner shall comply with California Department of Transportation (Caltrans) Cities' of Victorville and Adelanto, and San Bernardino County limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for both rail and roadway use.

Verification: In monthly compliance reports, the project owner shall submit copies of any oversize and overweight transportation permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six (6) months after the start of commercial operation.

TRANS-2 The project owner or its contractor shall comply with California Department of Transportation (Caltrans), cities of Victorville and Adelanto, and San Bernardino County limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In monthly compliance reports, the project owner shall submit copies of any encroachment permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting

documentation in its compliance file for at least six (6) months after the start of commercial operation.

TRANS-3 The project owner shall ensure that all federal and state regulations for the transport of hazardous materials are observed.

Verification: The project owner shall include in its monthly compliance reports copies of all permits and licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 The project owner shall submit a copy of the letter from the Federal Aviation Administration verifying compliance of the project with Part 77 requirements.

Verification: Prior to commencing construction, the project owner shall submit to the CPM the required FAA letter.

TRANS-5 The project owner shall submit a copy of the final "as-built" construction drawings of the HRSG emission stacks, indicating the stack height.

Verification: Prior to commencing construction, the project owner shall submit to the CPM the required drawings described above.

TRANS-6 Prior to the start of construction, the project owner shall consult with the appropriate agencies and prepare a construction traffic control plan and implementation program which includes addressing the timing of heavy equipment and building materials deliveries, as well as signing, lighting and traffic control device placement for natural gas pipeline and transmission line construction.

Verification: Thirty (30) days prior to commencing construction, the project owner shall provide to the CPM for review and approval a copy of its construction traffic control plan and implementation program.

G. VISUAL RESOURCES

Visual resources are the natural and the cultural features of the environment that one sees. Visual quality is the value of these visual resources. Scenic resources are those visual resources that contribute positively to visual quality. Under this topic, it is thus relevant to assess whether the project will create a substantial intrusion upon the viewshed.

1. Summary and Discussion of the Evidence

The landscape in the vicinity of the HDPP is characterized by vast tracts of largely level, arid lands with low scrub or no vegetation, punctuated by periodic, abruptly rising, often unvegetated mountain ranges. Typical landcover in the project region is creosote scrub and Joshua tree woodland; the latter distinctive vegetation type is unique to this portion of the Mojave Desert and is common locally. The project site (within the northeastern boundary of the SCLA) is a highly developed area including both large industrial and commercial structures, as well as large areas of vacant residences. The site itself is virtually flat with very little existing vegetation. (Ex. 82, pp. 180-81.)

To the west of the SCLA the most scenic views are those facing the San Gabriel Mountains. Views toward the site from the west include a backdrop of scenic mountains. East of the site, the Mojave River Valley, against the background of Quartzite Mountain and associated hills, is the dominant landscape feature. It is characterized by tall, extensive cottonwood/willow riparian woodland, green agricultural fields, and largely undeveloped mountain peaks. Views from the east toward the site include panoramas of the river valley with a backdrop of steep, undeveloped slopes rising to the plateau west of the river. Views from the south of the SCLA are dominated by former air base development, as well as other residential, commercial, and industrial development including visually dominant existing electrical transmission lines. (Exs. 1, section 5.9-10 to 5.9-11; 82, pp. 181-82.)

Potentially sensitive receptors include residents in Oro Grande and in the rural area along the eastern side of the Mojave River, travelers on National Trails Highway (Route

66), residents in various locations in the City of Adelanto to the west, and residents in various locations within the City of Victorville to the south.

Visual resource effects on the identified sensitive receptors were evaluated from "Key Observation Points" (KOPs; see Visual Resources Figure 1 and Table 1, following). The KOPs are representative of project views in the local area. The evidence supporting the visual analyses of record indicates that the significance of a visual impact depends upon the susceptibility of viewers to the impact and the severity of the impact. The visual evaluation also includes potential impacts resulting from project lighting, plumes, and construction. The evidence establishes that the most visually prominent elements of the power plant would be the cooling tower banks, the HRSGs, and the exhaust stacks. [58] In addition, the 7.2 mile single circuit 230 kV transmission line would be strung on a combination of lattice towers and steel poles, each approximately 130 feet tall. (Ex. 82, p. 180.)

[58] The 3F configuration would include three cooling tower banks, each approximately 50 feet wide, 50 feet tall, and 300 feet long. The HRSG unit would be approximately 150 feet long and 90 feet tall. Each of the three exhaust stacks would be approximately 130 feet tall and 18 feet in diameter. The 2G configuration would include two cooling banks instead of three. Each bank would be approximately 50 feet wide, 50 feet tall, and 360 feet long. The HRSG unit would be 170 feet long and approximately 100 feet tall. Each of the two exhaust stacks would be approximately 130 feet tall and 22 feet in diameter. (Ex. 82, p. 180; 9/16/99 RT 276.)

VISUAL RESOURCES FIGURE 1

Source: Exhibit 82

VISUAL RESOURCES Table 1
Key Observation Points (KOP)

KOP Number	Description
1	Taken from the corner of Air Base Road and Adelanto Road looking northeast at the project.
2	Taken from residences near the intersection of Adelanto Road and Crippen Avenue looking east to northeast across the runways at the project site.
3	Taken from residences near Highway 395 and Auburn Avenue looking east at the project site.
4	Taken from the Oro Grande area, east of the project site, looking west at the project site.
5	Taken from the Oro Grande area, east of the project site, looking southeast at the proposed transmission line.
6	Taken from the Oro Grande area, east of the project site, looking southeast at the proposed transmission line.
7	Looking east from near where the proposed transmission line would cross Air Base Road.
8	Looking west from near where the proposed transmission line would cross Air Base Road.
9	Looking east from the closest residences located near the intersection where the proposed transmission line would cross Mojave Drive.
10	Looking west from the closest residences located near the intersection where the proposed transmission line would cross Mojave Drive.
11	Looking east from the point where the proposed transmission line changes from going almost due south to where it begins going southwest.
12	Looking west from the residences closest to the eastern side of the proposed transmission line and near the point where it changes from going almost due south to where it begins going southwest.
13	Taken from the road perpendicular to Seneca Road from the residences looking toward Victor Substation.
14	Looking east from US Highway 395 (and including the last tower going into Victor Substation from the existing transmission line).
15	Looking east from Victor Substation looking at the substation.
16	Taken from the elementary school located within the SCIA boundaries looking in the direction of the project site.
17	Taken from the eastern edge of the SCIA golf course looking at the proposed transmission line.
18	Taken from Rancho and El Evado Roads looking at residences located in the Mojave Heights area.
19	Taken from the National Trails Highway looking west at the VVWRA pipeline route.
20	Taken from the northern section of El Evado Road looking east toward the Mojave River Valley and Quartzite Mountain.

Source: Exhibit 82, p. 184.

The "susceptibility" to visual impacts is determined by evaluating the existing visual quality, and viewer sensitivity, visibility, and exposure to the source of a potential impact. The susceptibility from the KOPs to visual intrusions is summarized on Table 2, below.

VISUAL RESOURCES Table 2
Visual Impact Susceptibility - Key Observation Points

	VISUAL QUALITY	VIEWER SENSITIVITY	VISIBILITY	VIEWER EXPOSURE	VISUAL IMPACT SUSCEPTIBILITY
Key Observation Point 2	Moderate	High	Moderate	Moderate	Moderate
Key Observation Point 3	Moderate-to-High	High	High	Moderate	Moderate-to-High
Key Observation Points 4, 5, and 6	Moderate-to-High/High*	High	Moderate	High/ Moderate*	Moderate-to-High
Key Observation Point 8	Low	Moderate	Moderate	Moderate-to-High	Low
Key Observation Point 10	Low	High	High	Moderate-to-High	Low
Key Observation Point 17	High	High	High	High	High
Key Observation Point 20	High	High	High	Low	Low

Source: Exhibit 82, p. 186.

- The first value refers to the majority of the area represented by Key Observation Points 4, 5, and 6 and the second value refers to the western portion of that area (see the foregoing text).

The "severity" of a visual impact includes contrast with the existing viewshed, scale and spatial dominance, and view blockage.(Ex. 82, p. 233.) The evidence reflects the severity of visual impacts from the KOPs as shown on Visual Resources Table 3, below.

VISUAL RESOURCES Table 3
Visual Impact Severity - Key Observation Points

	FORM CONTRAST	LINE CONTRAST	COLOR CONTRAST	TEXTURE CONTRAST	SCALE CONTRAST	SCALE DOMINANCE	SPATIAL DOMINANCE	VIEW BLOCKAGE	VISUAL IMPACT SEVERITY
Key Observation Point 2	Structures: L* Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: M Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Negligible	Subordinate to Co-dominant	Weak	Moderate
Key Observation Point 3	Structures: N Vegetation: M Land: L-M	Structures: N Vegetation: M Land: L-M	Structures: N Vegetation: M Land: L-M	Structures: N Vegetation: L Land: L	Structures: N Vegetation: L Land: L	Subordinate	Subordinate to Co-dominant	Weak	Moderate
Key Observation Points 4, 5, and 6	Structures: L Vegetation: L Land: L~~-M~~	Structures: L Vegetation: L Land: L~~-M~~	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Subordinate	Co-dominant	Moderate	Moderate
Key Observation Point 8	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Co-dominant	Co-dominant	Weak	Strong
Key Observation Point 10	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Structures: L Vegetation: L Land: L	Co-dominant	Co-dominant	Weak	Strong
Key Observation Point 17	Structures: M Vegetation: H Land: H	Structures: L Vegetation: H Land: H	Structures: L Vegetation: M Land: M	Structures: M Vegetation: H Land: M	Structures: M Vegetation: L Land: H	Dominant	Dominant	Moderate	Very Strong
Key Observation Point 20	Structures: N Vegetation: H Land: H	Structures: N Vegetation: H Land: H	Structures: N Vegetation: M Land: M	Structures: N Vegetation: M Land: M	Structures: N Vegetation: H Land: H	Dominant	Dominant	Moderate	Very Strong

* L = Low; M = Moderate; H = High; N = None

Source: Exhibit 82, p. 187

Based upon these evaluative techniques, the evidence indicates the following resultant impacts from affected KOPs before the application of any mitigation measures.

VISUAL RESOURCES Table 4

Visual Impacts Before Mitigation - Key Observation Points

	VISUAL IMPACT SUSCEPTIBILITY	VISUAL IMPACT SEVERITY	VISUAL IMPACT
Key Observation Point 2	Moderate	Moderate	Less than significant
Key Observation Point 3	Moderate-to-High	Moderate	Less than significant
Key Observation Points 4, 5, and 6	Moderate-to-High	Moderate	Less than Significant
Key Observation Point 8	Low	Strong	Insignificant
Key Observation Point 10	Low	Strong	Insignificant
Key Observation Point 17	High	Very Strong	Significant
Key Observation Point 20	Low	Very Strong	Less than Significant

Source: Exhibit 82

The evidence of record establishes, however, that measures contained in the Conditions of Certification will suffice to reduce the potential for adverse visual impacts to an acceptable level. These measures include painting the project to blend with the background sky, installing non-reflective fencing, and developing a lighting plan to reduce the visibility of the project at night. Construction activities will be short-term and the staging and material storage areas will be located outside the immediate foreground of sensitive receptors. The transmission line support structures will be located to minimize obstruction of principal view corridors from the SCLA Golf Course.(Ex. 197-99.)

Cooling tower plumes from the project will be visible approximately eight percent of the time. (9/16/99 RT 282-83; Ex. 82, pp. 194-95.) The expert witness testified that visibility of these plumes, given the distance of the site from populated areas, would not constitute a significant impact. (9/16/99 RT 282-83.) Although construction of additional large-scale facilities near the power plant could have a noticeable cumulative effect on sensitive receptors, the evidence indicates that no additional facilities are known to be planned. (9/16/99 RT 283-84; Ex. 82, p.196.)

FINDINGS and CONCLUSIONS

Based upon the evidence of record, we find and conclude as follows:

1. The High Desert power plant will be constructed on a presently disturbed site.

2. The cooling tower plumes from the High Desert power plant will be visible approximately eight percent of the time.

3. The Conditions of Certification require the implementation of mitigation measures sufficient to reduce the visual impacts of the High Desert Power Project and its related facilities to below a level of significance.

4. The High Desert Power Project will not contribute to a significant adverse cumulative visual impact.

We therefore conclude that construction and operation of the High Desert Power Project will not cause any significant direct, indirect, or cumulative adverse visual impacts.

CONDITIONS of CERTIFICATION

VIS-1 Prior to the start of commercial operation, the project owner shall treat the project structures, buildings, and tanks visible to the public in a non-reflective moderately light blue color to blend with the background sky. The project owner shall treat the exhaust stacks with a heat-resistant color that minimizes contrast and harmonizes with the surrounding environment.

<u>Protocol:</u> The project owner shall submit a treatment plan for the project to the California Energy Commission Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

- specification, and 11” x 17” color simulations, of the treatment proposed for use on project structures, including structures treated during manufacture;

- a detailed schedule for completion of the treatment; and

- a procedure to ensure proper treatment maintenance for the life of the project.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall submit to the CPM a revised plan.

After approval of the plan by the CPM, the project owner shall implement the plan according to the schedule and shall ensure that the treatment is properly maintained for the life of the project.

For any structures that are treated during manufacture, the project owner shall not specify the treatment of such structures to the vendors until the project owner receives notification of approval of the treatment plan by the CPM.

The project owner shall not perform the final treatment on any structures until the project owner receives notification of approval of the treatment plan from the CPM.

The project owner shall notify the CPM within one (1) week after all precolored structures have been erected and all structures to be treated in the field have been treated and the structures are ready for inspection.

Verification: Not later than thirty (30) days prior to ordering the first structures that are color treated during manufacture, the project owner shall submit its proposed plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification, the project owner shall submit to the CPM a revised plan.

Not less than thirty (30) days prior to the start of commercial operation, the project owner shall notify the CPM that all structures treated during manufacture and all structures treated in the field are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-2 Any fencing for the project shall be non-reflective.

~~At least thirty (30) days prior to ordering the fencing the project owner shall submit to the CPM for review and approval the specifications for the fencing documenting that such fencing will be non-reflective.~~

Protocol: At least thirty (30) days prior to ordering the fencing the project owner shall submit to the CPM for review and approval the specifications for the fencing documenting that such fencing will be non-reflective. If the CPM notifies the project owner that revisions of the specifications are needed before the CPM will approve the submittal, the project owner shall submit to the CPM revised specifications.

The project owner shall not order the fencing until the project owner receives approval of the fencing submittal from the CPM.

The project owner shall notify the CPM within one (1) week after the fencing has been installed and is ready for inspection.

Verification: At least thirty (30) days prior to ordering the non-reflective fencing, the project owner shall submit the specifications to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within thirty (30) days of receiving that notification the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within seven (7) days after completing installation of the fencing that the fencing is ready for inspection.

VIS-3 Prior to the start of commercial operation, the project owner shall design and install all lighting such that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized. To meet these requirements:

Protocol: The project owner shall develop and submit a lighting plan for the project to the CPM for review and approval. The lighting plan shall require that:

- Lighting is designed so that exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of this outdoor lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;

- High illumination areas not occupied on a continuous basis such as maintenance platforms or the main entrance are provided with switches or motion detectors to light the area only when occupied;

- A lighting complaint resolution form (following the general format of Attachment A) will be used by plant operations to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

Lighting shall not be installed before the plan is approved. The project owner shall notify the CPM when the lighting has been installed and is ready for inspection.

Verification: At least ninety (90) days before ordering the exterior lighting, the project owner shall provide the lighting plan to the CPM for review and approval. The CPM will notify the project owner of approval or disapproval within fifteen (15) days of receipt of the lighting plan.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised plan.

The project owner shall notify the CPM within seven (7) days of completing exterior lighting installation that the lighting is ready for inspection.

VIS-4 The project owner shall locate all transmission line construction staging and material storage areas outside of the immediate foreground (one-eighth mile or less) of sensitive receptors including residences and public roads, and particularly, of sensitive receptors in BLM Class II areas[59] such as the SCLA golf course. Where transmission line construction staging and material storage areas are visible within one-quarter mile of sensitive receptors in BLM Class II areas, the project owner shall minimize ground disturbance, and shall stock and respread topsoil, and revegetate with native vegetation after completion of construction.

Protocol: At least ninety (90) days prior to the start of construction of the transmission line, the project owner shall submit a map to the CPM for review and approval. The map shall include:

[59] Class II is a category in the U.S. Bureau of Land Management's Visual Resource Management (VRM) methodology; see Exhibit 1, p. 5.9-3).

- The location of the proposed transmission line route,
- The location of all transmission line construction staging and storage areas and sensitive receptors,
- The location of BLM Class II areas, and
- The location of sensitive receptors within one-quarter mile of transmission line construction staging and storage areas.

The project owner shall not begin construction of the transmission line until the map is approved by the CPM.

If the CPM notifies the project owner that revisions of the map are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised map.

Verification: At least ninety (90) days before the start of construction on the transmission line, the project owner shall provide the map to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the map are needed before the CPM will approve the map, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised map.

VIS-5 The project owner shall locate the electrical transmission poles so as to minimize obstruction of principal view corridors eastward from the SCLA Golf Course.

Protocol: At least ninety (90) days prior to the start of construction of the transmission line, the project owner shall submit a map to the CPM for review and approval. The map shall include:

- The location of the proposed transmission poles in the area of the SCLA Golf Course.

- The location of the primary view corridors eastward from the SCLA Golf Course.

- The project owner shall not begin construction of the transmission line until the map is approved by the CPM.

If the CPM notifies the project owner that revisions of the map are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised map.

The project owner shall not begin construction of the transmission line until the pole staking in the area of the SCLA Golf Course is approved by the CPM.

If the CPM notifies the project owner that revisions of the pole staking are needed before CPM approval, the project owner shall confer with the CPM to develop acceptable pole locations.

Verification: At least ninety (90) days before the start of construction on the transmission line, the project owner shall provide the map to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the map are needed before the CPM will approve the map, within thirty (30) days of receiving that notification the project owner shall submit to the CPM a revised map.

The project owner shall notify the CPM within seven (7) days of staking the pole locations east of the SCLA golf course that the staking is complete and is ready for inspection.

The project owner shall notify the CPM within seven (7) days of the completion of transmission pole installation in the area east of the SCLA Golf Course that the poles are ready for inspection.

ATTACHMENT A

LIGHTING COMPLAINT RESOLUTION FORM

HIGH DESERT POWER PROJECT **Victorville, California**
Complainant's name and address: Phone number:
Date complaint received: Time complaint received:
Nature of lighting complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted:
Description of corrective measures taken: Complainant's signature: _____ Date:
Approximate installed cost of corrective measures: $ Date installation completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct: Plant Manager's Signature:

(Attach additional pages and supporting documentation, as required.)

HIGH DESERT
POWER PROJECT

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

A new, major facility, located in a non-attainment area, is subject to the federal New Source Review (NSR) program. The proposed project is located in an area that is designated as non-attainment for ozone and PM10, and is therefore subject to the NSR requirements for these pollutants. The Mojave Desert Air Quality Management District (District) implements these requirements through its Regulation 13. Under NSR, the HDPP must comply with the Lowest Achievable Emission Rate (LAER) for NOx, PM10, VOC, SO2 and provide offsets for emissions of these pollutants because they contribute directly or indirectly to ambient levels of ozone and PM10. In addition, the applicant must certify that all facilities that are owned and operated by it comply with applicable requirements in the State Implementation Plan.

The HDPP facility is located in an attainment area for NO2, SO2 and CO, and is therefore subject to the federal Prevention of Significant Deterioration (PSD) review for those air contaminants. In general, the project must comply with Best Available Control Technology (BACT) for NO2, SO2 and CO and demonstrate that its emission impacts will not significantly degrade the existing ambient air quality in the region. This program is administered by the Environmental Protection Agency (EPA).

The power plant's gas turbines are also subject to the federal New Source Performance Standards (NSPS). These standards include a NOx emissions concentration of no more than 75 ppm at 15 percent excess oxygen (ppm@15%O2), and a SOx emissions concentration of no more than 150 ppm@15%O2.

STATE

California State Health and Safety Code, Section 41700, requires that: "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerate number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

LOCAL

The proposed facility is subject to the following District rules and regulations:

<u>Rule 102:</u> Prohibits any person from circumventing any applicable section of rules and regulations.

<u>Rule 201:</u> Requires District's authorization prior to construction of the new facility.

Rule 203: Requires District's authorization before commencing operation of the new facility.

Rule 401: Limits the discharge of air contaminants into the atmosphere through visible emissions and opacity.

Rule 402: Protects the public's health and welfare from the emission of air contaminants, which constitute a nuisance.

Rule 403: Regulates operations, which periodically may cause fugitive dust emissions into the atmosphere.

Rule 406: Limits the emissions of sulfur compounds to no greater than 500 ppmv, and other contaminants to specific ppmv levels.

Rule 407: Limits CO emissions to 2,000 ppm over a 15-minute averaging period.

Rule 409: Limits discharging of combustion contaminants (PM10) to no greater than 0.1 grains per dry standard cubic foot (gr/dscf).

Rule 431: Limits sulfur content of gaseous fuel to 800 ppm, and liquid or solid fuel to 0.5 percent by weight.

Rule 475: Limits the NOx emissions of any electrical power generating equipment to no more than 80 ppm, 160 ppm and 225 ppm if using gaseous, liquid and solid fuel, respectively.

Rule 476: Limits the emissions of any fuel combustion equipment to no more than 200 pounds per hour of SOx, 140 pounds per hour of NOx, or 10 pounds per hour of combustion contaminants.

Rule 900: Establishes requirements for general definitions, monitoring, records, and administrative requirements applicable to the federal New Source Performance Standard (NSPS).

Also establishes limits for NO2 and SO2 from new or modified stationary gas turbines with a designed heat rate input of 10 MMBtu/hr or more. The proposed turbines' NOx concentrations shall not exceed 75 ppm dry at 15% oxygen, and SO2 concentrations shall not exceed 150 ppm dry at 15% oxygen.

Rule 1000: Establishes the general definitions, monitoring and administrative requirements applicable to the federal National Emission Standards for Hazardous Air Pollutants (NESHAP).

Rule 1158: Establishes NOx emission standards and other requirements for electric utility operations, including installation of an approved continuous emission monitoring system, reporting and an approved emission control plan.

Rule 1200: Establishes administrative requirements for obtaining a federal operating permit (Title V operating permit).

Rule 1300: Provides general discussions of the NSR purposes, applicability, exemption, and interaction with other Federal, State and District rules, regulations and plans. The NSR applies to all new and modified stationary sources that are required to have permits to construct and operate within the Mojave Desert AQMD.

Rule 1301: Provides various definitions for the NSR regulations.

Rule 1302: Provides administrative procedures for the processing of applications for permits to construct and operate of new and modified stationary sources.

Section 1302 (C)(3) "Determination of Offsets", part (b) states "[u]pon receipt of the notification [from the district regarding specific amount and type of offset required], the applicant shall provide the APCO a proposed Offset package which contains evidence of Offset eligibility for use pursuant to the provisions of District Rule 1305."

Section 1302 (C)(3)(b)(iii) also states "[a]fter determining that the Offsets are real, enforceable, surplus, permanent and quantifiable and after any permit modifications required pursuant to District Rule 1305 or Regulation XIV have been made, the APCO shall approve the use of the Offsets subject to the approval of CARB and USEPA during the comment period required pursuant to subsection (D)(2) below."

Rule 1303: Provides specific requirements for new or modified stationary sources including Best Available Control Technology (BACT) and offsets.

Rule 1304: Provides methods to calculate emissions changes from the new or modified stationary sources.

Rule 1305: Provides the procedures and formulas for quantifying and determining the eligibility of emission reduction credits (ERC) available for use as offsets in accordance to Rule 1303.

Rule 1306: Provides administrative requirements for new or modified power plants that are required to obtain licensing from the California Energy Commission.

Rule 1401: Provides various definitions for the banking rules.

Section (N) defines the historic actual emissions of a facility would be its emissions averaged from the most recent two year period, or from any two years of the previous five years, prior to the date of application for ERC.

Rule 1402: Provides administrative procedures for the registration of ERC for stationary sources. The requirements include the specific timing of an application for ERC and criteria for approval of ERC.

Section (A)(1)(e)(ii) defines that emission reductions can be eligible for ERC if such reductions are actual emission reductions and be either recognized by the District in writing and were included in the emission inventory after the shut down or modification occurred.

Section (B)(1)(c)(i) requires that an application for ERC for emission reductions, which occurred prior to June 28, 1995 must be submitted within one year after June 28, 1995.

Section (B)(1)(c)(iii) requires a timely application for ERC for military bases subject to closure or realignment shall be determined pursuant to the provisions of State Health and Safety Code (H&SC) 40709.7. H&SC 40709.7 states that the ERC may only be used for base reuse within the jurisdiction of the District.

Section (C)(1) requires that ERC must be real, enforceable, permanent, quantifiable and surplus.

Rule 1404: Provides methods to calculate the ERC available, which according to Section (A)(2)(c), shall be the difference between the historical actual emissions and the proposed emissions.

BIOLOGICAL RESOURCES

FEDERAL

- The Endangered Species Act of 1973 (16 U.S.C., §1531 et seq.), and implementing regulations, (C.F.R.) §17.1 et seq.), designate and provide for protection of threatened and endangered plants and animals and their critical habitat.

- The Clean Water Act (33 U.S.C. § 404 et seq) prohibits the discharge of dredged or fill material into the waters of the United States without a permit. An individual 404 permit is required to fill more than 3 acres. Nationwide permit (NWP) 26 is required to fill 3 acres or less of wetlands and NWP 12 is required for utility line placement near waters of the U.S. causing temporary discharge of material. The statute requires water quality assessment when issuing 404 permits and for discharges into waters of the United States.

STATE

- The California Endangered Species Act, (Fish & G. Code, §2050 et seq.), protects California's endangered and threatened species. The implementing regulations list animals of California declared to be threatened or endangered(Cal. Code Regs., tit.14, §670).

- Fish and Game Code section 1603 requires that any person planning to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by the department, or use any material from the streambeds, must notify the department prior to such activity so that the Department can carry out its mandate by proposing measures necessary to protect the fish and wildlife.

- Fish and Game Code sections 3511, 4700, 5050 and 5515, prohibit the taking of birds, mammals, reptiles and amphibians, and fishes respectively listed as fully protected in California.

- Fish and Game Code sections 1900 et seq., give the Department authority to designate state endangered and rare plants and provides specific protection measures for identified populations.

LOCAL

- Title 8 of the San Bernardino County Code specifies that Joshua tree removal be by permit only. Joshua trees proposed for removal must be transplanted or stockpiled for future transplantation.

- The Victorville Municipal code, Chapter 1333, requires a permit from the Director of Parks and Recreation prior to the destruction or removal of Joshua trees.

CULTURAL RESOURCES

FEDERAL

- Antiquities Act of 1906, Title 16, United States Code, Sections 431, 432, and 433, and subsequent related legislation, policies, and enacting responsibilities.

- National Historic Preservation Act (NHPA), Title 16, United States Code, Section 470, establishes a national policy to preserve for public use historic sites, buildings, and objects of national significance for the inspiration and benefit of the people of the United States.

- Executive Order 11593, "Protection of the Cultural Environment," May 13, 1971, 36 Federal Register, 8921: orders the protection and enhancement of the cultural environment through providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

- National Environmental Policy Act (NEPA): Title 42 United States Code, Sections 4321-4327; requires federal agencies to consider potential environmental impacts of projects with federal involvement and requires application of appropriate mitigation measures.

- Federal Land Policy and Management Act (FLPMA): Title 43 United States Code, Section 1701-1784: requires the Secretary of Interior to retain and maintain public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric water resource, and archeological values; the Secretary, with respect to the public lands, shall promulgate rules and regulations to carry out the purposes of this Act and of other laws applicable to public lands.

- Historic and Archaeological Data Preservation Act, Title 16, United States Code, Section 469, provides for the protection of archaeological resources as a result of construction of a dam or alteration of terrain caused by the federal government or a federally-licensed project.

- American Indian Religious Freedom Act; Title 42 United States Code, Section 1996: protects Native American religious practices, ethnic heritage sites, and land uses.

- Native American Graves Protection and Repatriation Act (1990); Title 25, United States Code Section 3001, *et seq.*: defines "cultural items", "sacred objects", and "objects of cultural patrimony"; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.

STATE

- Public Resources Code, Section 5020.1 -- defines several terms, including the following:

  > (j) "Historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
  >
  > (k) "Substantial adverse change" means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

- Public Resources Code, Section 5024.1 -- establishes a California Register of Historic Places; sets forth criteria to determine significance; defines eligible properties; lists nomination procedures.

- Public Resources Code, Section 5097.5 -- any unauthorized removal or destruction of archaeologic or paleontologic resources on sites located on public land is a misdemeanor.

- Public Resources Code, section 5097.98, defines procedures for notification of discovery of Native American artifacts or remains and the disposition of such materials. This section also prohibits obtaining or possessing Native American artifacts or remains taken from a grave or cairn, and sets penalties.

- Public Resources Code, Section 21083.2 -- The lead agency determines whether a project may have a significant effect on unique archaeological resources; if so, an EIR shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, such resources must be avoided; if they can't be avoided, mitigation measures shall be required. The law also discusses excavation as mitigation; discusses the cost of mitigation for several types of projects; sets time frame for excavation; defines "unique and non-unique archaeological resources"; provides for mitigation of unexpected resources; sets limitations for this section.

- Public Resources Code, Section 21084.1 -- indicates that a project may have a significant effect on the environment if it causes a substantial change in the significance of a historic resource; the section further describes what constitutes a historic resource and a significant historic resource.

- CEQA Guidelines, section 15126.4 "Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects", sub-section (b) "Mitigation Measures Related to Impacts on Historical Resources". Sub-section (1) discusses impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of a historical resource. Sub-section (2) discusses documentation as a mitigation measure. Sub-section (3) discusses mitigation through avoidance of

damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.

- CEQA Guidelines, section 15064.5 "Determining the Significance of Impacts to Archaeological and Historical Resources". Sub-section (a) section defines the term "historical resources". Subsection (b) explains when a project may be deemed to have a significant effect on historic resources and defines terms used in describing those situations. Subsection (c) describes CEQA's applicability to archaeological sites and provides a bridge between the application of the terms "historic resources" and "unique archaeological resources".

- Penal Code, Section 622.5 -- Anyone who damages an object or thing of archaeological or historic interest can be charged with a misdemeanor.

- California Environmental Quality Act (CEQA): Public Resources Code Sections 5020.1, 5024.1, 21083.2, 21084.1, *et seq.* requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

- California Environmental Quality Act (CEQA) Guidelines: "ISSUE V: CULTURAL RESOURCES". There are four questions to be answered in determining the potential for a project to impact archaeological, historic, and paleontologic resources.

LOCAL

Although the Energy Commission has pre-emptive authority over local laws, it typically requires compliance with local laws, ordinances, regulations, standards, plans, and policies.

SAN BERNARDINO COUNTY, GENERAL PLAN

The county's General Plan recognizes the importance of cultural resources on lands over which it has jurisdiction and several goals; policies and actions have been established to address management of these resources. General Plan Goals C-10, C-11, and C-12 address the identification of resources; preservation or data recovery; and avoidance of potential conflicts with Native American beliefs and concerns. Policies / Actions CP-1, CP-2, CP-3, CP-4, and CP-5 set forth procedures to be followed to implement the county's goals. The county has developed specific requirements for the protection of cultural resources and mitigation of potential impacts to such resources. The county requirements are usually effected by placement of conditions on a project during the environmental review process. Refer to Exhibit 1 (AFC) section 5.10.2 for the discussion of the county's General Plan requirements.

CITY OF VICTORVILLE, GENERAL PLAN

The General Plan recognizes the "existence of rich … archaeological resources" in the HDPP project area. City policies 1.3 and 1.4 address cultural resources and they set forth corresponding implementation measures and programs.

FACILITY DESIGN

The Warren Alquist Act requires the Commission to "prepare a written decision . . . which includes . . . (a) Specific provisions relating to the manner in which the proposed facility is to be designed, sited, and operated in order to protect environmental quality and assure public health and safety [and] (d)(1) Findings regarding the conformity of the proposed site and related facilities . . . with public safety standards . . . and with other relevant local, regional, state and federal standards, ordinances, or laws. . . (Pub. Resources Code, §25523).

The applicable LORS proposed by the Applicant are contained in Exhibit 1 (AFC), in Section 7 and Appendices C through H (HDDP 1997b).

The application (HDPP 1997b, AFC Appendix E) lists and describes the mechanical codes, standards and design criteria that will be employed in project design documents, procurement specifications and contracts. Design work will be performed in accordance with the appropriate LORS. This list indicates that the Applicant is aware of the codes, standards, and design criteria appropriate for such a project. The Conditions of Certification ensure compliance. This approach will assure the project's mechanical systems are designed to the appropriate codes and standards.

DESIGN CRITERIA FOR MAJOR STRUCTURES

The AFC (Exhibit 1) section 7.0 and Appendices C and D identify applicable LORS, which include the 1994 Uniform Building code (UBC). Actual design and construction of the project could begin immediately after certification, or could be delayed for a number of years thereafter (Exhibit 1, § 1.3.1).

The project shall be designed and constructed to the latest edition of the CBC (and other applicable codes and standards) in effect at the time design and construction of the project actually commence. It is expected that the HDDP will be designed to the 1998 CBC. In the event the design of the HDDP is submitted to the Chief Building Official (CBO)[1] for review when the successor to the 1998 CBC is in effect, the 1998 CBC provisions identified herein shall be replaced with the applicable successor provisions.

LORS AND ELECTRICAL DESIGN CRITERIA

The Application (Exhibit 1, Appendix F) lists and describes the electrical codes, standards and design criteria that will be employed in project design documents, procurement specifications and contracts. Design work will be performed in accordance with the appropriate LORS. This list indicates that the applicant is aware of the codes, standards, and design criteria appropriate for such a project. This approach will likely assure the project's electrical systems are designed to the appropriate codes and standards.

[1] CBO is the City or County Chief Building Official, his or her representative or the California Energy Commission's duly appointed representative.

LORS AND MECHANICAL DESIGN CRITERIA

The Application (Exhibit 1, Appendix E) lists and describes the mechanical codes, standards and design criteria that will be employed in project design documents, procurement specifications and contracts. Design work will be performed in accordance with the appropriate LORS. This list indicates that the Applicant is aware of the codes, standards, and design criteria appropriate for such a project. The Conditions of Certification will ensure compliance. This approach will assure the project's mechanical systems are designed to the appropriate codes and standards.

HAZARDOUS MATERIALS

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III and Clean Air Act of 1990 established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The Acts (codified in 40 C.F.R., section 68.115, part F) require the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of these Acts are reflected in the California Health and Safety Code, section 25531 et seq.

STATE

The California Health and Safety Code, section 25534 directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local Administering Agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP).

The California Code of Regulations, Title 8, section 5189 requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

California Health and Safety Code, section 41700 requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”

California Government Code, section 65850.2 restricts the issuance of a certificate of occupancy permit to any new facility involving the handling of acutely hazardous materials until the facility has submitted an RMP to the administering agency with jurisdiction over the facility.

LOCAL AND REGIONAL

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. Article 80 was extensively revised in the latest edition. These articles contain requirements that are generally similar to those contained in Health & Safety Code section 25531 et seq. The UFC does, however, contain unique requirements for secondary containment, monitoring, and treatment of toxic gases emitted through emergency venting. These unique requirements are generally restricted to extremely hazardous materials.

The Uniform Building Code (UBC) contains requirements regarding the storage and handling of hazardous materials, in a Seismic Zone 4 area, which restrict the issuance of an occupancy permit until the applicant has demonstrated compliance with section 307.1.6 of the UBC. That section requires a Hazardous Materials Management Plan be completed, which is similar in some respects to the RMP.

The Applicant will comply with all LORS requirements by developing and implementing a Business Plan and a Risk Management Plan as well as designing and constructing the proposed power plant to Seismic Zone 4 specifications and applicable ASME codes.

The Business Plan (Health & Safety Code § 25500 et seq.) must include the basic information on the location, type, quantity, and the health risks of hazardous materials handled, used, stored, or disposed of in the state, which could be accidentally released into the environment. It must also include a plan for training new personnel and for annual training of all personnel in safety procedures to follow in the event of a release of hazardous materials. It must include an emergency response plan and identify the business representative able to assist emergency personnel in the event of a release.

The Risk Management Plan (Health & Safety Code § 25531 et seq.) must identify the severity of an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material.

LAND USE

FEDERAL

- The United States Department of the Air Force, Lease for Airfield Property on George Air Force Base, California; dated April 1994.

- The United States Bureau of Land Management, California Desert Conservation Area (CDCA) Plan; dated 1980, with revisions through 1998; applies to extensive areas of land in the Mojave Desert.

- The United States Bureau of Land Management, Western Mojave Land Tenure Adjustment, Project Record of Decision (LTA): dated January 1991; applies to a parcel of land located along a portion of the northern boundary of the former George Air Force Base (now Southern California Logistics Airport [SCLA]).

LOCAL

Although the Energy Commission has pre-emptive authority over local laws, it typically requires compliance with local laws, ordinances, regulations, standards, plans, and policies. San Bernardino County and each of its cities have developed specific requirements and guidelines for the development and use of lands within their jurisdiction. Associated with the HDPP, the power plant site and many of the proposed linear facilities are located entirely within the corporate boundaries of the City of Victorville. However, linear facilities to serve the HDPP site located along or outside of the Victorville boundaries render other local, as well as federal, agency requirements applicable.

SAN BERNARDINO COUNTY

As shown in the Application for Certification (Exhibit 1), the northern-most portion of the route proposed for the water supply pipeline crosses through land administered by San Bernardino County, for a distance of 0.6 to 1.4 miles. Land use and zoning designations for this portion of the proposed water supply pipeline include rural residential and open space and conservation (San Bernardino County General Plan 1998). Construction of the pipeline in this corridor would normally be subject to a Conditional Use Permit (CUP) from the county. However, Title 8 of the San Bernardino County Code, Chapter 4 Additional Uses, Section 84.0405: Alternate Review Procedure allows for alternative review processes such as the Energy Commission's.

In addition, the San Bernardino General Plan recognizes the need for utility rights-of-way within the County and makes the following recommendation in its Energy/Telecommunications Element: "Consolidate pipeline and transmission line corridors by requiring proposed new facilities to locate in existing corridors to the maximum feasible...(San Bernardino, 1998)."

CITY OF VICTORVILLE

CITY OF VICTORVILLE GENERAL PLAN

The General Plan provides a comprehensive, long-term plan for the physical development of the community and lands located outside its boundary which, in the planning agency's judgment, will effect its planning effort. Zoning ordinances, subdivision ordinances, specific plans, redevelopment plans, city council, planning commission and departmental policies, as well as individual project plan proposals which implement the general plan must be consistent with its goals, policies, and standards.

The planning time horizon for the City of Victorville General Plan is 2015. Four elements of the general plan are directly applicable to the proposed HDPP project. These are the Land Use Element, the Noise Element, the Safety Element, and the Southern California Logistics (International) Airport Community Plan Element (Victorville 1997).

Land Use Element

The land use element of a general plan outlines a city's long-range plans for development within its incorporated boundaries and sphere of influence and it is a policy document used to guide the city's land use decisions to ensure the orderly growth. This general plan element designates the general distribution, location, and extent of various land uses within the city's boundaries and sphere and it includes a statement of population density and building density for the various land use districts (Victorville 1997).

Specific goals identified in the City of Victorville's Land Use Element of the General Plan, and specifically pertinent to the HDPP are:

GOAL 1 Policy 1.1: Industrial development that does not conflict with or adversely affect other existing or potential developments will continue to be encouraged.

Policy 1.5: The City will manage development in a manner that does not conflict with the operations of the Southern California Logistics Airport.

Policy 1.6: Victorville will make efforts to ensure that the integrity of each land use district is maintained.

Policy 1.7: Victorville will ensure that new developments are compatible with existing developments and public infrastructure.

GOAL 3 Policy 3.1: Development will be permitted in areas where such uses are appropriate and provide for adequate roadways, infrastructure, and public services.

Noise Element

This element of the General Plan helps control unwanted sounds at the local level through land use regulations. Compliance with the noise element goals is discussed in the **Noise** section of this Decision. The element quantifies the community noise environment in terms of noise exposure contours which serve as guidelines for development outlined in the land use element. Specific components of the City of Victorville Noise Element relevant to the proposed project are:

GOAL 1 Policy 1.2: The City will continue implementation of its land use policies and recommendations to ensure that there is no conflict or inconsistency between the operation of the Southern California Logistics Airport and future land uses within the City of Victorville. (For more discussion see the Southern California Logistics (International) Airport Community Plan Element.)

Safety Element

The Safety Element of the General Plan is concerned with identifying and, whenever possible, reducing the impact of natural and man-made hazards which may threaten the health, safety, and property of the residents living and working in the Victorville Planning Area. It emphasizes hazards reduction and accident prevention for man-made hazards (Victorville 1997). Specific elements of the City of Victorville's Safety Element which are relevant to the proposed project are:

GOAL 1 Policy 1.5: The City will continue to apply appropriate safety regulations to land use and development decisions in those portions of the City that are affected by the aviation operations of Southern California Logistics Airport (SCLA).

GOAL 2 Policy 2.2: The City will apply appropriate regulations to land use and development decisions in those portions of the City that are affected by the aviation operations of SCLA.

GOAL 3 Policy 3.1: The City will continue to co-operate with and support, where appropriate, state, county, and local agencies responsible for the enforcement of health, safety, and environmental laws.

Southern California Logistics (International) Airport Community Plan Element

This element of the General Plan addresses the issues related to the operation of the airport. It is intended to promote the development of compatible land uses in the area influenced by airport operations and safeguard the general welfare of the inhabitants within the vicinity of the airport. Specific aspects of the City of Victorville's element are:

GOAL 1 Policy 1.1: The City will promote the development of compatible land uses in the area affected by airport operations to ensure that there is no conflict or inconsistency between the operation of SCLA as a civilian airport and future land uses within the City and surrounding area.

GOAL 3 Policy 3.1: The City will make efforts to safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing exposure to crash hazards associated with aircraft operations.

Policy 3.2: The City will make efforts to safeguard the general welfare of the inhabitants within the vicinity of the airport by minimizing the average noise levels deemed to be excessive.

Southern California Logistics (International) Airport Land Use Plan

The Comprehensive Airport Land Use Plan (CALUP) was prepared pursuant to Public Utilities Code, section 21670, et seq. This type of plan is necessary because airports present unique public health and safety issues that require special land use planning efforts to ensure protection of the public welfare. The intent of this plan is to utilize land use control mechanisms such as zoning and subdivision ordinances to reduce the potential for or effects of an accident, and if an accident does occur, these mechanisms would minimize the number of fatalities on the ground.

Southern California Logistics (International) Airport Specific Plan

The SCLA Specific Plan applies to all lands located within the former George Air Force Base and to an area located northeast of the former base. As described in the plan itself, the specific plan bears the following relationship to other planning documents:

- It is the regulatory land use document that implements the VVEDA Activation Plan, to ensure that the goals, policies and objectives of that plan are adhered to.

- The specific plan is a land use regulatory document that must conform with an overall advisory plan, the CALUP, for developments surrounding civilian aviation facilities.

- The specific plan augments the development regulations and standards of the City of Victorville Zoning Ordinance. In the event that provisions of the specific plan are in conflict with the zoning ordinance, the specific plan is to prevail.

- The Director of Planning for the City of Victorville, or his designee, has the responsibility to interpret the provisions of the specific plan and has the duty to enforce the plan (SCLA 1998).

The proposed HDPP project site is zoned “I” (heavy industrial), per the Southern California Logistics Airport Specific Plan (SCLA 1998). Please refer to Land Use Map, Figure 5.5-4 in Exhibit 1 (the AFC) for the location and boundaries of the various use designations within the Specific Plan area.

As set forth in the SCLA Specific Plan, the entire SCLA site may be sub-divided into parcels suitable for industrial or commercial uses. This can provide for separate ownership of different land uses within the Specific Plan, provided the ownership and/or subdivision does not conflict with the intent of the plan (SCLA 1998). The

macro-parcels immediately adjacent to the HDPP site are identified as “ASF - Airport & Support Facility”, “SCLI - Service Commercial and Limited Industrial”, and “BP - Business Park”. Within the macro-parcel designated “I - Industrial”, the HDPP project will occupy a vacant sub-parcel of approximately 25 acres. Other sub-parcels located within the macro-parcel designated “I” and immediately adjacent to the north of the HDPP site are vacant. The SCLA Development Plan indicates that the immediately adjacent sub-parcels to the south are to be used for unspecified facilities support (SCLA 1997).

CITY OF VICTORVILLE MUNICIPAL CODE

Chapter 18.44: M-2 - Heavy Industrial District: this includes subsections pertaining to conditional uses, building site area, building height, fences, walls and hedges, electric transmission lines, off-street parking, and landscaping requirements.

CITY OF ADELANTO

The proposed well field appears to be located within the boundaries of Victorville. However, portions of the new well field and most of the associated north/south pipeline route are located on or along the roads that form the corporate boundary between the cities of Victorville and Adelanto and could therefore be affected by both cities’ plans, policies, and ordinances.

NEED CONFORMANCE

STATE

CALIFORNIA CODE OF REGULATIONS

California Code of Regulations states "The presiding member's proposed decision shall contain the presiding member's recommendation on whether the application shall be approved, and proposed findings and conclusions on each of the following: (a) Whether and the circumstances under which the proposed facilities are in conformance with the 12-year forecast for statewide and service area electric power demands adopted pursuant to Section 25309(b) of the Public Resources Code." (Cal. Code of Regs., tit. 20, § 1752(a).)

PUBLIC RESOURCES CODE

The Energy Commission's Final Decision must include, among other things, "Findings regarding the conformity of the proposed facility with the integrated assessment of need for new resource additions determined pursuant to subdivision (a) to (f), inclusive, of Section 25305 and adopted pursuant to Section 25308 or, where applicable, findings pursuant to Section 25523.5 regarding the conformity of a competitive solicitation for new resource additions determined pursuant to subdivisions (a) to (f), inclusive, of Section 25305 and adopted pursuant to Section 25308 that was in effect at the time that the solicitation was developed." (Pub. Resources Code, § 25523(f).)

NEED CONFORMANCE CRITERIA

In order to obtain a license from the Energy Commission, a proposed power plant must be found to be in conformance with the Integrated Assessment of Need. The criteria governing this determination, for projects deemed data adequate prior to July 1, 1999, are contained in the *1996 Electricity Report (ER 96)*, and are most succinctly described on page 72 of that document:

> "In sum, the *ER 96* need criterion is this: during the period when *ER 96* is applicable, proposed power plants shall be found in conformance with the Integrated Assessment of Need (IAN) as long as the total number of megawatts permitted does not exceed 6,737."

NOISE

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C.A. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration has adopted regulations (29 C.F.R. § 1910 et seq.) that establish maximum noise levels to which workers at a facility may be exposed. These OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed. OSHA regulations also dictate hearing conservation program requirements and workplace noise monitoring requirements.

There are no federal laws governing offsite noise.

STATE

Similarly, there are no state regulations governing off-site (community) noise. Rather, state planning law (Gov. Code, § 65302) requires that local authorities such as counties or cities prepare and adopt a general plan. Government Code section 65302(g) requires that a noise element be included to establish acceptable noise limits.

The California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. The CEQA Guidelines (Cal. Code Regs., tit. 14, Appendix G) explain that a significant effect from noise may exist if a project would result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The California Occupational Safety and Health Administration (Cal-OSHA) has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, § 5095 et seq.) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

LOCAL

The High Desert Power Project will be located within the city limits of Victorville.[2] Three local ordinances apply to the project (Priester 1997, pers. comm.):

- City of Victorville General Plan Noise Element, July 1997;
- City of Victorville Municipal Code, Chapter 13.02, Nuisances, October 1996; and
- Southern California Logistics (International) Airport Comprehensive Airport Land Use Plan (CALUP), April 1996.

Although the City of Adelanto General Plan contains a noise element that imposes requirements and restrictions, the project is so distant from Adelanto city limits that noise impacts there should be nonexistent.

CITY OF VICTORVILLE GENERAL PLAN NOISE ELEMENT

A general plan noise element typically addresses noise impacts created by new development and commonly limits the amount of noise that a new project may create. The City of Victorville General Plan, however, places no limits on noise emanating from new development. Rather, it places limitations on the siting of new projects within already noisy areas, with the purpose of protecting the occupants of the new project from high existing noise levels. The noise element requires, for example, that new residential developments be located in areas with an ambient noise level no greater that 65 dBA CNEL. Such a development may be sited in a noisy area only if mitigation is enacted to reduce exterior noise levels to 65 dBA, and interior noise levels to 45 dBA CNEL.[3]

As such, the General Plan places no quantitative limit on noise that can be produced by new development. Note that one policy of the noise element (Policy 2.6) is to "...continue to consider development and adoption of a comprehensive noise ordinance based upon quantitative rather than qualitative noise standards." Until such quantitative standards are adopted, however, the City of Victorville General Plan imposes no restrictions on noise produced by the project.

CITY OF VICTORVILLE MUNICIPAL CODE

Chapter 13.02 of the Municipal Code, entitled "Nuisances," includes several sections regarding noise; this portion of the Code serves as what is typically referred to as a Noise Ordinance. Chapter 13.02 establishes no quantitative standards for judging excessive noise. Its purpose is to allow law enforcement officials to stop the creation of noise that constitutes a nuisance. Examples are loud parties or the keeping of animals where their noise disturbs people.

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2 Portions of the water line will lie in San Bernardino County outside the Victorville city limits. Those portions of these lines within the airport boundary will be within the Noise Hazard Overlay District identified in Article 5 of the San Bernardino County Development Code.

3 The reduction of 20 dB from exterior to interior noise levels is typically accomplished by the weatherization and insulation required for new construction under the General Plan.

SCLA Comprehensive Airport Land Use Plan (CALUP)

This document serves as a general plan for the redevelopment of the former George Air Force Base (AFB) into the SCLA. Its chief thrust is controlling development in the vicinity of the airport so as to minimize impacts caused by the airport upon the new development. Regarding noise, the CALUP identifies a 65 dBA noise contour around the airport, and restricts what may be built within that contour. For example, residential construction within the 65 dBA contour is discouraged, but commercial and industrial uses are permissible. Like the City of Victorville General Plan, the CALUP sets no limits on noise emanating from new development such as the High Desert Power Project.

PALEONTOLOGIC RESOURCES

FEDERAL

- National Environmental Policy Act (NEPA): Title 42 United States Code, § 4321-4327; requires that "... important historic, cultural, and natural aspects of our national heritage ..." be protected; requires that "... a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences ... in planning and decision making ..." be followed. NEPA also requires federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures.

- Federal Land Policy and Management Act (FLPMA): Title 43 United States Code, Chapter 35, Sub-Chapter VI, Section 1781-1782; requires the Secretary of Interior to retain and maintain public lands in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric water resource, and archeological values [1781(a)(8)]; requires public lands to be inventoried and provides that permits may be required for the use, occupancy, and development of the public lands; requires the Secretary, with respect to the public lands, to promulgate rules and regulations to carry out the purposes of this Act and of other laws applicable to public lands [Section 1740].

FEDERAL GUIDELINES FOR PALEONTOLOGIC RESOURCES

The US Bureau of Land Management (BLM) recently adopted a new section for its policy and procedures manual. This section focuses on treatment of paleontologic resources on public lands managed by the BLM and it is consistent with the recommendations of a professional society, as described below.

- United States Dept of Interior, Bureau of Land Management: BLM Manual, New Section 8270, Paleontological Resource Management; effective July 13, 1998. As stated in the new section of the manual, BLM policy is that:

  > The paleontological resources found on public lands are recognized by the BLM as constituting a fragile and non-renewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage. BLM will exercise stewardship of these resources as part of its public land management responsibility.

- United States Dept of Interior, Bureau of Land Management: Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management; published as a supplement to BLM Manual Section 8270; Effective July 13, 1998.

STATE

- California Environmental Quality Act (CEQA): Public Resources Code sections 5020.1, 5024.1, 21083.2, 21084.1, *et seq*; requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

- California Environmental Quality Act (CEQA) Guidelines: California Code of Regulations, § 15000, *et seq*, Appendix G (j)], specifically defines a potentially significant environmental effect as occurring when the proposed project will "...disrupt or adversely affect...a paleontological site, except as part of a scientific study."

- Public Resources Code, § 5097.5. Any unauthorized removal of paleontologic resources or sites located on public lands is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority or public corporation, or any agency thereof.

LOCAL

SAN BERNARDINO COUNTY, DEPARTMENT OF COMMUNITY AND CULTURAL RESOURCES

Although the Energy Commission has pre-emptive authority for the HDPP, it typically ensures compliance with local laws, ordinances, regulations, standards, plans, and policies. San Bernardino County has developed specific requirements for the protection of paleontologic resources and mitigation of potential impacts to such resources. County planning department policy requires a literature search, pre-project surveys, mitigation and data recovery, analysis, and curation for paleontologic resources affected by a proposed project.

PROFESSIONAL GUIDELINES AND CRITERIA

In 1994, the Society for Vertebrate Paleontology (SVP), a national professional organization, distributed final revisions to a set of draft guidelines that outline acceptable professional practices in the conduct of paleontologic resource surveys, monitoring and mitigation, data and fossil recovery, sampling, preparation, analysis, and curation (SVP 1994). Prior to the adoption of the final guidelines, many practicing professional paleontologists in California had chosen to adhere to the proposed mitigation and monitoring requirements in the guidelines. At the annual meeting in late 1994, the revised guidelines for mitigation were adopted by the membership of the society and published in the society journal (SVP 1995).

In its guidelines for monitoring and mitigation, the SVP established three categories of sensitivity for paleontologic resources: high, low, and undetermined (SVP 1995). Areas where fossils have been previously found are deemed to have a high sensitivity and a high potential to produce fossils. In areas of high sensitivity, full-time monitoring is typically recommended during any project disturbance. Areas that are not sedimentary in origin and that have not been known to produce fossils previously, typically are deemed low sensitivity and monitoring is usually not needed during project construction. Areas that have not had any previous paleontologic resource surveys or fossil finds are deemed undetermined until surveys and mapping is done. After reconnaissance surveys, observation of exposed cuts, and possibly sub-surface testing, a qualified paleontologist can determine whether the area should be categorized as having high, low, or undetermined sensitivity; that is, whether there is a high or low potential to encounter fossil resources (SVP 1995).

PUBLIC HEALTH

California Health and Safety Code section 39650 et seq. mandates Cal/EPA to establish safe exposure limits for toxic, noncriteria air pollutants and identify the best available methods for their control. This law also requires that the new source review rules for each air district include regulations establishing procedures to control the emission of these pollutants.

LOCAL

The Mojave Desert Air Quality Management District (District) requires the results of a health risk assessment as part of the application for the authority to construct (ATC).

District Rule 1503 prohibits the use of carcinogenic hexavalent chromium in cooling towers constructed after September 23, 1991. The Applicant has stated its intention to comply with the requirements of this rule by using a phosphate-based alternative.

RELIABILITY

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Energy Commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation (Cal. Code Regs., tit. 20, § 1752(c)).

SOCIOECONOMICS

CALIFORNIA GOVERNMENT CODE, SECTION 65995-65997

As amended by SB 50 (Stats. 1998, ch. 407, sec. 23), states that public agencies may not impose fees, charges or other financial requirements to offset the cost for school facilities. The code includes provisions for levies against development projects near school districts. The administering agencies for the above authority for this project are Adelanto Elementary School District, Hesperia Unified School District, Victor Elementary School District, Snowline Joint Unified School District, Victor Valley Union High School District.

CITY OF VICTORVILLE ORDINANCE 1301

City of Victorville Ordinance 1301 was enacted in accordance with the City of Victorville's General Plan to mitigate the overburdening of existing facilities. City of Victorville Ordinance 1301 establishes a development impact fee to be charged upon the issuance of all building permits.

CITY OF VICTORVILLE ORDINANCE 1451

City of Victorville Ordinance 1451 was enacted in accordance with the City of Victorville's General Plan to provide for street lighting, curb, gutters, and fire hydrants where they are not otherwise provided. Infrastructure fees will be charged on all HDPP building permits.

ENVIRONMENTAL JUSTICE

President Clinton's Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" was signed on February 11, 1994. The order required the U.S. Environmental Protection Agency (EPA) and all other federal agencies to develop environmental justice strategies. The USEPA subsequently issued Guidelines that require all federal agencies and state agencies receiving federal funds, to develop strategies to address this problem. The agencies are required to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations.

ENVIRONMENTAL JUSTICE SCREENING ANALYSIS

For all siting cases, Energy Commission staff follows the federal guidelines' two-step screening process. The process assesses:

- whether the potentially affected community includes minority and/or low-income populations; and
- whether the environmental impacts are likely to fall disproportionately on minority and/or low-income members of the community.

Should the screening process indicate the presence of minority or low-income populations, local community groups are contacted to provide the Commission with a fuller understanding of the community and the potential environmental justice issues. In addition, local community groups are asked to help identify potential mitigation measures.

Exhibit 82 (Socioeconomics Table 1) contains demographic information for the Cities of Adelanto and Victorville. Data for this table were taken from the 1990 US Census Data, as specified in the USEPA Guidelines (guidelines) for use in an environmental justice analysis (USEPA 1996). Data from the 1990 Census may not accurately represent the 1998 population of Victorville and Adelanto. Census estimates and projections are done only on a countywide basis and the most recent data is for the year 1994 (Heim, Doche, Choi, and Scheuermann 1998). There are inherent problems with using countywide population projections for 1994. The HDPP area comprises the cities of Adelanto and Victorville. Using countywide data could artificially inflate or dilute the presence of an affected minority and/or low-income population.

According to the guidelines, a minority population exists if the minority population percentage of the affected area is fifty percent of the affected area's general population. Based on the screening process for environmental justice, information in Exhibit 82, Socioeconomics Table 1 indicates that the minority population of the affected area is not greater than fifty percent of the general population. Therefore, because the minority population is not fifty percent, there appears to be no potential minority population based environmental justice issues in the HDPP area.

CITY OF VICTORVILLE ORDINANCE 1301

City of Victorville Ordinance 1301 was enacted in accordance with the City of Victorville's General Plan to mitigate the overburdening of existing facilities. City of Victorville Ordinance 1301 establishes a development impact fee to be charged upon the issuance of all building permits. The ordinance imposes a building development fee of $0.35 per square foot for industrial projects. The project consists of about 45,000 square feet of building area, therefore, the impact fees resulting from the enforcement of this ordinance would be $15,750. However, because HDPP is located within the Southern California Logistics Airport (SCLA), the project is eligible for various sales and tax use credits, including a waiver of all development impact fees (Cox 1998).

CITY OF VICTORVILLE ORDINANCE 1451

City of Victorville Ordinance 1451 was enacted in accordance with the City of Victorville's General Plan to provide for street lighting, curb, gutters, and fire hydrants where they are not otherwise provided. Infrastructure fees will be charged on all HDPP building permits. Any requirements for the above-cited improvements will be determined through the city's plan review process, to the satisfaction of George Worley, Director of Building and Safety (Cox 1998). However, because HDDP is located within the SCLA, the project is eligible for various sales and tax use credits, including infrastructure improvements that may be provided by SCLA.

Local Area Military Base Recovery Act (LAMBRA)

The SCLA has recently been designated Local Area Military Base Recovery Act (LAMBRA) status. Similar to Enterprise Zones, LAMBRA designations allow communities to extend California tax credits to companies locating in closed military bases. Because HDDP is located within the SCLA, the project is eligible for various sales and use tax credits because of SCLA's LAMBRA status:

- fifteen-year net operating loss carryover
- tax credits for sales and use taxes paid
- hiring credits for wages paid
- business expense deductions

Local SCLA incentives include:

- waiver of development impact fees
- discounted business license and building permits
- local planning assistance
- infrastructure improvements
- tenant improvements - code compliance

SOILS AND WATER RESOURCES

FEDERAL

The Clean Water Act, 33 U.S.C., section 1251 et seq., requires any construction activity (earth moving) disturbing five acres or more to operate under the provisions of the National Pollutant Discharge Elimination System (NPDES) General permit. In California, responsibility for administering the NPDES program has been delegated to the Regional Water Quality Control Boards.

STATE

To implement the NPDES program, the State Water Resources Control Board adopted Order No. 92-08-DWQ which established General Permit No. CAS000002, the California General Construction Activity Stormwater Permit. Under this order, a project, if it disturbs five acres or more, must comply with the requirements of the construction general permit. These requirements include the filing of a Notice of Intent with the Regional Water Quality Control Board (RWQCB), development of a stormwater pollution prevention plan, incorporating best management practices for the control of erosion, sedimentation and runoff, and implementation of the plan.

The State Water Resources Control Board also adopted Order No. 97-03-DWQ that established General Permit No. CAS000001, California General Industrial Activities Stormwater Permit. Under this Order, operating industrial facilities that discharge stormwater, must comply with the requirements of the general industrial permit. These requirements include filing a Notice of Intent with the RWQCB, development of a stormwater pollution prevention plan, incorporating best management practices for the control of erosion, sedimentation and runoff, and implementation of the plan, including monitoring.

State Water Resources Control Board Resolution 75-58, discourages the use of fresh inland water for power plant cooling and encourages the use of wastewater or other alternative non-potable water sources. California Water Code section 461 and Water Commission Resolution 77-1 encourage conservation of water resources and maximum reuse of wastewater, particularly in water-short areas.

The Porter-Cologne Water Quality Control Act requires a waste discharge for injection of surface water into a groundwater aquifer to ensure the protection of groundwater quality. SWRCB Policy 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California, requires any discharge to existing high quality waters to meet waste discharge requirements. These requirements will ensure that pollution will not occur and the highest water quality will be maintained.

State Water Resources Control Board Policy 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Anti-degradation policy) is a part of the Water Quality Control Plan for the Lahontan Region (Basin Plan), administered by the Lahontan RWQCB. The Anti-degradation Policy requires the Regional Board to ensure that all projects are constructed in a manner that will maintain the highest quality water that is feasible in consideration of technical,

economic and social factors. Any degradation of water quality must be quantified and must be in the best interest of the people of California. To effectively implement the Anti-degradation Policy, the Regional Board may issue Waste Discharge Requirements, may issue a Waiver of Discharge Requirements, or may waive the need for a responsible party to file a report of waste discharge for a specific project (Maxwell 1999c).

Fish and Game Code, section 1603 requires that the department be notified prior to any substantial diversion of flow or alteration of a channel or bank of any stream, river, or lake, to allow the department to propose measures necessary to protect fish and wildlife.

LOCAL

MOJAVE WATER AGENCY

Mojave Water Agency (MWA) Ordinance No. 9 establishes the rules and regulations for the sale and delivery of State Water Project (SWP) water. An application for SWP water must be submitted to the Mojave Water Agency. The City of Victorville has filed an application for SWP water with the MWA. Section 3.02 of the ordinance limits all agreements for SWP water to a term of one year, thus requiring existing customers to submit a new application each year. Section 3.05 of the ordinance states the SWP cannot be the sole source of water for a project and that a reliable source of water must be obtained prior to approval of any application to the MWA. Section 5.13 of the ordinance requires that if there is a shortage in SWP water, deliveries to all parties shall be reduced proportionally. This section of the ordinance does allow MWA to apportion the water, if there is a shortage in SWP supply, to ensure domestic sanitary sewage and fire fighting needs are met.

The MWA, in its role as Watermaster of the Mojave River Basin, has adopted rules and regulations regarding the agency's responsibilities under the adjudication. Section 23 sets forth Uniform Rules for Storage Agreements which requires a storage agreement with the Watermaster for any party desiring to store water for subsequent recovery.

CITY OF VICTORVILLE

City of Victorville Ordinance No. 1500 requires a grading permit for earth moving activities exceeding 50 cubic yards.

TRAFFIC AND TRANSPORTATION

FEDERAL

The federal government addresses transportation of goods and materials in Title 49, Code of Federal Regulations:

- Title 49, Code of Federal Regulations, Sections 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

- Title 49, Code of Federal Regulations, Sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, addresses safety considerations for the transport of goods, materials, and substances over public highways.

- Title 14, Code of Federal Regulations, Chapter 1, Subchapter E, includes regulations for the analysis of objects that affect navigable airspace.

- Title 14, Code of Federal Regulations, Sections 77.13(2)(i) - An applicant shall notify the Administrator of any construction of structures with a height greater than an imaginary surface extending outward and upward at a slope of 100 to 1 from the nearest point of the nearest runway of an airport with at least one runway more than 3200 feet in length.

- Title 14, Code of Federal Regulations, Sections 77.17 - This section requires that an applicant submit a notification (a Form 7460-1) to the Federal Aviation Administration (FAA). The Form 7460-1 includes the information requirements about the project for the FAA to reach a conclusion about air navigation impacts.

- Title 14, Code of Federal Regulations, Sections 77.21, 77.23 & 77.25 - These sections cover the obstruction standards which the FAA uses to determine whether an air navigation conflict exists.

- Title 14, Code of Federal Regulations, Sections 77.31, 77.33 and 77.:5 require the FAA to perform an analysis, solicit comments, and convene to resolve issues. Under Section 77.35 the FAA issues a determination as to whether the proposed construction would be a hazard to air navigation.

STATE

The California Vehicle Code and the Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, the transportation of hazardous materials and rights-of-way. In addition the California Health and Safety Code addresses the transportation of hazardous materials. Specifically, these codes include:

- California Vehicle Code, section 353 defines hazardous materials. California Vehicle Code, sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.

- California Vehicle Code, sections 31600-31620, regulates the transportation of explosive materials.

- California Vehicle Code, sections 32000-32053, regulates the licensing of carriers of hazardous materials and includes noticing requirements.

- California Vehicle Code, sections 32100-32109, establishes special requirements for the transportation of inhalation hazards and poisonous gases.

- California Vehicle Code, sections 34000-34121, establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.

- California Vehicle Code, sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-.7, 34506, 34507.5 and 34510-11, regulates the safe operation of vehicles, including those which are used for the transportation of hazardous materials.

- California Health and Safety Code, sections 25160 et seq., addresses the safe transport of hazardous materials.

- California Vehicle Code, sections 2500-2505 authorizes the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.

- California Vehicle Code, sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, it requires the possession of certificates permitting the operation of vehicles transporting hazardous materials.

- California Streets and Highways Code, sections 117 and 660-72, and California Vehicle Code sections 35780 et seq., require permits for the transportation of oversized loads on county roads.

- California Street and Highways Code, sections 660, 670, 1450, 1460 et seq., 1470, and 1480 regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.

- California Public Utilities Code, Section 21655 et. seq. addresses the state's role in the permitting of projects in close proximity to airports within California.

- Section 21659(a) requires that the Department of Transportation (Caltrans) Aeronautics Program perform an analysis and issue a permit, if possible, to the Applicant if the FAA finds a hazard to air navigation from the project in their analysis.

The project cannot be constructed unless Caltrans Aeronautics issues their permit and finds that the construction of the project does not constitute a hazard to air navigation.

- Section 21659(b) exempts the permit requirements above [Section 21659(a)] if the FAA has determined that the construction will not constitute a hazard to air navigation or create an unsafe condition for air navigation (per the requirements of Title 14, Code of Federal Regulations, Section 77.35).

- Section 21660 allows for Caltrans to refuse a permit to construct if it finds that construction of the project would constitute a hazard to air navigation or create an unsafe condition for air navigation.

LOCAL

CITY OF VICTORVILLE

VICTORVILLE GENERAL PLAN

Circulation Element: adopted in October 1988, establishes objectives, policies, and implementation programs through which a local community manages its transportation system. It includes the following policies:

- Victorville-1:Policy 1.6: “Preserve roadway capacity to minimize the number of travel lanes needed to provide acceptable levels of service.”;

- Victorville-2: Policy 3.3: “Link funding and construction of circulation improvements to development, and regulate development by intensity, type and location to ensure the provision of Level of Service (LOS) ‘C’ operation.”;

- Victorville-5: Policy 3.9: “Provide for and encourage the use of alternatives to single occupancy through the following techniques...”.

CITY OF ADELANTO

The Circulation Element of the General Plan, policy - Rights-of-Way H-1 establishes all major rights-of-way according to the requirements of the buildout projections of the General Plan.

COUNTY OF SAN BERNARDINO

The Circulation Element of the General Plan provides for the approval of development proposals only when they are consistent with the County’s objective of maintaining a Level of Service (LOS) C on highways and intersections affected by the development.

SAN BERNARDINO ASSOCIATED GOVERNMENTS

Congestion Management Program: Proposition 111, enacted in 1990, mandated that each county with an urbanized area of greater than 50,000 people, prepare,

adopt, and implement a Congestion Management Program (CMP) to facilitate the movement of people and goods on roadways designated as being of regional significance. The Program, adopted in 1992, and revised in 1993 and 1995, has designated State Highway 18, Interstate 15, and U.S. Highway 395 as roadways of regional significance. Where a segment or intersection level of service (LOS) on any of the designated roadways falls below the established standard, a plan to address and correct identified deficiencies, is to be adopted and implemented by the Congestion Management Agency (CMA). The San Bernardino Associated Governments (SANBAG) has been designated as the CMA.

- SANBAG-1: Policy 2.3.1: "Establish level of service E or the current level, whichever is farthest from LOS A, as the LOS standard for intersections or segments on the CMP system of roadways.

  If the current LOS is F, then a 10 percent or more degradation in the quantitative measure used to determine the LOS (such as delay, V/C ratio, or travel speed) will comprise a deficiency, which must be addressed by a deficiency plan."

- SANBAG-2: Policy 4.1.1: "Identify and quantify the direct and cumulative impacts of proposed land use decisions on the regional transportation system."

- SANBAG-3: Policy 4.1.3: "Develop and implement a program which apportions fairly the responsibility for mitigation of deficiencies on the CMP system among local jurisdictions and State agencies."

- SANBAG-4: Policy 4.4.1: "Identify the transportation impacts of significant land use changes, regardless of jurisdictional location or political boundaries."

- SANBAG-5: Policy 5.1.2: "Facilitate and provide incentives for non-auto travel."

- SANBAG-6: Policy 5.2.1: "Provide incentives for reducing vehicle trips."

TRANSMISSION LINE SAFETY AND NUISANCE

FEDERAL

Listed and discussed below are the design-related LORS applicable to the physical dimensions of transmission lines of the type proposed for the High Desert Power Project.

AVIATION SAFETY

- Title 14, Part 77, Code of Federal Regulations (CFR), "Objects Affecting Navigation Airspace". These regulations specify the criteria used by the Federal Aviation Administration (FAA) to determine when a "Notice of Proposed Construction or Alteration" is required to be filed for an object that could pose an obstruction hazards to aviation. The need for such a notice depends on factors related to the height of the structure in question, the slope of an imaginary surface extending from the end of nearby runways to the top of the structure, and the length of the runways involved. The applicant has filed for, and will obtain the necessary FAA permit for the proposed line.

- FAA Advisory Circular (AC) No. 70/7460-2H, "Proposed Construction or Alteration of Objects that May Affect the Navigation Space". This circular informs proponents of projects that may pose a navigation hazard of the need to file the "Notice of Construction or Alteration" with the FAA before construction.

- FAA, AC No. 70/7460-1G, "Obstruction Marking and Lighting". This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria specified in Title 14, Part 77 of the CFR.

INTERFERENCE WITH RADIO-FREQUENCY COMMUNICATION

- Title 47, CFR, Section 15.25. Provisions of these Federal Communications Commission (FCC) regulations prohibit operation of any devices producing energy which interferes with radio communications even when (as with transmission lines), such devices are not intentionally designed to produce radio-frequency energy. Transmission lines create radio noise by the action of the electric field at the conductor surface. The process involved is known as corona discharge but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When this noise is generated around the conductor, it usually manifests as interference with radio or television signal reception. Since the level of interference will depend on factors such as distance from the line to the receiving device, line voltage, orientation of the antenna, signal level, line configuration and weather conditions, no maximum interference level is specified as a design criterion for modern transmission lines.

  Since the spark gap discharges are mostly responsible for the line-related radio interference, and are avoided through line maintenance, their occurrence around

modern lines is minimized through appropriate maintenance regimens, as proposed for this line (Exhibit 1, (AFC) pp. 3.5-17 and 3.5-18).

STATE

- General Order 52 (GO-52), California Public Utilities Commission (CPUC). Provisions of this order govern the construction and operation of power and communications lines and specifically the implementation of measures to prevent or mitigate interference with radio and television communications from induced currents in large metal objects caused by transmission lines. The applicant has stated that all requirements of the order will be implemented in the construction and operation of the proposed line (Exhibit 1, (AFC) p. 4.2-4).

AUDIBLE NOISE

As noted for radio noise, any audible noise from a transmission line mostly results from the electric field-related corona discharges at the conductor surface and could be perceived in the vicinity of the line as a characteristic crackling, frying, or hissing sound or hum. Such noise is usually generated during wet weather (when rain drops create discontinuities that facilitate such discharges), and from lines of 345 kV or higher (whose voltage is high enough to facilitate the corona discharges involved). Research by the Electric Power Research Institute (EPRI, 1982) has shown the fair-weather audible noise of all modern transmission lines to be generally indistinguishable from ambient noise at the edge of a 100-ft right-of-way.

As with radio noise, there are no design-specific regulations on the physical dimensions of a transmission line to limit the noise from operations. Such noise is minimized, instead, through a careful balancing of the factors influencing field strength. According to information from applicant, the operation-related noise at the edge of the 100-ft right-of way of the proposed line should fall within 5.0 dBA of the current ambient levels at the project site which range from 50 dBA to 70 dBA (Exhibit 1, (AFC) pp. 4.2-5 through 4.2-7). As with communications interference, the 400-ft distance from the nearest residential development to the transmission line right-of-way (Exhibit 1, (AFC) p. 4.2-7) should serve to further minimize the potential for complaints about audible noise impacts from the line.

FIRE HAZARDS

- General Order 95 (GO-95), CPUC. “Rules for Overhead Electric Line Construction”. Regulations in this order specify the clearance requirements necessary to minimize the potential for power line-related fires.

- Title 14 CCR, Section 1250-1258, “Fire prevention Standards for Electric Utilities”. Requirements in this regulation are intended to minimize accumulation of combustible materials within the power line environment.

  The fires addressed by these regulations are those that could be caused by sparks from conductors of the overhead lines or could result from direct contact between the line and nearby trees.

HAZARDOUS SHOCKS

- GO-95, CPUC, “Rules for Overhead Electric Line Construction”. The regulations in this order specify the minimum requirements for overhead line construction with regard to ground clearance, grounding, maintenance and inspection necessary to prevent hazardous shocks to humans.

- Title 8, CCR, Section 2700 et seq. “High Voltage Electrical Safety Orders”. These regulations establish essential requirements and minimum standards for installing, operating and maintaining electrical installations and equipment without hazardous shocks. The hazardous shocks that are addressed in these regulations are those that could result from direct or indirect contact with an energized line. Compliance with these requirements will ensure that the line is far enough from the ground to avoid hazardous shocks. Such shocks are capable of serious physiological harm or death.

The Applicant will comply with Title 8 requirements, as specified in the guidelines of the Southern California Edison Company which apply to the service area in which the line will be located (Exhibit 1, (AFC) pp. 4.2-12 through 4.5-14).

TRANSMISSION SYSTEM ENGINEERING

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), "Rules for Overhead Electric Line Construction", formulates uniform requirements for construction of overhead line. Compliance with this order will ensure adequate service and safety to persons engaged in the construction, maintenance, operation or use of overhead electric lines and to the public in general[4].

- CPUC Rule 21 provides standards for the parallel interconnection and operation of generating units connected to a participating transmission owner. These standards provide for safe and reliable operation of generating facilities and the participating transmission owner's facilities.

- Western Systems Coordinating Council (WSCC) Reliability Criteria provide the performance standards used in assessing the reliability of the interconnected system with continuity of service to loads as a first priority and preservation of interconnected operation as a secondary priority. The WSCC Reliability Criteria includes the Reliability Criteria For Transmission System Planning, Power Supply Design Criteria, and Minimum Operating Reliability Criteria. Analysis of the WSCC system is based to a large degree on WSCC Section 4 "Criteria for Transmission System Contingency Performance" which requires that the results of power flow and stability simulations verify established performance levels. Performance levels are defined by specifying the allowable variations in voltage, frequency and loading that may occur on systems other than the one in which a disturbance originated. Levels of performance range from no significant adverse effect outside a system area during a minor disturbance (loss of load or facility loadings outside emergency limits) to a performance level which only seeks to prevent system cascading and the subsequent blackout of islanded areas. While controlled loss of generation, load, or system separation is permitted in extreme circumstances, their uncontrolled loss is not permitted (WSCC 1997). Southern California Edison (Edison) developed its own criteria to maintain loads and resources in their service area (See Edison's Local Area Reliability and Planning Criteria).

- North American Electric Reliability Council (NERC) Planning Standards provide policies, standards, principles and guides to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC's Criteria for Transmission System Contingency Performance. The NERC planning standards provide for acceptable system performance under normal and contingency conditions, however the NERC planning standards apply not only to interconnected system operation but also to Edison's service area (NERC 1997).

- Edison Local Area Reliability and Planning Criteria provides a basis for designing a reliable system, taking into account continuity of service as affected by the outages of system facilities and capital investment. Edison's Reliability and Planning Criteria

[4] While GO-95 applies principally to investor owned utilities it is recognized as the industry standard for transmission facilities in California.

establishes performance levels which must be met for “likely” and “unlikely” contingencies. A likely contingency assumes that one generating unit is out of service and that other outages of a generating unit, a transmission system component, or two transmission lines are out of service. An unlikely contingency assumes that one generating unit is out of service and then that multiple outages occur, e.g. loss of two circuits on a common transmission structure, the outage of two generators, etc. The performance levels which must be met for the two types of contingencies place an emphasis on not interrupting load especially a protracted interruption of major load (400 megawatts), not resulting in a cascading outage which affects other systems, meeting system component ratings, and meeting voltage criteria (Exhibit 1, (AFC) p. 3.5-6).

- Cal-ISO Scheduling Protocols and Dispatch Protocols require conformance with NERC, WSCC, and Edison Local Area Reliability and Planning Criteria and conformance with Edison’s parallel generation interconnection standards. These standards will be applied in assessing the system reliability implications of the High Desert Power Project. Also of major importance to the High Desert and other privately funded projects is the Cal-ISO Day/Hour Ahead Inter-zonal Congestion Management Scheduling Protocol (SP 10), the Transmission System Loss Management Scheduling Protocol (SP 4), and the Creation of the Real Time Merit Order Stack (SP 11). The Congestion Management Scheduling Protocol provides that dispatch not violate system criteria as market participants are requesting generation dispatch or the use of major interties. The Real Time Merit Order Stack is developed based on increasing energy bid prices so that the least cost bids are accepted early on and if congestion is anticipated the highest bids are not selected. The Transmission System Loss Management Scheduling Protocol uses the Cal-ISO power flow model to identify the effects on total transmission losses at each generating unit and scheduling point. Additional calculations are performed to determine if the participant will be paid more or less than, for instance, the generating units’ dispatched net power output (Cal-ISO 1997b, Cal-ISO 1997c).

VISUAL RESOURCES

FEDERAL AND STATE

The proposed project, including the transmission rights-of-way, is located on both private and non-federal public lands and is thus not subject to federal land management requirements. Likewise, neither US Highway 395 nor any other roadway in the project vicinity is a designated or eligible State Scenic Highway (California Department of Transportation, 1992; AFC, p.5.9-1). Therefore, no federal or state regulations pertaining to scenic resources are applicable to the project.

LOCAL

The project viewshed (area from which the project may be seen) comprises portions of three jurisdictions: unincorporated portions of San Bernardino County to the east and north of the project site, including the town of Oro Grande and National Trails Highway (historic Route 66) to the east; portions of the City of Adelanto to the north and west; and portions of the City of Victorville, including the site itself and areas to the south and southeast.

COUNTY OF SAN BERNARDINO

GENERAL PLAN, OPEN SPACE/RECREATION/SCENIC RESOURCES ELEMENT

The County of San Bernardino General Plan contains extensive policies regarding scenic resources, some of which could apply to the project. In broad terms, the County Open Space/Recreation/Scenic Element goals call for preservation and protection of outstanding scenic resources of the County (Goal 8.D.) through its policies. Policies applicable to the project area include:

Policy OR-50. This policy identifies the following features found in the general study area as potential scenic resources:

a) i) A roadway, vista point, or area which provides a vista of undisturbed natural areas;

ii) Includes a unique or unusual feature which comprises an important or dominant portion of the viewshed...; and

iii) Offers a distant vista which provides relief from less attractive views of nearby features (such as views of mountain backdrops from urban areas.)

b) Views of major mountain ranges, specifically including views of mountain ranges from urban or desert areas; historic or culturally significant structures; regional parks and their local access routes; any portion of the regional trail system.

Policy OR-58. Designated County Scenic Highways

The National Trails Highway located east of the project site is a designated County Scenic Highway. County Scenic Highway designation primarily entails controlling development within the 200-foot Scenic Corridor on each side of the designated route, such as restriction of signs or other roadside development. In addition, Policy OR-51 calls for a County review of projects to prevent obstruction of scenic views and to encourage compatibility with the surrounding landscape from scenic areas, trails, and highways.

CITY OF VICTORVILLE

GENERAL PLAN

The project site, located in the Southern California Logistics Airport (SCLA) (formerly George Air Force Base), was recently annexed into the City of Victorville and is, therefore, covered under its General Plan. The City of Victorville is currently in the process of updating the City's General Plan. The update is currently in draft form and has not yet been adopted. The visual resources study makes reference to applicable land uses under the 1997 draft plan, which describes land uses at the SCLA in the SCLA Community Plan Element of the General Plan. There are no specific scenic resource policies in the SCLA Community Plan Element. The SCLA Element has, however, been used in the analysis of record as a source of future planned land uses at the SCLA in order to determine the location of potentially sensitive receptors.

SCLA SPECIFIC PLAN

The SCLA Specific Plan was prepared by the City of Victorville and describes allowable land uses within the SCLA. The Specific Plan includes no specific scenic policies.

MUNICIPAL CODE ZONING ORDINANCE

Chapter 18.44: M-2 - Heavy Industrial District of the Victorville Municipal Code Zoning Ordinance (City of Victorville, 1997) applies to electric generating plants such as the project. This chapter requires that a view obscuring wall or fence be erected and maintained at a height six feet above open spaces used for storage of materials abutting property used for public purposes or when it is in the opinion of the director of planning erection of said fence is necessary due to surrounding land uses (Section 18.44.080).

VICTOR VALLEY ECONOMIC DEVELOPMENT AUTHORITY REDEVELOPMENT PLAN (RDP)

Portions of the Victor Valley, including the SCLA site, are included within a regional redevelopment plan operating under a Joint Powers Authority (JPA). The JPA is comprised of the County of San Bernardino, the Cities of Victorville and Hesperia, and The Town of Apple Valley. Land uses permitted under the RDP are those permitted by the applicable General Plans of the respective JPA jurisdictions. In the case of the proposed project, the City of Victorville is the JPA jurisdiction. The Final

Program Environmental Impact Report (FPEIR) for the Victor Valley Redevelopment Project, which evaluated potential environmental effects, found that light and glare from street lights, reflective building materials, and vehicle headlights resulting from implementation of the plan had the potential to cause significant adverse impacts in the study area. As a result of these findings, the FPEIR presented mitigation measures, to direct outdoor lighting from commercial and industrial uses away from existing and planned residential units, and various measures to reduce the amount and impact of outdoor night lighting, for consideration under subsequent project approvals. Though not binding, these mitigation measures indicated the level of local concern with possible glare and night lighting impacts that could come with development of the Victor Valley.

WASTE MANAGEMENT

FEDERAL

- The Resource Conservation and Recovery Act (RCRA) sets forth standards for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal (42 U.S.C. ϶ 6901 et seq.). The provisions of RCRA may be administered in each state by the U. S. Environmental Protection Agency (EPA). However, the law also allows EPA to delegate the administration of the RCRA program to the various states when a state program is shown to meet federal requirements. When a state receives final EPA authorization of its program, its regulations have the force and effect of federal law. California received final authorization of its program on August 1, 1992.

  Under the provisions of RCRA, EPA has promulgated regulations identifying hazardous wastes subject to the management standards either by listing them or describing characteristics that qualify the wastes as hazardous. In addition, generators of hazardous waste must comply with requirements regarding:

  - Record keeping practices that identify quantities of hazardous wastes generated and their disposition;
  - labeling practices and use of appropriate containers;
  - use of a manifest system for transportation; and
  - submission of periodic reports to the EPA or authorized state agency.

  RCRA also establishes requirements applicable to hazardous waste transporters, including record keeping, compliance with the manifest system, obtaining EPA identification numbers, and transporting only to permitted facilities.

  Amendments to RCRA passed in 1984 broadened regulatory control and banned land disposal of untreated hazardous wastes.

- Title 40, Code of Federal Regulations, section 260 et seq. contains regulations promulgated by the U.S. EPA to carry out the requirements of the RCRA as described above. The regulations describe characteristics of hazardous waste in terms of ignitability, corrosivity, reactivity and toxicity, and list specific types of wastes.

STATE

- California Health and Safety Code section 25100 et seq. (Hazardous Waste Control Act of 1972, as amended.) creates the framework under which hazardous wastes are managed in California. It mandates the Department of Toxic Substances Control (DTSC) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

Additionally, transporters of hazardous wastes must hold valid registrations with the Cal EPA DTSC Transportation unit.

- California Code of Regulations, title 22, section 66001 et seq., adopted by DTSC, sets forth the State's minimum standards for the management of hazardous and extremely hazardous wastes. California Code of Regulations, title 22, section 66262.10 et seq., establishes requirements for generators of hazardous wastes. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the Federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous wastewater must be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established.

LOCAL

- Pursuant to Senate Bill 1082 (Stats. 1993, ch. 418), the Secretary for Environmental Protection established requirements under which every county must apply to the Secretary for approval of a unified hazardous waste and hazardous materials management regulatory program. (Health and Safety Code §§ 25404 and 25404.6)

  There are three Certified Unified Program Agencies (CUPA) in San Bernardino County that consolidate, coordinate, and make consistent the administrative requirements, permits, inspection activities, enforcement activities, and hazardous waste and hazardous materials fees (Koon 1998). They include San Bernardino County, San Bernardino County Environmental Health Department, Hesperia City Fire Department, and the Victorville City Fire Department. Victorville and Hesperia are responsible for all activities in their cities and report directly to EPA. The San Bernardino Environmental Health Department is the CUPA for the rest of the county. The Applicant must obtain a hazardous waste generator permit from the Victorville City Fire Department. Refer to Condition of Certification Waste-2.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

- United States Code, title 29, section 651 et seq. (Occupational Safety and Health Act of 1970)
- Code of Federal Regulations, Title 29, sections 1910.1 - 1910.1500 (Occupational Safety and Health Administration Safety and Health regulations)
- Code of Federal Regulations, Title 29, sections 1952.170 - 1952.175 (Approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in §§ 1910.1 - 1910.1500)

STATE

- Labor Code section 142.3 (Authorizes the Occupational Safety and Health Board to establish safety and health standards)
- Labor Code section 6300 et seq. (Establishes the responsibilities of the Division of Occupational Safety and Health)
- California Code of Regulations, Title 8, section 450 et seq. (Applicable requirements of the Division of Industrial Safety, including Unfired Pressure Vessel Safety Orders, Construction Safety Orders, Electrical Safety Orders, and General Industry Safety Orders)

INDUSTRY STANDARDS

- Uniform Fire Code (UFC). The Uniform Fire Code contains provisions necessary for fire prevention and information about fire safety, special occupancy uses special processes, and explosive, flammable, combustible and hazardous materials.
- Uniform Fire Code Standards. This is a companion publication to the UFC and contains standards of the American Society for Testing and Materials and of the National Fire Protection Association.
- California Building Code. (Cal. Code Regs., tit. 24, § 501 et seq.) The California Building Code is designed to provide minimum standards to safeguard human life, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, etc. of buildings and structures.

HIGH DESERT
POWER PROJECT

Appendix B

Proof of Service List

STATE OF CALIFORNIA
Energy Resources Conservation
and Development Commission

In the Matter of:	)	Docket No. 97-AFC-1
	)	
The Application for Certification	)	
For the HIGH DESERT POWER	)	
PROJECT (HDPP)	)	

PROOF OF SERVICE

I, _____ declare that on _____I deposited copies of the attached _____ the United States mail in ***SACRAMENTO, CA*** with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus 11 copies to the following address:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 97-AFC-1
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

In addition to the documents sent to the Commission Docket Unit, also send individual copies of all documents to:

APPLICIANT

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Long Beach, CA 90802

Air Resources Board
Robert Giorgis, Project Assessment Branch
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Charles Fryxell
Air Pollution Control Officer
Mojave Desert AQMD
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Victorville, CA 92392-2383

INTERESTED ORGANIZATIONS

Southern California Edison
Attn: Ted H. Heath, P.E.
2131 Walnut Grove Avenue
Rose Mead, CA 91770

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

_____
(Signature)

HIGH DESERT
POWER PROJECT

Appendix C

Exhibit List

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	)	
	)	
Application for Certification	)	**Docket No. 97-AFC-1**
For the HIGH DESERT POWER PROJECT	)	
	)	

EXHIBIT LIST

EXHIBIT 1: Application for Certification for the High Desert Power Project Volumes I and II, dated July 1997. Sponsored by Applicant; portions admitted into evidence on September 16, September 30, and October 8, 1999.

EXHIBIT 2: Applicant's responses to Staff data requests, various dates. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 3: Applicant's responses to CURE's data requests, various dates. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 4: Supplementary analyses for BACT evaluation, Health Risk Assessment, Air Quality Impact Assessment, and Visibility Analysis, dated January 23, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 5: PSD permit application, dated January 30, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 6: NO_x impact assessment, dated February 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 7: Letter from FAA to Mr. Jon Roberts, dated February 4, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 8: Draft Erosion Control and Revegetation Plan, dated July 20, 1999. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 9: High Desert Interconnection Study Scope, dated March 11, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 10: Request for jurisdictional determination to the US Army Corps of Engineers, dated March 1998 and submitted March 12, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 11: HDPP Offset Plan, dated March 18, 1998 and submitted on March 20, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 12: Applicant's letter to SCAQMD re definition of LAER for gas turbines, dated March 20, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 13: Aqueous Ammonia Release Mitigation Measures, dated April 3, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 14: Evaluation of Alternative Water Supplies, dated April 20, 1998. Sponsored by Applicant; admitted into evidence on October 7,1999.

EXHIBIT 15: Applicant's Status Report Number Three and errata to data request 45, dated April 23, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 16: Second revision to Health Risk Assessment from ENSR, dated April 28, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 17: Revised draft Biological Resources Mitigation Implementation Plan, dated July 20, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 18: Letter to US Army Corps of Engineers regarding revised jurisdictional acreage, dated May 1, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 19: Letter from Applicant to Mojave Desert AQMD regarding revised BACT (LAER) determinations and other emission limits, dated April 28, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 20: Response from Applicant regarding additional information on proposed gas turbines, dated May 12, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 21: Draft High Desert Power Project Interconnection Study, dated May 15, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 22: Comments on May 15, 1998 Draft Interconnection Study, undated. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 23: High Desert Power Project Interconnection Study, dated May 20, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 24: Field Authorization Request by BLM, dated May 21, 1998 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 25: Memorandum from R.G. Beeby to Andy Welch regarding projections of groundwater pumpage, dated May 19, 1998. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 26: Memorandum from Dave Larsen to Phil Save re: additional comments on High Desert Power Project Interconnection Studies, dated May 27, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 27: Draft map showing proposed Southwest Gas Pipeline route. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 28: Summary of landowners along northern gas pipeline route, dated May 29, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 29: Analysis of proposed natural gas pipeline, dated June 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 30: Letters of Intent for purchases of emission reduction credits, dated June 15, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 31: PM10 emission reduction credit calculations (originally submitted as part of Exhibit 30). Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 32: Applicant's comments on the preliminary Determination of Compliance, dated June 24, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 33: Letters from Applicant to Staff re SCR feasibility, dated June 18, 1998 and submitted on June 26, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 34: Paleontologic information for Southwest Gas Pipeline, dated June 30, 1998 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 35: Cooling Tower Plume Analysis, dated July 1998, and submitted July 23, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 36: Applicant's Interconnection Study, Revision 1, dated July 6, 1998 and submitted July 20, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 37: Correspondence to Richard Buell from Andrew Welch re visual analysis, dated July 2, 1998 and submitted July 6, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 38: Letter formally removing simple cycle peaking plant configuration, dated July 8, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 39: Cultural resources assessment of the Southwest Gas Pipeline, dated July 27, 1998 and submitted on September 16, 1998 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 40: Section 1603 Steambed Alteration Notification and Agreement, dated July 27, 1998 and submitted July 28, 1998. Sponsored by Applicant.

EXHIBIT 41: Applicant's revisions to request for jurisdictional determination from US Army Corp of Engineers, dated July 31, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 42: Section 1603 Streambed Alteration Notification and Agreement for Southwest Gas Pipeline, dated August 3, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 43: Applicant's comments to CURE re June 29, 1998 Fox report, dated August 6, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 44: Documents re emission reduction credits, dated August 6, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 45: Letter to Richard Buell from Robert Cook re construction along Colusa Road, dated August 19, 1998 and submitted August 20, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 46: Request for jurisdictional determination re Southwest Gas Pipeline from US Army Corps of Engineers, dated August 25, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 47: High Desert Revised Interconnection Study Response to CAISO comments (approved by CAISO) on High Desert Interconnection Study – Revision No. 1, dated September 10, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 48: Transmittal sheet for Archaeological Assessment Report Addendum for the Southwest Gas Pipeline, dated September 14, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 49: Final Interconnection Study, dated September 10, 1998 and submitted September 16, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 50: Letter to Larry Rower from Jon Roberts re application for water service from City of Victorville, dated October 1, 1998. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 51: Authority to Construct Application submitted to Mojave Desert AQMD, dated October 1997. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 52: Applicant's air quality emissions and BACT addendum, dated October 31, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 53: Draft Habitat Conservation Plan, Federal Endangered Species Act Section 10(a)(1)(B) Permit Application, dated October 26, 1998. Sponsored by Applicant.

EXHIBIT 54: Addendum Number 1 to the "Evaluation of Alternative Water Supplies for the High Desert Power Project," dated November 9, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 55: Applicant's revised offset plan, dated November 7, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 56: Applicant's revised short-term air quality impact assessment, dated November 20, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 57: Letter from Applicant to Mojave Desert AQMD re: $SCONO_x$, dated November 24, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 58: Letter to Mojave Desert AQMD re estimating interpollutant trade ratio, dated December 11, 1998. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 59: Preliminary Application for Incidental Take Permit from CDFG, dated December 30, 1998 and submitted on January 4, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 60: Application/Report of Waste Discharge General Information Form for Waste Discharge Requirements, dated January 5, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 61: Applicant's comments on Staff Assessment, dated February 19, 1999. Sponsored by Applicant; portions admitted into evidence on October 7 and 8, 1999.

EXHIBIT 62: Addendum I to Cultural Resources Assessment of the Southwest Gas Pipeline, dated September 1998[DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 63: Letter from ENSR on behalf of Applicant to US EPA re emissions limits, offset issues, and interpollutant trading ratio, dated February 16, 1999 and submitted on February 24, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 64: Archaeological site testing report to determine National Register eligibility of the Southwest Gas Pipeline, dated March 26, 1999 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 65: Addendum Number 2 to the "Evaluation of Alternative Water supplies for the High Desert Power Project," dated April 12, 1999. Sponsored by Applicant; portions WITHDRAWN and balance admitted into evidence on October 7, 1999

EXHIBIT 66: Correspondence to Mr. Matt Haber, US EPA, re revised PSD permit air quality impact analysis, dated April 9, 1999 and submitted April 12, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 67: Letter from ENSR on behalf of Applicant to US EPA re revised air quality impacts of changes to project, dated April 9, 1999 and submitted April 12, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 68: Biological Assessment for the Southwest Gas Pipeline, dated April 19, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 69: High Desert Power Project revised emissions data, dated April 28, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 70: Correspondence to US EPA re emission calculations, dated May 24, 1999 and submitted May 28, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 71: Letter from Andrew Welch to Richard Buell re water issues (including May 21, 1999 memorandum from Jeff Lefkoff), dated May 26, 1999. Sponsored by Applicant; portions WITHDRAWN and balance admitted into evidence on October 7, 1999.

EXHIBIT 72: Correspondence from Applicant to Mr. Michael Duane Davis re water and related issues, dated June 9, 1999. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 73: Modeling results for post-closure injection, dated June 21, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 74: Letter from ENSR to Mojave Desert AQMD re revised PDOC, dated June 18, 1999 and submitted June 29, 1999. Sponsored by Applicant; admitted into evidence on October 7, 1999.

EXHIBIT 75: Cultural Resources Assessment Report for the High Desert Power Project, dated May 1999 and submitted May 17, 1999 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 76: Applicant's Status Report No. 2 transmitting Mojave Desert AQMD final Determination of Compliance. Final Determination of Compliance is dated June 29, 1999; status report is dated July 2, 1999; documents were resubmitted in a filing dated July 14, 1999. Final Determination of Compliance sponsored by Mojave Desert AQMD as Exhibit 89; admitted into evidence on October 7, 1999.

EXHIBIT 77: Transmittal of letter re transmission line footings and cultural resources site CA-SBR-182, dated July 12, 1999 and submitted July 15, 1999 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 78: Historic Properties Treatment Plan for the Southwest Gas Pipeline, dated July 6, 1999 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 79: Historic Properties Treatment Plan for the Southwest Gas Pipeline, dated July 18, 1999 and submitted July 21, 1999 [DESIGNATED CONFIDENTIAL]. Sponsored by Applicant; admitted into evidence on September 16, 1999.

EXHIBIT 80: Amendments to conditions of stream encroachment permit, and Compliance Operations and Monitoring Plan, dated August 12, 1999. WITHDRAWN by Applicant on October 7, 1999.

EXHIBIT 81: Analysis of impacts to riparian and aquatic species in the Mojave River riparian area, dated August 12, 1999. WITHDRAWN by Applicant on October 7, 1999.

EXHIBIT 82: Staff Assessment for the High Desert Power Project (Docket No. 97-AFC-1), dated January 1999. Sponsored by Staff; portions admitted into evidence on September 16, September 30, and October 7, 1999.

EXHIBIT 83: Errata to the Staff Assessment and additional Staff Witness Qualifications, dated March 19, 1999. Sponsored by Staff; portions admitted into evidence on September 16, September 30, and October 8, 1999.

EXHIBIT 84: Staff's revised/supplemental analysis for Hazardous Materials Management and Traffic and Transportation, dated March 25, 1999. Sponsored by Staff; portions admitted into evidence on September 16 and on September 30, 1999.

EXHIBIT 85: Staff's revisions/supplemental analysis re use of dry cooling, Biological Resources, Cultural Resources, and Water Quality condition, dated April 9, 1999. Sponsored by Staff; portions admitted into evidence on September 16 and on October 8, 1999.

EXHIBIT 86: Staff's final testimony on Hazardous Materials Management and Air Quality, dated July 15, 1999. Sponsored by Staff; admitted into evidence on October 7, 1999.

EXHIBIT 87: Staff's final testimony on Socioeconomics, Biological Resources, Soil and Water Resources, dated August 16, 1999. Sponsored by Staff; portions admitted into evidence on September 16, September 30, and October 7, 1999.

EXHIBIT 88: Transmission System Reliability testimony on behalf of the California Independent System Operator, dated April 16, 1999. Presented by Staff; admitted into evidence on September 16, 1999.

EXHIBIT 89: Final Determination of Compliance of the Mojave Desert Air Quality Management District, dated June 29, 1999. Presented by Staff; admitted into evidence on October 7, 1999.

EXHIBIT 90: Revised testimony of J. Phyllis Fox on Hazardous Materials Management, dated September 10, 1999 (substituted for August 16, 1999 filing). Sponsored by CURE; admitted into evidence on September 16, 1999.

EXHIBIT 91: Testimony of Jon Hughes re socioeconomic effects, dated August 16, 1999. Sponsored by CURE; admitted into evidence on October 7, 1999.

EXHIBIT 92: Joint Environmental Impact Mitigation proposal of the Applicant and CURE, dated May 4, 1999. Sponsored by CURE; admitted into evidence on September 16, 1999.

EXHIBIT 93: Testimony on behalf of the California Department of Fish and Game, dated August 16, 1999. Sponsored by CDFG; admitted into evidence on October 7, 1999.

EXHIBIT 94: Prepared testimony of Joseph P. Provenza, Jr., dated August 1999. Sponsored by Southwest Gas Corporation; admitted into evidence on September 30, 1999.

EXHIBIT 95: Revised witness and exhibit list, and individual prepared testimonies, dated August 16, 1999. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 96: Rebuttal testimony of Thomas W. Bilhorn re HDPP Exhibits 80 and 81, dated August 27, 1999. Sponsored by CDFG; admitted into evidence on October 8, 1999.

EXHIBIT 97: Rebuttal testimony of Gary A. Ledford to the testimony of Jon Hughes re socioeconomic effects, dated August 30, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on September 30, 1999.

EXHIBIT 98: Rebuttal testimony of Gary A. Ledford to the testimony of Matthew Layton re project cooling, dated August 30, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 99: Rebuttal testimony of Gary A. Ledford to the testimony of Linda Bond and Joseph O'Hagan re Soil and Water, dated August 30, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 100: Amendments to testimony of Joseph Provenza, dated September 3, 1999. Sponsored by Southwest Gas Corporation; admitted into evidence on September 30, 1999.

EXHIBIT 101: Applicant's Rebuttal and Clarification re Air Quality, Water Resources, and Biological Resources, dated September 3, 1999. Sponsored by Applicant; portions withdrawn and balance admitted into evidence on October 7, 1999

EXHIBIT 102: Declarations on various topic areas, dated September 7, 1999. Sponsored by Applicant; admitted into evidence on September 16, 1999 and on October 8, 1999.

EXHIBIT 103: Errata to Staff's Soils and Water Resources, Biological Resources, and Air Quality testimony, dated September 2, 1999. Sponsored by Staff; admitted into evidence on October 7, 1999.

EXHIBIT 104: Staff Declarations and Errata to Demand Conformance, Facility Design, Hazardous Materials Management, and Visual Resources, dated September 7, 1999. Sponsored by Staff; admitted into evidence on September 16, 1999.

EXHIBIT 105: Staff Declarations for Demand Conformance and Facility Design, dated September 8, 1999. Sponsored by Staff; admitted into evidence on September 16, 1999.

EXHIBIT 106: Supplemental testimony from CDFG, dated September 9, 1999. WITHDRAWN by CDFG on October 7, 1999.

EXHIBIT 107: Letters from Department of Toxic Substances Control, dated September 2, September 4, and July 8, 1998. Sponsored by Staff; admitted into evidence on September 16, 1999.

EXHIBIT 108: Letter from California ISO to Mr. Tony Velarde re final Interconnection Study, dated October 8, 1998. Sponsored by Staff; admitted into evidence on September 16, 1999.

EXHIBIT 109: Selected pages from the "Fifth Annual Report of the Mojave Basin Area Watermaster, Water Year 1997-98", docketed as "Intervenor Ledford Exhibit 125" on September 13, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 110: Selected pages from the "Regional Water Management Plan," dated June 1994; initially docketed as "Intervenor Ledford Exhibit 126" on September 15, 1999 and subsequently docketed as Ledford Exhibit 111 on September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 111: Selected pages from the "Mojave Water Agency Master Plan for the Delivery of Imported Water," dated 1990; docketed as Ledford Exhibit 112 on September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 112: Selected pages from "Respondents' Opening Brief on the Merits," Supreme Court Docket No. S071728, dated October 23, 1998; submitted as "Intervenor Ledford Exhibit 128" and docketed September 14, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 113: Graphic representation submitted as "Intervenor Ledford Exhibit 130," docketed September 14, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 114: Selected pages from USGS Report 95-4189, dated 1996; docketed as Ledford Exhibit 115 on September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 115: Mojave Water Agency water pricing, dated August 23, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 116: Selected pages from Environmental Impact Statement for Reuse of George Air Force Base, dated September 1991. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 117: Declaration of Norman J. Caouette in Superior Court (San Bernardino County – Central District) Case No. SCV 13868, dated October 14, 1994; docketed as "Intervenor Gary Ledford Exhibit No. 136" on September 15, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 118: Mojave Water Agency memo of September 14, 1999 and Minutes of August 16, 1999; docketed as Ledford Exhibit 120 on September 21, 1999. Sponsored by Intervenor Gary Ledford; page 3 of "Minutes" admitted into evidence on September 16, 1999.

EXHIBIT 119: CURE's Preliminary Analysis of Dry Cooling for the High Desert Power Project, dated March 30, 1999. Sponsored by Intervenor Gary Ledford; authenticated by Dr. J. Phyllis Fox and admitted into evidence on September 16, 1999.

EXHIBIT 120: CURE's "Well Interference Effects of High Desert Power Project's Proposed Wellfield in the Victor Valley Water District," dated October 12, 1998 and submitted October 16, 1998. Sponsored by Intervenor Gary Ledford; authenticated by Dr. J. Phyllis Fox and admitted into evidence on September 16, 1999.

EXHIBIT 121: Direct testimony of Gary Ledford on Water and related matters, dated September 14, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 122: Direct Testimony of Gary Ledford on Wet/Dry Cooling, etc., dated September 20, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 123: E-mail from Norm Caouette to Rick Buell, dated April 13, 1999 and attached unexecuted "Storage Agreement", docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 124: State Water Resources Control Board "Water Quality Control Policy on the Use and Disposal of Inland Waters used for Powerplant Cooling" adopted June 19, 1975 and accompanying declaration dated September 13, 1999, docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 125: Selected pages from "Certificates of Participation" in the amount of $26,290,000, dated May 1, 1997 and docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 126: Selected pages from "Draft Issue Memo Regarding Beneficial Uses for Ground and Surface Waters within the Mojave Watershed", dated October 1994 and docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted in evidence on October 8, 1999.

EXHIBIT 127: "Agreement for Cooperation between Mojave Water Agency and the Victor Valley Economic Development Authority", dated December 22, 1993 and accompanying declaration from Gary Ledford, dated September 18, 1999; docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 128: "Declaration of Larry W. Rowe in Support of Motion for Entry of Interlocutory Decree of Judgment" in Riverside Superior Court Case No. 208568, dated July 7, 1993 and docketed September 21, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 129: Letter from Andrew Welch to Jon Roberts re stack height, dated December 21, 1998. Sponsored by Applicant; admitted into evidence on September 30, 1999.

EXHIBIT 130: Prepared Rebuttal testimony of Bob Beeby, docketed September 30, 1999. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 131: Staff's Water rebuttal testimony, Air Quality Errata, and revised Soils and Water Resources testimony, dated September 30, 1999. Sponsored by Staff; admitted into evidence on October 7, 1999.

EXHIBIT 132: Declaration of Thomas W. Bilhorn, dated October 1, 1999 and submitted on October 4, 1999. Sponsored by CDFG; admitted into evidence on October 8, 1999.

EXHIBIT 133: "Aquifer Storage and Recovery Agreement for the High Desert Power Project", dated September 28, 1999. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT134: Letter from Richard Buell to Larry Rowe, dated November 18, 1998, and attachments. Sponsored by Staff.

EXHIBIT 135: Notice and Minutes for a Regular Meeting of the Board of Directors of the Victor Valley Water District, dated October 5, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 136: Notice and Minutes of a Special Meeting of the Board of Directors of the Victor Valley Water District, dated September 28, 1999. Sponsored by Intervenor Gary Ledford; admitted into evidence on October 8, 1999.

EXHIBIT 137: Mojave Water Agency Memorandum from Norman Caouette to Planning and Resources Committee, including attachments; dated October 26, 1999. Sponsored by Staff.

EXHIBIT 138: Diagram titled "Flow of Water", undated. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 139: Diagram titled "contracts", undated. Sponsored by Applicant; admitted into evidence on October 8, 1999.

EXHIBIT 140: Letter to Mr. Dale Jackson from Barbara Smith, USEPA, dated September 22, 1999. Sponsored by Staff; admitted into evidence on October 8, 1999.

EXHIBIT 141: “Conditions of Certification Water Supply and Rules Diagram”, undated. Sponsored by Staff; admitted into evidence on October 8, 1999.

EXHIBIT 142: “Conditions of Certification – Water Supply and Rules Chart”, undated. Sponsored by Staff; admitted into evidence on October 8, 1999.

EXHIBIT 143: “Applicant Motion to Reopen Proceedings for Limited Purpose” including prepared testimony and materials on site control, emissions offsets, aquifer storage and recovery agreement, and dry cooling, dated January 13, 2000. Sponsored by Applicant; admitted into evidence on February 18, 2000.

EXHIBIT 144: Additional Prepared Testimony of Andy Welch, docketed on February 10, 2000. Sponsored by Applicant; admitted into evidence on February 18, 2000.

EXHIBIT 145: Aquifer Storage and Recovery Agreement, dated January 18, 2000 and docketed on February 10, 2000. Sponsored by Applicant; admitted into evidence on February 18, 2000.

EXHIBIT146A: Staff testimony for February 18, 2000 Hearings on the High Desert Power Project on the topics of Air Quality, Dry Cooling, Site Control, and Water, dated February 10, 2000. Sponsored by Staff; admitted into evidence on February 18, 2000.

EXHIBIT146B: Staff testimony for February 18, 2000 Hearings on the High Desert Power Project on the topic of Biological Resources, dated February 10, 2000. Sponsored by Staff; admitted into evidence on February 18, 2000.

EXHIBIT 147: Letter opposing project from Lilly Ying, dated January 22, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 148: Opposition to Conditions, with Attachments from Gary Ledford, dated January 29, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 149: Data Request to Buck Johns, dated February 8, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 150: Sign-in sheet for February 6, 1999; docketed on February 18, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 151: “Applicant Response to Data Requests filed by Gary Ledford”, dated February 24, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 152: Sign-in sheet for March 2, 1999 Staff Workshop, docketed March 3, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 153: Document entitled “Assessment of Groundwater Impacts”, seven pages in length and undated, docketed on March 15, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 154: Single page document entitled “High Desert Power Project Aquifer Testing Program Summary”, undated, docketed on March 15, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 155: “Motion for Order Directing Response” filed by Gary Ledford, dated March 21, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 156: Letter from Gary Ledford to Richard Buell regarding “Water Requirements for High Desert Power Project CURE’s Preliminary Dry Cooling Analysis”, dated April 3, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 157: “Prehearing Conference Statement of Gary Ledford Objecting to Proposed Conditions Relating to Water Service”, dated April 7, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 158: Five Reports of Conversation by Staff, docketed on April 28, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 159: Letter to Andrew Welch from Richard Buell regarding proposed water modeling analysis, dated May 18, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 160: Submission (dated May 28, 1999) of a letter to Richard Buell from Andrew Welch, dated May 26, 1999, regarding water analysis. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 161: Correspondence to Richard Buell from Michael Duane Davis, Esq., representing Silver Lakes Association, dated June 3, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 162: Correspondence to Richard Buell from Michael Duane Davis, Esq., representing Baldy Mesa Water District, dated June 3, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 163: Correspondence to Michael Duane Davis, Esq., from Allan Thompson, dated June 9, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 164: Order Denying Motion for Preparation of Environmental Impact Report, dated July 20, 1999. Offered by Intervenor Ledord; admission denied on February 18, 2000.

EXHIBIT 165: "Response of HDPP to Various Gary A. Ledford Filings", dated July 20, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 166: Opening Brief of Gary Ledford on Water and Related Matters, dated November 3, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 167: Reply Brief of Gary Ledford on Water and Related Matters, dated November 16, 1999. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 168: Prepared Direct Testimony of Jack Beinschroth on Water and Related Matters, dated February 9, 2000. . Sponsored by Intervenor Ledford; portions admitted into, and portions excluded from, evidence on February 18, 2000

EXHIBIT 169: Exhibit "A" to prepared testimony of Jack Beinschroth entitled "Blown Up Exhibit from VVWD". Offered by Intervenor Ledford; substance contained in previously admitted Exhibit 65 and used for illustrative purposes only at February 18, 2000 hearing.

EXHIBIT 170: Exhibit "B" to prepared testimony of Jack Beinschroth entitled "Sewage Treat Plant Pipeline". Sponsored by Intervenor Ledford; admitted into evidence on February 18, 2000.

EXHIBIT 171: Exhibit "C" to prepared testimony of Jack Beinschroth entitled "Campaign Lies". Sponsored by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 172: Direct testimony of Bob Almond on Water and Related Matters, dated February 9, 2000. Sponsored by Intervenor Ledford; portions admitted into, and portions excluded from, evidence on February 18, 2000.

EXHIBIT 173: Exhibit "A" to direct testimony of Bob Almond relating to campaign contributions. Sponsored by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 174: Exhibit "B" to direct testimony of Bob Almond entitled "Consumptive Use Study". Sponsored by Intervenor Ledford; admitted into evidence on February 18, 2000.

EXHIBIT 175: Prepared Supplemental Testimony of Gary Ledford on Water and Related Matters, dated February 10, 2000 and attached JPL News Release. Offered by Intervenor Ledford; admission denied on February 18, 2000.

EXHIBIT 176: Errata to Staff's February 10, 2000 testimony, dated February 15, 2000. Sponsored by Staff; admitted into evidence on February 18, 2000.

HIGH DESERT
POWER PROJECT

Appendix D

Glossary of Terms and Acronyms

GLOSSARY OF TERMS AND ACRONYMS

	A
A	Ampere
AAL	all aluminum (electricity conductor)
AAQS	Ambient Air Quality Standards
ABAG	Association of Bay Area Governments
AC	alternating current
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
AFC	Application for Certification
AFY	acre-feet per year
AHM	Acutely Hazardous Materials
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARCO	Atlantic Richfield Company
ASAE	American Society of Architectural Engineers
ASHRAE	American Society of Heating Refrigeration & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
	B
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAF	Basic American Foods
BARCT	Best Available Retrofit Control Technology
bbl	barrel
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
Bcfd	billion cubic feet per day
b/d	barrels per day
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
Btu	British thermal unit
	C
CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CCAA	California Clean Air Act
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEM	continuous emissions monitoring
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFB	circulating fluidized bed
CFCs	chloro-fluorocarbons
cfm	cubic feet per minute

CFR	Code of Federal Regulations
cfs	cubic feet per second
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
COI	California Oregon Intertie
CPCN	Certificate of Public Convenience & Necessity
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CT	combustion turbine current transformer
CTG	combustion turbine generator
CURE	California Unions for Reliable Energy
	D
dB	decibel
dB(A)	decibel on the A scale
DC	direct current
DCTL	Double Circuit Transmission Line
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DISCO	Distribution Company
DOC	Determination of Compliance
DOE	U.S. Department of Energy
DSM	demand side management
DTC	Desert Tortoise Council
DWR	California Department of Water Resources
	E
EDF	Environmental Defense Fund
Edison	Southern California Edison Company
EDR	Energy Development Report
EFS&EPD	Energy Facilities Siting and Environmental Protection Division
EIA	U.S. Energy Information Agency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELFIN	Electric Utility Financial and Production Simulation Model
EMF	electric and magnetic fields
EOR	East of River (Colorado River)
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ER	Electricity Report
ERC	emission reduction credit {offset}
ESA	Endangered Species Act (Federal) Environmental Site Assessment
ETSR	Energy Technologies Status Report
	F
FAA	Federal Aviation Administration
FBE	Functional Basis Earthquake
FCAA	Federal Clean Air Act
FCC	Federal Communications Commission
FEIR	Final Environmental Impact Report
FIP	Federal Implementation Plan
FONSI	Finding of No-Significant Impact
FERC	Federal Energy Regulatory Commission
FSA	Final Staff Assessment G

GEP	good engineering practice
GIS	gas insulated switchgear geographic information system
gpd	gallons per day
gpm	gallons per minute
GW	gigawatt
GWh	gigawatt hour
	H
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HHV	higher heating value
HRA	Health Risk Assessment
HRSG	heat recovery steam generator
HV	high voltage
HVAC	heating, ventilating and air conditioning
	I
IAR	Issues and Alternatives Report
IEA	International Energy Agency
IEEE	Institute of Electrical & Electronics Engineers
IID	Imperial Irrigation District
IIR	Issues Identification Report
IOU	Investor-Owned Utility
IS	Initial Study
ISO	Independent System Operator
	J
JES	Joint Environmental Statement
	K
KCAPCD	Kern County Air Pollution Control District
KCM	thousand circular mils (also KCmil) (electricity conductor)
KGRA	known geothermal resource area
km	kilometer
KOP	key observation point
KRCC	Kern River Cogeneration Company
kV	kilovolt
KVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt, electric
kWh	kilowatt hour
kWp	peak kilowatt
	L
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emission Rate
lbs	pounds
lbs/hr	pounds per hour
lbs/MMBtu	pounds per million British thermal units
LCAQMD	Lake County Air Quality Management District
LMUD	Lassen Municipal Utility District
LORS	laws, ordinances, regulations and standards
	M
m (M)	meter, million, mega, milli or thousand
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCE	maximum credible earthquake
MCF	thousand cubic feet
MCL	Maximum Containment Level
MCM	thousand circular mil (electricity conductor)
$\mu g/m^3$	micro grams (10^{-6} grams) per cubic meter

MEID	Merced Irrigation District
MG	milli gauss
mgd	million gallons per day
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MPE	maximum probable earthquake
m/s	meters per second
MS	Mail Station
MVAR	megavolt-ampere reactive
MW	megawatt (million watts)
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	megawatt hour
MWp	peak megawatt
	N
N-1	one transmission circuit out
N-2	two transmission circuits out
NAAQS	National Ambient Air Quality Standards
NCPA	Northern California Power Agency
NEPA	National Energy Policy Act National Environmental Policy Act
NERC	National Electric Reliability Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NMHC	nonmethane hydrocarbons
NO	nitrogen oxide
NOI	Notice of Intention
NOL	North of Lugo
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NOP	Notice of Preparation (of EIR)
NOV	Notice of Violation
NRDC	Natural Resources Defense Council
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSPS	New Source Performance Standards
NSR	New Source Review
	O
O_3	Ozone
OASIS	Open Access Same-Time Information System
OCB	oil circuit breaker
OCSG	Operating Capability Study Group
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration (or Act)
	P
PG&E	Pacific Gas & Electric Company
PDCI	Pacific DC Intertie
PHC(S)	Prehearing Conference (Statement)
PIFUA	Federal Powerplant & Industrial Fuel Use Act of 1978
PM	Project Manager particulate matter
PM_{10}	particulate matter 10 microns and smaller in diameter
$PM_{2.5}$	particulate matter 2.5 microns and smaller in diameter
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million by volume, dry
ppt	parts per thousand
PRC	California Public Resources Code

PSD	Prevention of Significant Deterioration
PSRC	Plumas Sierra Rural Electric Cooperative
PT	potential transformer
PTO	Permit to Operate
PU	per unit
PURPA	Federal Public Utilities Regulatory Policy Act of 1978
PV	Palo Verde photovoltaic
PX	Power Exchange
	Q
QA/QC	Quality Assurance/Quality Control
QF	Qualifying Facility
	R
RACT	Reasonably Available Control Technology
RDF	refuse derived fuel
ROC	Report of Conversation reactive organic compounds
ROG	reactive organic gas
ROW	right of way
RWQCB	Regional Water Quality Control Board
	S
SACOG	Sacramento Area Council of Governments
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SANDER	San Diego Energy Recovery Project
SB	Senate Bill
SCAB	South Coast Air Basin
SEGS	Solar Electric Generating Station
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCFM	standard cubic feet per minute
SCH	State Clearing House
SCIT	Southern California Import Transmission
SCR	Selective Catalytic Reduction
SCTL	single circuit transmission line
SDCAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric Company
SEPCO	Sacramento Ethanol and Power Cogeneration Project
SIC	Standard industrial classification
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SMUDGEO	SMUD Geothermal
SNCR	Selective Noncatalytic Reduction
SNG	Synthetic Natural Gas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_4	sulfates
SoCAL	Southern California Gas Company
SONGS	San Onofre Nuclear Generating Station
SPP	Sierra Pacific Power
STIG	steam injected gas turbine

SWP	State Water Project
SWRCB	State Water Resources Control Board
	T
TAC	Toxic Air Contaminant
TBtu	trillion Btu
TCF	trillion cubic feet
TCM	transportation control measure
TDS	total dissolved solids
TE	transmission engineering
TEOR	Thermally Enhanced Oil Recovery
TID	Turlock Irrigation District
TL	transmission line or lines
T-Line	transmission line
TOG	total organic gases
TPD	tons per day
TPY	tons per year
TS&N	Transmission Safety and Nuisance
TSE	Transmission System Engineering
TSIN	Transmission Services Information Network
TSP	total suspended particulate matter
	U
UBC	Uniform Building Code
UDC	Utility Displacement Credits
UDF	Utility Displacement Factor
UEG	Utility Electric Generator
USC(A)	United States Code (Annotated)
USCOE	U.S. Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
	V
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds
	W
W	Watt
WAA	Warren-Alquist Act
WEPEX	Western Energy Power Exchange
WICF	Western Interconnection Forum
WIEB	Western Interstate Energy Board
WOR	West of River (Colorado River)
WRTA	Western Region Transmission Association
WSCC	Western System Coordination Council
WSPP	Western System Power Pool