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DOCKET
08-AFC-10
DATE DEC 22 2009
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December 22, 2009

California Energy Commission
Docket Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **LODI ENERGY CENTER TESTIMONY AND RESUMES**
DOCKET NO. (08-AFC-10)

Enclosed for filing with the California Energy Commission is the original of the **LODI ENERGY CENTER TESTIMONY AND RESUMES,** for the Lodi Energy Center Docket No. (08-AFC-10)

Sincerely,

Ashley Y Garner

Ashley Y Garner

PROJECT DESCRIPTION

TESTIMONY OF EDWARD WARNER

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF EDWARD WARNER**

I, Edward Warner, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as the Project Manager for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Project Description for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Edward Warner

I. Name: Edward Warner

II. Purpose:

My testimony addresses the subject of Project Description associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past 4½ years and am presently the Project manager for the LEC with that organization and I have over 27 years of experience in the field of power plant operations, management, development, research and control. I either prepared or assisted in the preparation of the Project Description section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Application for Certification Volume I & II**; docketed 9-10-2008

Exhibit 3 **Figure Identifying the LEC General Arrangement**; docketed 12-18-2009

Exhibit 30 **Supplement C – Natural Gas Supply Line Route Change**; docketed 3-19-2009

Exhibit 28 **Comment of Lodi Unified School District Re: Lodi Energy Center Project**; docketed 12-17-2008

Exhibit 30 **Supplement C – Natural Gas Supply Line Route Change**; docketed 3-19-2009

Exhibit 41 **Supplement B – Data Adequacy Response**; docketed 10-24-200

V. Opinion and Conclusions

I have reviewed the Project Description sections of the Staff Assessment and offer the following:

(A) *Modifications for global consistency in the Staff Assessment:*

- The MW's attributed to the LEC should be **296MW** (replacing varying amounts within the SA).
- The gas-line route reference of 2.5 miles should be changed to **2.7 miles.**
- The length of the proposed transmission line should be changed from 500 feet to approximately **1100 feet.**
- Construction and laydown should be denoted as **four areas** instead of four parcels.
- Any discussion of the transmission structures required should reflect that there will be **five monopole towers that are 73 feet tall and one turning pole no more than 73 feet tall.**
- The Staff Assessment references that recycled water will be provided through interconnection to an existing 48-inch pipeline. This is not accurate. **The recycled water will be provided by a new pipeline that will be located immediately adjacent to the existing pipeline serving the STIG**. Any references to the connection to the 48 inch existing recycled water pipeline should be disregarded.
- The Staff Assessment in some locations states the project site is zoned for agricultural uses. **The accurate zoning is Public and Community Facilities** for the project site and the surrounding land uses are zoned for agricultural uses.
- The length of the Kingdon runway should be changed from ~~3750 feet~~ to **3705 feet**.
- **Since the time of filing of the AFC, the SJCOG revised its Airport Land Use Plan which removed any inconsistency with the location of a buried natural gas pipeline** within the Runway Protection and Inner Approach Zones for the Kingdon Airport. Therefore there is no consistency determination necessary and

Staff has all of the information it needs to make the finding that the Project does not conflict with the Airport Land Use Plan.

- **The SA does not reflect that the LEC received its Underground Injection Well (UIW) Permit** from the US. EPA on October 16, 2009.

- **The SA does not reflect that there will be no duct firing**.

- **The SA does not reflect that the LEC received its draft Final Determination of Compliance** on November 19, 2009.

- At or around the time of the Workshop, **NCPA will provide a confirmation letter from the DTSC that no further action is required**.

- **All references to White Slough should be to a wildlife area**, not recreational.

And,

(B) Minor changes in the Project Description section of the Staff Assessment, as follows:

Page 3-2, Natural Gas Supply Paragraph

NCPA provides the following information concerning the gas line route to reflect modifications in the route contained in Supplement C.

> Natural gas would be delivered to the project through a new off-site pipeline (about "**2.7"** miles long, based on revised route) and run parallel to the 3-mile existing natural gas pipeline (#108) owned by Pacific Gas and Electric which services the existing CTP # 2 plant, which is next door to the LEC project site**. In Supplement C, dated March 2009, the Applicant revised the gas line from that proposed in the AFC.** A portion of the….

Page 3-3, Water Supply Second Paragraph

NCPA requests the water consumption rates be modified to reflect the information contained in Supplement D and strike "fired" as LEC is not duct-fired.

> The LEC's average daily water would be approximately ~~1.23~~ **1.84** million gallons per day (24-hour period), and maximum daily use would be ~~2.2~~ **2.61** million gallons per day during the summer ~~(fired)~~

conditions. The city of Lodi has provided a will serve letter for the project…

Page 3-3, Wastewater Discharge Paragraph

This paragraph contains a reference to retaining a portion of the project wastewater in an underground tank. The LEC design does not include an underground tank for wastewater. This paragraph also incorrectly describes that the process wastewater and stormwater runoff are being treated in the same system. The process wastewater will be handled in a system that is separate from the stormwater runoff system. Stormwater will be collected in the underground stormwater piping, then routed to a dedicated oil/water separator and finally pumped to the White Slough Water Pollution Control Facility (WPCF).

Page 3-4, First Paragraph

NCPA requests the following modification be made to more accurately reflect the construction access route.

> Construction access will generally be from North Cord Road. In addition, the LEC proposes to construct a new temporary access road (approximately 100 feet long) connecting the on-ramp to the southbound lanes of I-5 from eastbound State Route 12 **to the terminus of North Cord Road**. The temporary road would…

AIR QUALITY

TESTIMONY OF JEFFREY D. ADKINS
TESTIMONY OF EDWARD WARNER

STATE OF CALIFORNIA

Energy Resources

Conservation and Development Commission

In the Matter of:	**DOCKET NO. 08-AFC-10**
Application For Certification for the LODI ENERGY CENTER	**DECLARATION OF JEFFREY D. ADKINS**

I, Jeffrey D. Adkins, declare as follows:

1. I am presently employed by Sierra Research, as a Senior Partner.

2. A copy of my professional qualifications and experience is included with the attached testimony (Appendix A) and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Air Quality for the Lodi Energy Center Project (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____

Jeffrey D. Adkins

STATE OF CALIFORNIA

Energy Resources

Conservation and Development Commission

In the Matter of:	**DOCKET NO. 08-AFC-10**
Application For Certification for the LODI ENERGY CENTER	**DECLARATION OF EDWARD WARNER**

I, Edward Warner, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as the Project manager for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included with the attached testimony (Appendix A) and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Air Quality for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Edward Warner

I. Names: Jeffrey D. Adkins and Edward Warner

II. Purpose:

Our testimony addresses the subject of Air Quality, including Greenhouse Gas Emissions, associated with the construction and operation of the Lodi Energy Center Project (LEC).

III. Qualifications:

Jeffrey D. Adkins: I am presently employed at Sierra Research, and have been for the past 16 years and am presently a Senior Partner with that organization. I have a Bachelor of Science Degree in Chemical Engineering and a Juris Doctor Degree. I have over 20 years of experience in the field of air pollution research and control. I prepared the Air Quality section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

Edward Warner: I am presently employed at NCPA, and have been for the past 4½ years and am presently the Project manager for the LEC with that organization and I have over 27 years of experience in the field of power plant operations, management, development, research and control. I helped prepare the Air Quality section of the AFC, including the portion relating to GHG, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of our knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are our own. We make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, we will be sponsoring the following exhibits in this proceeding.

Exhibit 6 **NCPA's Comments on the Final Determination of Compliance**; dated 12-14-2009, docketed 12-15-2009

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Air Quality Comments

Exhibit 11 **San Joaquin Valley Unified Air Pollution Control District's Final Determination of Compliance**; docketed 11-19-2009

Exhibit 12 **NCPA's Withdrawal of PSD**; docketed 11-13-2009

Exhibit 17 **NCPA's Lodi Energy Center BACT: Limit for CO**; docketed 8-24-2009

Exhibit 18 **Supplement D Air Quality Modeling Files**; docketed 7-28-2009

Exhibit 19 **Supplement D Changes to Equipment and Project Fenceline**; docketed 7-27-2009

Exhibit 20 **Comments from EPA Region 9 on the LEC PDOC**; dated 6-02-2009, docketed 6-03-2009

Exhibit 22 **NCPA's Comments on the PDOC**; dated 5-18-2009, docketed 5-20-2009

Exhibit 25 **San Joaquin Valley Unified Air Pollution Control District's Preliminary Determination of Compliance**; docketed 4-15-2009

Exhibit 29 **Data Response Set 3, Responses to CEC Staff Workshop Inquiries 3 through 27**; docketed 3-24-200

Exhibit 34 **NCPA's Data Response Set 2, Responses to CEC Staff Data Requests 56B-74**; docketed 2-16-2009, Data Responses 56B-64

Exhibit 36 **Letter Regarding AFC for the NCPA Lecture Demonstration of Compliance with District Rule 4703**; docketed 1-14-2009

Exhibit 45 **Compliance Statement**; docketed 9-26-2008

Exhibit 46 **Air Quality Modeling Files**; docketed 9-10-2008

Exhibit 47 **Email message from Nancy Matthews to Brewster Birdsall and Matthew Layton**, transmitting CO emissions calculations, dated August 28, 2009

Exhibit 48 **EPA Office of Enforcement and Compliance Assurance Guidance letter to Regions** regarding Guidance an Enforceability Requirements for Limiting Potential to Emit, January 25, 1995

V. Opinions and Conclusions

I have reviewed the Air Quality sections of the Staff Assessment and agree that with incorporation of the Conditions of Certification, as modified below, the LEC will not result in significant air quality or greenhouse gas impacts and will comply with all air quality related laws, ordinances, regulations and standards (LORS).

A. Proposed Conditions of Certification

The proposed licensing conditions related to air quality include those identified in the Final Determination of Compliance issued by the San Joaquin Valley Air Pollution

Control District (Air District), and in the Staff Assessment. NCPA has reviewed these conditions, and with the exceptions noted below, has no substantive objections to any of the conditions. NCPA is requesting changes to some of the SA conditions to make them conform to the Air District's Final Determination of Compliance. Most significantly, NCPA objects to the Staff's proposed condition AQ-SC9 which would require replacement of the selective catalytic reduction (SCR) system catalyst in advance of the time that would otherwise be required by Air District permit conditions. NCPA's objections to Staff conditions are discussed in more detail below. NCPA is also providing additional information for the record to clarify the basis for the annual NOx, CO and VOC emissions rates that were utilized to demonstrate compliance with LORS.

1. Page 4.1-41 and 42, Proposed Condition of Certification AQ-SC5

NCPA is proposing to use primarily Tier 3 engine-equipped construction equipment to minimize the potential air quality impacts of construction activities. We proposed, and the CEC Staff has included, several circumstances under which Tier 3 engines would not be required. We are requesting the inclusion of an additional circumstance under which equipment could be exempted from the Tier 3 requirement, based on a similar condition in the Carlsbad FSA.

AQ-SC5 Diesel-Fueled Engine Control.....

B. All construction diesel engines with a rating of 50 hp or higher…

4. Equipment owned by specialty subcontractors may be granted an exemption, for single equipment items on a case-by-case basis, if it can be demonstrated that extreme financial hardship would occur if the specialty subcontractor had to rent replacement equipment, or if it can be demonstrated that a specialized equipment item is not available by rental

2. Page 4.1-44, Proposed Condition of Certification AQ-SC10

In this condition, CEC staff would require establishing new time limits for startup based on startup performance data collected over the first year of plant operation. This condition is duplicative of AQ-19/AQ-20 and we request that it be deleted.

[Reference to this condition in other conditions should be deleted].

3. Page 4.1-45, Proposed Condition of Certification AQ-2

NCPA has already submitted the acid rain application and therefore, NCPA requests this condition be deleted. The timing of condition is incompatible with acid rain program requirements in that the acid rain application must be submitted 24 months prior to generation of electricity while the proposed condition would require the application to be submitted after completing commissioning, long after the applicable federal deadline. Finally, this condition is not in the District FDOC.

4. Page 4.1-48, Proposed Condition of Certification AQ-26

NCPA requests that Staff revise this condition so that it is consistent with the District FDOC. Please correct the CO lb/hr limit during startup to 900 lb/hr per District FDOC. The 500 lb/hr emission rate during startup is expected to be achievable on an annual average basis, but an individual hour may have CO emissions as high as 900 lbs.

AQ-26 During start-up and shutdown periods, the emissions shall not exceed any of the following limits: NOx (as NO2) - 160.00 lb/hr; CO – ~~500.00~~ **900.00** lb/hr; VOC (as methane) - 16.00 lb/hr; PM10 - 9.00 lb/hr; SOx (as SO2) - 6.10 lb/hr; or Ammonia (NH3) - 28.76 lb/hr. [District Rule 2201]

5. Page 4.1-49, Proposed Condition of Certification AQ-28

NCPA requests the following change to this Condition of Certification remove reference to ambient temperature. We have discussed this with the District and anticipate that they will make this change to the FDOC as well.

AQ-28 Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status ending when ~~by allowing it to cool down from its operating temperature to ambient temperature as~~ the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26]

6. Page 4.1-50, Proposed Conditions of Certification AQ-33, 34 and 36

Please correct CO daily limit to 5,570.3 lb/day, per District permit. The 500 lb/hr emission rate during startup is expected to be achievable on an annual average basis, but NCPA is not able to accept such a limit on a daily basis. Please also correct the NH_3 daily limit and add the language from AQ-36 (below) to this condition so that it is consistent with the FDOC.

AQ-33 Emissions from the gas turbine system, on days when a startup and/or shutdown occurs, shall not exceed the following limits: NOx (as NO2) - 879.7 lb/day; CO – ~~3,170.3~~ **5,570.3** lb/day; VOC - 164.2 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - ~~690.2~~**690.3** lb/day. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201]

Correct NH3 daily limit to 690.3 lb/day per District permit. Please also add the language from AQ-36 (below) to this condition so that it is consistent with the FDOC.

AQ-34 Emissions from the gas turbine system, on days when a startup and/or shutdown does not occur, shall not exceed the following: NOX (as NO2) - 373.0 lb/day; CO - 227.0 lb/day; VOC - 91.0 lb/day; PM10 - 216.0 lb/day; SOX (as SO2) - 146.4 lb/day, or NH3 – ~~690.2~~ **690.3** lb/day. Daily emissions will be compiled for a

twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201]

AQ-36 Delete; the language in this proposed condition has been moved to AQ-33 and AQ-34 per District permit.

7. Page 4.1-50, Condition of Certification AQ-38

NCPA has accepted a rolling 12-month total limit on CO emissions from the project. However, SJVAPCD Rule 2201 (Section 4.5) requires emissions to be quantified on a quarterly basis. To determine acceptable quarterly emissions limits, NCPA must calculate quarterly project emissions based on assumptions about how the units will operate in each quarter, including hours in startup/shutdown and operating hours.

If less-than-full load operation is assumed for any quarter in calculating emissions, LEC would receive emissions limits for that quarter that could constrain operation of the units in that quarter. LEC is confident of its ability to limit CO emissions on an annual average basis; however, NCPA cannot accept individual quarterly CO emissions limits that are derived from the annual limit as shown in the SA, as those limits do not provide for seasonal operational demand fluctuation. We request the staff's proposed limits be replaced with the quarterly limits as shown in the District FDOC.

AQ-38 CO emissions from the gas turbine system shall not exceed any of the following: 1st quarter: ~~49,500~~**142,312** lb; 2nd quarter: ~~49,500~~**142,539** lb; 3rd quarter: ~~49,500~~**86,374** lb; 4th quarter: ~~49,500~~**113,660** lb. [District Rule 2201]

8. Page 4.1-51. Proposed Condition of Certification AQ-43

We propose the following addition to clarify that the annual CO emissions limit in this condition supersedes the short-term CO limits in other conditions.

AQ-43 **Notwithstanding other permit conditions, t**~~T~~he total CO emissions from the gas turbine system (N-2697-5) and the auxiliary boiler (N-2697-7) shall not exceed 198,000 pounds in any 12-consecutive month rolling period.

9. Page 4.1-52. Proposed Condition of Certification AQ-49

This condition should be revised to be consistent with District FDOC.

AQ-49 Source testing to determine compliance with the NOx, CO, VOC, and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted **before** ~~within 60 days after~~ the end of commissioning period and at least once every 12 months thereafter. [District Rules 2201 and 4703, 40 CFR 60.4400(a)]

10. Page 4.1-53, Proposed Condition of Certification AQ-53

NCPA requests this verification be modified to be consistent with the requirements of the condition.

AQ-53 The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Verification: The project owner shall submit the **source test report** ~~proposed protocol for the source tests~~ to both the District and CPM **within 60 days of the completion of the tests** ~~for approval in accordance with condition **AQ-46**.~~

11. Pages 4.1-54 and 55, Proposed Conditions of Certification AQ-59 and 60

NCPA requests these conditions be revised to be consistent with the District FDOC:

AQ-59 In accordance with 40 CFR Part 60, Appendix F, 5.1, ~~each~~ **the CO** CEMS must be audited at least once each calendar quarter, ~~CEMS audit is not required for the quarters in which both relative accuracy test audit (RATA) and source testing are performed. The District shall be notified prior to completion of the audits.~~ **by conducting cylinder gas audits (CGA) or relative accuracy audits (RAA) CGA or RAA may be conducted three of four calendar quarters, but no more than three calendar quarters in succession.** Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

AQ-60 The owner or operator shall perform RATA for ~~NOx,~~ CO ~~and O2~~ as specified by 40 CFR Part 60, Appendix F, 5.1.1, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. **The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. Linearity reports shall be submitted along with quarterly compliance reports to the District.** [District Rule 1080]

12. Page 4.1-55, Missing FDOC Condition

Please include Condition 72 from District permit:

AQ-X The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. Linearity reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

13. Page 4.1-56, Proposed Conditions of Certification AQ-66, 67 and 69

NCPA requests these conditions be revised as follows to be consistent with the District FDOC.

AQ-66 The owner or operator shall maintain records of the following items: 1) hourly and daily emissions, in pounds, for each pollutant listed in this permit on the days startup and or shutdown of the gas turbine system occurs, 2) hourly and daily emissions, in pounds, for each pollutant in this permit on the days startup and or shutdown of the gas turbine system does not occur, 3) quarterly emissions, in pounds, for each pollutant listed in this permit**, and (4) the combined CO emissions (12 consecutive month rolling total), in pounds, for permit unit N-2697-5 and N-2697-7.** [District Rule 2201]

AQ-67 The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, length and reason for reduced load periods, total hours of operation, the type and quantity of fuel used, duration of start-up, **and** duration **each** ~~of~~ shutdown~~,~~ ~~date/time and duration of each primary re-ignition period~~. [District Rule 2201 and 4703, 6.26, 6.28, 6.2.11]

AQ-69 The owner or operator shall submit a written report of CEM operations for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter and shall include the following: **Date**, ~~T~~time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred.

14. Page 4.1-63 to 65, Missing Acid Rain-Related Conditions of Certification

Conditions 108 through 121 from the FDOC need to be inserted to cover acid rain conditions

15. Page 4.1-66 to 67, Proposed Conditions of Certification AQ-128 through 136

NCPA request the verifications of these conditions be revised to reference the Condition of Certification AQ-46 instead of AQ-38.

16. Page 4.1-68, Proposed Condition of Certification AQ-137

This verification should be revised to correct the reference from "proposed protocol" to "source test report."

Verification: The project owner shall submit ~~the proposed protocol for~~ the source **test report** ~~tests~~ to both the District and CPM **within 60 days of completion of the tests** ~~for approval in accordance with condition~~ AQ-~~38~~**46**.

17. Page 4.1-69, Proposed Condition of Certification AQ-145

NCPA request this condition be revised to be consistent with District FDOC.

AQ-145 The permittee shall maintain records of: (1) the date, (2) heat input rate, MMBtu/day, (3) daily emissions (lb/day) for each pollutant listed in this permit, and (4) quarterly emissions (lb) for each pollutant listed in this permit **and the combined CO emissions (12 consecutive month rolling total), in pounds, for permit unit N-2697-5 and N-2697-7.** [District Rule 2201]

B. Additional Air Quality Issues

1. Proposed Condition AQ-SC 9 Related to Ammonia Slip

NCPA is concerned with the Staff's proposed condition that would require the SCR catalyst be replaced after ammonia slip levels are determined to be in excess of 5 ppm. NCPA believes that there is no technical justification for this requirement, as the SA fails to establish a significant, adverse environmental impact that warrants mitigation beyond the requirements of the San Joaquin Valley APCD. Further, NCPA believes that the Staff has failed to consider the collateral environmental impacts of such a requirement.

The CEC Staff has proposed Condition AQ-SC9 to require that LEC replace the selective reduction catalyst (SCR) within 12 months after 24-hour average ammonia concentrations are calculated or measured to exceed a 5 ppm ammonia slip limit. In contrast, the FDOC issued by the SJVAPCD has established a 10 ppm ammonia slip limit.

It is undisputed that there is no Best Available Control Technology (BACT) requirement for ammonia emissions in the SJVAPCD regulations; the CEC Staff bases its proposed ammonia slip condition on a recommendation that the project should follow the Air Resources Board recommendation of 5 ppmvd for ammonia slip, established in the Guidance for Power Plant Siting. However, the CEC Staff presents no technical analysis or additional discussion regarding the context of the ARB Guidance recommendation to support its proposal, nor has the CEC Staff provided any evidence suggesting the need to mitigate a significant impact. Finally, even if a 5 ppm ammonia slip level is feasible for

the LEC unit, the CEC Staff has failed to evaluate the adverse environmental impacts associated with its proposal. Each of these issues is discussed in more detail below.

a. There is no BACT requirement for ammonia slip in the SJVAPCD

BACT in the SJVAPCD is required under District Rule 2201. This rule identifies specific pollutants that are subject to BACT requirements; in contrast with other Districts with which the Commission is familiar, such as the South Coast AQMD, the SJVAPCD does not regulate ammonia emissions directly. This is not an oversight that warrants correction by the CEC Staff; rather, it is a conscious decision by the regulatory agency charged by the State with protecting air quality in the San Joaquin Valley. The CEC Staff has not questioned the ammonia slip level from a regulatory perspective. Rather, the CEC Staff is apparently seeking to impose a new "performance standard" on the Project, based solely on the argument that the 5 ppm ammonia slip level is achieved by other power plants in the state. We believe the CEC Staff should not be imposing a "performance standard" without some technical basis. As discussed further below, no technical basis has been presented.

b. The CEC Staff has presented no credible technical evidence to support its proposed ammonia slip condition

In the draft FDOC, the SJVAPCD has indicated that further control of ammonia emissions, below the 10 ppm level required by the SJVAPCD, will not result in any significant air quality or health benefits. The CEC Staff has not disagreed with any analyses performed by the SJVAPCD. In fact, the CEC Staff appears to agree with the technical basis for the SJVAPCD's determination that a lower ammonia slip limit is not necessary for the LEC:

> Reactive with sulfur and nitrogen compounds, ammonia is especially abundant in the San Joaquin Valley from natural sources, agricultural sources, and as a byproduct of tailpipe controls on motor vehicles. Ammonia particulate forms more readily with sulfates than with nitrates, and particulate formation in the San Joaquin Valley has been found to be limited by the availability of SOx and NOx in ambient air, rather than the availability of ammonia (SJVAPCD 2008 PM2.5 Plan).
>
> [LEC SA, p. 4.1-25]

The CEC Staff's argument with respect to the alleged need to reduce ammonia slip emissions is quite simple, and consists of the statement that combined-cycle projects should follow ARB guidance.

However, NCPA believes that the ARB guidance has been followed in determining the ammonia slip limit of 10 ppm for the project. The ARB guidance states, "Given the *potential for health impacts* and *increases in PM_{10} and $PM_{2.5}$*, districts should ensure that ammonia emissions are minimized from projects using selective catalytic reduction. Staff *recommends that districts consider* establishing ammonia slip levels below 5 ppmvd at 15 percent oxygen in light of the fact that control equipment vendors have

openly guaranteed single-digit levels for ammonia slip."[1] [Emphasis added.] The guidance therefore provides two reasons a district should consider establishing a lower ammonia slip level: health impacts and particulate matter increases. NCPA's health risk assessment and the SJVAPCD Draft FDOC evaluated ammonia emissions based on a 10 ppm ammonia slip level and determined that health risks from the proposed project were well below levels of concern. [2,3] Further, the San Joaquin Valley APCD, in which the LEC is located, has determined that ammonia emissions from power plants in the District do not contribute significantly to particulate formation in the valley.[4] The District has made a specific determination that a 10 ppm ammonia slip is adequate for the LEC project:

> "NOx reductions are very critical to attain ozone standards for the Valley. The District allows slight flexibility in ammonia slip to help achieve the best performance of NOx reduction technology. Furthermore, District performed the health risk analysis for ammonia emissions and has determined that there is no significant health risk to the nearest receptors from these emissions. For these reasons, the District has decided not to lower the proposed ammonia slip."[5]

c. The Staff has not established a significant environmental impact that requires mitigation.

The CEC Staff has not contested the SJVAPCD's regulatory determinations with respect to ammonia slip. Rather, the CEC Staff argues that lower ammonia slip levels should be required because of ARB guidance. However, CEQA does not give the CEC Staff a basis for overruling the determination of a Responsible Agency and for seeking mitigation without regard to the significance of the impact. Further, CEQA requires mitigation only in the event that a significant, adverse air quality impact has been identified, and such mitigation would serve to reduce that impact. However, the CEC Staff's analysis does not establish any basis for concluding that reduced ammonia slip levels would provide any benefit to ambient PM_{10} and $PM_{2.5}$ levels. Finally, as discussed above, the CEC staff's own analysis recognizes that PM formation in the San Joaquin Valley is limited by ambient SOx and NOx and not by the availability of ammonia and indicates that:

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[1] CARB's Guidance for Power Plant Siting and Best Available Control Technology, p. 27, Approved July 22, 1999. Accessed at *http://www.arb.ca.gov/energy/powerpl/guidocfi.pdf* on October 11, 2009. On p. 63, the recommendation is "at or below 5 ppmvd."

[2] Supplement D Table 5.1-46R and Appendix 5.1D, revised July 2009.

[3] SJVAPCD, Draft Final Determination of Compliance, Attachment F (Health Risk Assessment and Ambient Air Quality Analysis).

[4] SJVAPCD 2008 $PM_{2.5}$ Plan (see for example Chapter 3, p. 3-8: "Ammonia (NH_3) is abundant throughout the Valley and does not act as a limiting precursor.")

[5] SJVAPCD, Draft Final Determination of Compliance, Attachment J (District's Response To The Comments Received from the Public, Applicant, CEC, CARB and US EPA on the PDOC Issued on April 15,2009), p. xii.

> Offsetting SOx and NOx emissions would both avoid significant secondary PM10/PM2.5 impacts and reduce secondary pollutant impacts to a less than significant level. [LEC SA, p. 4.1-25]

This discussion does not contain a demonstration of a significant adverse environmental impact, nor does it provide a basis for concluding that the proposed mitigation would, in fact, mitigate the identified impact.

d. The CEC Staff has failed to address the adverse environmental impacts associated with a 5 ppm slip level at this facility.

The CEC Staff has argued in other proceedings (e.g. Roseville Energy Park, TID Walnut Energy Center and Cosumnes Power Plant Project) that a lower ammonia slip level merely requires that an SCR catalyst be replaced with greater frequency, and that a 5 ppm slip level simply translates into an increased operating and maintenance cost. However, this analysis fails to consider that lower ammonia slip limit and resulting shorter catalyst life will result in more frequent catalyst replacement, generating additional waste catalyst material that must be disposed of in landfills.

2. Federally Enforceable Annual CO Emission Limit

LEC's proposed hourly, daily and quarterly emissions limits are based upon conservative worst-case operating assumptions regarding gas turbine CO emissions performance during startups. These conservative assumptions are necessary to ensure that LEC does not violate emissions or operational limits under any operating conditions. NCPA has demonstrated[6], and the CEC staff[7] and the SJVAPCD staff[8] have concurred, that even using these conservative worst-case assumptions, CO emissions from the project will not cause or contribute to violations of the ambient air quality standards.

After NCPA submitted Supplement D to the AFC, the SJVAPCD made new BACT determinations that affected emissions from the project. First, the permitted CO emission rate for baseload operation was reduced from 3 ppm to 2 ppm, thereby reducing baseload emissions from 14.19 lb/hr to 9.46 lb/hr. Second, the maximum allowable time for each startup was reduced from 6 hours to 3 hours in the draft permit.

Following these changes in operational restrictions, NCPA reevaluated the assumptions used in calculating annual emissions and determined that less conservative, more realistic assumptions could be made ***on an annual average basis*** that would allow a reduction in total annual CO emissions for the project to under 99 tons per year. On this basis, NCPA was able to propose that the SJVAPCD include a "federally enforceable" 198,000 lb/yr (99 tpy) limit in the District's final permit. This permit limit, which is expressed as a 12-month rolling total limit, keeps emissions from the LEC below the

[6] AFC.

[7] Staff Assessment

[8] FDOC.

thresholds for a "significant" emissions increase so that the project is not required to obtain a Prevention of Significant Deterioration permit.[9,10]

EPA guidance requires that a permit limitation must meet two criteria in order to be "federally enforceable," 1) it must be enforceable by EPA and subject to public review; and 2) it must be enforceable as a practical matter.[11] The annual CO emissions limitation in the District's permit meets these criteria as follows.

1) The annual CO limit was issued pursuant to an EPA-approved and enforceable permitting program, the SJVAPCD's NSR program (District Rule 2201) and subject to public notice and review pursuant to this rule; and
2) The limit is enforceable as a practical matter because it meets the "practical enforceability " criteria established in EPA guidance, including:
    a. Specifying a technically accurate limitation that indicates the portions of the source subject to the limitation;
    b. Specifying the time period for the limitation; and
    c. Identifying the method to determine compliance, including appropriate monitoring, record keeping and reporting.[12]

The District's FDOC specifically describes the portions of the source subject to the annual CO limitation and the time period of the limitation (rolling 12-month period) in Condition 51. The FDOC also includes detailed CO monitoring, reporting, and record keeping requirements in Conditions 64 through 84.

Additionally, the monitoring requirement is further described in the EPA guidance as follows:

> *Where monitoring cannot be used to determine emissions directly, limits on appropriate operating parameters must be established for the units or source, and must be sufficient to yield data from the relevant time period that is representative of the source's compliance with the standard or limit.*[13]

Thus, the EPA guidance clearly prefers direct monitoring over limits on operating parameters. As discussed above, the FDOC includes extensive requirements for continuous emissions monitoring of CO emissions to ensure continuous compliance. Therefore, NCPA believes that the District permit does not require additional operational limitations to ensure practical, and therefore federal, enforceability of the annual CO emissions limit.

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[9] NCPA letter to EPA withdrawing PSD

[10] Staff Assessment, p. 4.1-36.

[11] EPA 1/25/92 Guidance on Limiting Potential to Emit

[12] Ibid at page 6.

[13] Ibid at page 9.

In summary, NCPA believes that the annual CO limit included in the District permit is federally enforceable.

3. Calculation of Annual NOx and VOC Emissions

To maintain consistency in the analysis of annual project emissions, NCPA has also used the annual operating assumptions regarding startup times (described above for CO) to calculate potential annual NOx and VOC emissions from the project under the same set of operating assumptions.[14] The results of this evaluation are compared with the annual NOx and VOC emissions shown in Supplement D in the following table.

Pollutant	Potential Annual Emissions, Annual Average Startup Assumptions	Potential Annual Emissions Based on Quarterly ERCs (from Supplement D)
NOx	71.3 tpy	76.3 tpy
VOC	16.6 tpy	16.8 tpy

These annual NOx and VOC calculations are provided for information only and are **not being proposed** as permit conditions. Because LEC must provide ERCs on a quarterly basis for NOx and VOC, the annual gas turbine potential to emit for those pollutants will continue to be calculated as the sum of the quarterly emissions, and no new, separate annual emissions limits are being proposed. Table 5.1A-6R of Supplement D has been revised to incorporate this additional information.

[14] Annual SOx, NH_3 and PM_{10} emissions are calculated based on full-time, full load operation so are not affected by changes in assumptions regarding startup times.

Table 5.1A-6R
NCPA Lodi Energy Center
Calculations for Maximum Hourly, Daily, Quarterly and Annual Criteria Pollutant Emissions
Rev 12/09 Siemens SCC6-5000F 1x1, no duct firing; 2 ppm CO; add annual average operating scenario

	CTG/HRSG								
	Hot Start Hours	Cold Start Hours	Shutdown Hours	Base Load Hours	Total Operational Hours (NOx, CO, VOC)	Nonoperational Hours (NOx, CO, VOC) (Note 1)	Total Operational Hours (SO2, PM10)	Auxiliary Boiler Total Hours	
Operating Assumptions for Calculating Daily and Quarterly Emissions									
Daily	0	6	included in startup hours	18	24	0	24	24	per day
Q1	100	42		1534	1676	484	2160	1000	per quarter
Q2	100	42		1558	1700	484	2184	1000	per quarter
Q3	40	36		1900	1976	232	2208	1000	per quarter
Q4	72	36		1740	1848	360	2208	1000	per quarter
Operating Assumptions for Calculating Annual Emissions									
Annual	156	78	included in startup hours	7590	7824	936	8760	4000	per year, annual average basis

	Hourly Emission Rates						
Equipment	max. hour	NOx (lbs/hr)	SOx (lbs/hr)	CO (lbs/hr)	VOC (lbs/hr)	PM10 (lbs/hr)	NH3 (lbs/hr)
Gas Turbine, base	1	15.54	6.10	9.46	3.79	9.00	28.76
Gas Turbine, startups/shutdowns, ann. avg.	0	100	6.10	500	16.00	9.00	28.76
Gas Turbine, startups/shutdowns, max. hourly	1	160	--	900	--	--	--
Auxiliary Boiler	1	0.31	0.10	1.34	0.15	0.28	0
Cooling Tower	1	0	0	0	0	0.93	0

Table 5.1A-6R (cont'd)

Equipment	NOx Emissions							
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Annual lb/yr (Note 3)	Potential to Emit, lbs/yr (Note 4)
Gas Turbine, base	15.5	279.7	23,833.2	24,206.1	29,519.6	27,033.8	117,923	151,393
Gas Turbine, startups/shutdowns	160.0	600.0	14,200.0	14,200.0	7,600.0	10,800.0	23,400	(inc)
Auxiliary Boiler	0.3	7.4	307.4	307.4	307.4	307.4	1,229	1,229
Cooling Tower	0	0	0	0	0	0	0	0
Total, CTG/HRSG only	160.0	879.7	38,033	38,406	37,120	37,834	141,323	151,393
Total	160.3	887.0	38,341	38,713	37,427	38,141	142,552	152,622

Equipment	CO Emissions							
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Annual lb/yr (Notes 3,6)	Potential to Emit, lbs/yr
Gas Turbine, base	9.5	170.3	14,510.8	14,737.9	17,973.0	16,459.5	71,797	--
Gas Turbine, startups/shutdowns	900.0	3,000.0	127,800.0	127,800.0	68,400.0	97,200.0	117,000	--
Auxiliary Boiler	1.3	32.1	1,337.5	1,337.5	1,337.5	1,337.5	5,350	--
Cooling Tower	0	0	0	0	0	0	0	0
Total, CTG/HRSG only	900.0	3,170.3	142,311	142,538	86,373	113,660	188,797	--
Total	901.3	3,202.4	143,648	143,875	87,710	114,997	194,147	198,000 (Note 2)

Equipment	VOC Emissions							
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Annual lb/yr (Note 3)	Potential to Emit, lbs/yr (Note 4)
Gas Turbine, base	3.8	68.3	5,817.9	5,908.9	7,206.0	6,599.2	28,786	33,020
Gas Turbine, startups/shutdowns	16.0	96.0	2,272.0	2,272.0	1,216.0	1,728.0	3,744	(inc)
Auxiliary Boiler	0.2	3.7	153.3	153.3	153.3	153.3	613	613
Cooling Tower	0	0	0	0	0	0	0	0
Total, CTG/HRSG only	16.0	164.3	8,090	8,181	8,422	8,327	32,530	33,020
Total	16.2	167.9	8,243	8,334	8,575	8,480	33,143	33,633

Equipment	SOx Emissions						
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Potential to Emit, lbs/yr
Gas Turbine, base	6.1	109.8	12,308.8	12,455.2	13,004.1	12,808.9	50,577
Gas Turbine, startups/shutdowns	0.0	36.6	866.1	866.1	463.6	658.7	2,855
Auxiliary Boiler	0.1	2.5	104.1	104.1	104.1	104.1	416
Cooling Tower	0	0	0	0	0	0	0
Total, CTG/HRSG only	6.1	146.4	13,175	13,321	13,468	13,468	53,432
Total	6.2	148.9	13,279	13,425	13,572	13,572	53,848

Equipment	PM10/PM2.5 Emissions						
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Potential to Emit, lbs/yr
Gas Turbine, base	9.0	162.0	18,162.0	18,378.0	19,188.0	18,900.0	74,628
Gas Turbine, startups/shutdowns	0.0	54.0	1,278.0	1,278.0	684.0	972.0	4,212
Auxiliary Boiler	0.3	6.7	280.0	280.0	280.0	280.0	1,120
Cooling Tower	0.9	22.3	2,011.2	2,033.6	2,055.9	2,055.9	4
Total, CTG/HRSG only	9.0	216.0	19,440	19,656	19,872	19,872	78,840
Total	10.2	245.1	21,731	21,970	22,208	22,208	79,964

Equipment	NH3 Emissions						
	Max lb/hr	Max lb/day	Max lb/Q1	Max lb/Q2	Max lb/Q3	Max lb/Q4	Potential to Emit, lbs/yr
Gas Turbine, base	28.8	517.6	58,034.1	58,724.3	61,312.5	60,392.3	238,463
Gas Turbine, startups/shutdowns	0.0	172.5	4,083.7	4,083.7	2,185.6	3,105.9	13,459
Auxiliary Boiler	0	0	0	0	0	0	0
Cooling Tower	0	0	0	0	0	0	0
Total, CTG/HRSG only	28.8	690.2	62,118	62,808	63,498	63,498	251,922
Total	28.8	690.2	62,118	62,808	63,498	63,498	251,922

Notes:

1. "Nonoperational Hours" reflect the hours the gas turbine is offline prior to a cold or hot startup. Because there are fewer startup hours in the "annual " scenario than in the individual quarterly operating scenarios, there are fewer offline hours associated with startups and therefore more total operational hours in this annual scenario.
2. NCPA has proposed to limit combined CO emissions from N-2697-5-0 (gas turbine) and '-7-0 (auxiliary boiler) to 198,000 lb/yr.
3. Not intended as permit limit.
4. Potential to Emit for NOx and VOC reflects sum of quarterly emissions for which offsets will be provided.
5. Calculation of startup/shutdown emissions for annual operation reflects annual average hourly startup emission rate of 500 lb/hr, while quarterly calculation reflects 900 lb/hr permit limit. When quarterly CO startup emission approach the 127,800 lb quarterly limit, then quarterly operating emissions will be less than the annual average values and the resulting sum of startup plus operating emissions will be much less than the annual limit of 198,000 lb CO.

2. **SUMMARY,** GREENHOUSE GAS EMISSIONS (Jeffrey Adkins and Ed Warner)

NCPA supports the Commission Staff's conclusions in Appendix AIR-1. We agree with the CEC Staff's assessment that the proposed project would displace other, less efficient power plants and would facilitate the integration of renewable resources. We concur in the CEC Staff's determination that "[b]ecause the project's emissions per megawatt-hour (MWh) would be lower than those of other power plants that the project would displace, the addition of Lodi Energy Center would contribute to a reduction of the California and overall Western Electricity Coordinating Council system GHG emissions and GHG emission rate average."[15] The CEC Staff also finds that LEC would not be expected to cause a significant cumulative impact and furthers the state's strategy to reduce fuel use and GHG emissions.

1. The LEC Project Meets the "Avenal Test"

In the Presiding Member's Proposed Decision for the Avenal Energy Project (CEC-800-2009-006-PMPD), the Committee has established a three-part test to ensure that new natural gas-fired power plants approved by the CEC will support the goals and policies of AB 32 and the related parts of California's GHG framework. The elements of this test are as follows:

> (1) The project must not increase the overall system heat rate for natural gas plants;
>
> (2) The project must not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and
>
> (3) Taking into account the factors listed in (1) and (2), the project must reduce system-wide GHG emissions and support the goals and policies of AB 32.[16]

LEC's consistency with these requirements has been demonstrated in various previously-submitted documents and is summarized below.

a. The LEC will not increase the overall system heat rate for natural gas plants.

LEC's heat rate and resulting GHG emissions will be among the lowest in the state (and country) for gas-fired power plants. In Supplement D to the AFC, LEC presented the projected CO_2 emission rate from LEC as 0.357 metric tonnes per MWh.[17] As stated in the Avenal PMPD, "…heat rate is directly correlated with emissions (including GHG emissions)…" [p. 104], so lower CO_2 emissions on a lb/MWh basis correspond to a lower heat rate.

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[15] Staff Assessment, p. 4.1-73.

[16] PMPD for Avenal, p. 111.

[17] AFC, Supplement D, Table 5.1A-7R.

The project would not increase the overall system heat rate for natural gas plants because it has a lower heat rate than, and would operate to replace energy from, existing, less efficient generating resources in the service territory. NCPA's participants in the LEC project told the Committee,

> "The energy from the Lodi Energy Center will be used to supply existing load, replacing baseload contracts that expire in the spring of 2012.... With its highly efficient use of natural gas, operation of the Lodi Energy Center will result in only 800 pounds per megawatt hour of greenhouse gases, replacing market purchases averaging around 1,000 pounds per megawatt hour."[18]

> "On the state water project's part, low greenhouse gas emission energy produced by the Lodi Energy Center will be used to replace high energy greenhouse gas emission energy produced by a coal-fired power plant located in Nevada that is under contract to the state water project, thus significantly help the state water project meet the AB 32 greenhouse gas emission reduction goals."[19]

In the event that the demand for electricity does not reach plants with efficiencies comparable to that of LEC, only plants more efficient than LEC will operate. In that case, LEC will not run and will not emit any GHGs.

b. The LEC will not interfere with generation from existing renewable facilities or with the integration of new renewable generation.

The Avenal PMPD acknowledges the need for backup generation to foster renewables integration at p. 109:

> Most new renewable generation in California will be wind and solar generated power… Unfortunately, the wind does not blow, nor does the sun shine, around the clock. As a result, in order to rely on such intermittent sources of power, utilities must have available other generating resources or significant storage that can fill the gap when renewable generation decreases… Indeed, because of this need for backup generation, or if and when utility-scale storage becomes feasible and cost-effective, nonrenewable generation will have to increase in order for the state to meet the 20 percent renewable portfolio standard.

LEC will not "crowd out" renewables from the NCPA system. The NCPA transmission system is adequate to incorporate LEC's generation without interfering with NCPA's ability to accept renewable resource energy when it is available.

Further, LEC will not displace renewable resources. Natural gas fired generation does not displace wind generation and will not displace solar generation. Wind

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[18] Status Conference Hearing 11/19/09 RT 14-15

[19] Ibid, page 13

generation is scheduled based upon wind forecasts and all the energy from wind is taken to serve load in the real time market. Similarly, solar generation will be scheduled based upon weather forecasts and all energy generated from a solar facility will be taken by the California Independent System Operator (CAISO) in the real time market. Neither will be backed down for economic or other reasons in the CAISO forward or real time market. In a sense, these intermittent resources are "must take" resources. Therefore, the Project will not back down or replace zero carbon generation from wind or solar resources.

Likewise, the Project will not back out nuclear or hydroelectric resources. The nuclear resources cannot adjust their output at the same rate as a gas fired combined cycle power plant, and are base load facilities. Thus, gas fired generation will not back down or displace nuclear resources. Hydroelectric resources when run-of-the-river are "must take" resources; when they are dispatchable, they have a very low variable cost and thus will be dispatched prior to any fossil generation. Therefore, the Project will not back down and displace either hydroelectric or nuclear generation.

The Staff Assessment finds that the project "would provide flexible, dispatchable power necessary to integrate some of the growing generation from intermittent renewable sources, such as wind and solar generation."[20] LEC may also assist project participants in increasing access to renewable resources. As stated by Modesto Irrigation District at the November 19 status conference, LEC

> This resource will replace, as I indicated, the long-term contracts MID has from the Northwest that we import over the California-Oregon Transmission Project or COTP lines. This also gives the benefit -- well, not only will this reduce transmission line losses. It also frees up available capacity on that line to import potential renewable resources from the Northwest, which is important to us.."[21]

All of these factors support a finding that the LEC will not interfere with generation from existing renewable facilities or with the integration of new renewable generation—in fact, the project will assist in integrating renewables into the resource mix.

c. Taking into account the factors listed in (1) and (2), the project will reduce system-wide GHG emissions and support the goals and policies of AB 32.

As discussed above, the LEC will have a lower heat rate and lower GHG emissions that those of other facilities serving a similar role. The CEC Staff compares the LEC's heat rate and GHG emission rate to those of other plants in

[20] Staff Assessment, page 4.1-73.

[21] 11/19/09 RT 11

the LEC service territory in Greenhouse Gas Table 4 of the SA and concludes that “Compared to most other new and existing units in San Joaquin County and Stanislaus County, the proposed LEC would be more efficient, and emit fewer GHG emissions during any hour of operation.” [22]

The project will also facilitate the integration of new and existing renewable generation into the NCPA generating portfolio. Therefore, the project is consistent with and supports the goals and policies of AB 32.

[22] Staff Assessment, p. 4.1-82.

BIOLOGICAL RESOURCES

TESTIMONY OF RUSSELL HUDDLESTON

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF RUSSELL HUDDLESTON**

I, Russell Huddleston, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Biologist.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Biological Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Oakland, CA on December 21, 2009.

- Original signed

_____

Russell Huddleston

I. Name: Russell Huddleston

II. Purpose:

My testimony addresses the subject of Biological Resources associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past 9 years and am presently a Biologist with that organization. I have an E.S. in Ecology and a B.S. Degree in Biology. I prepared or assisted in the preparation of the Biological Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009

Exhibit 13 **San Joaquin Council of Governments Minute Resolution 09-03**; dated 10-26-2009, docketed 10-28-2009

Exhibit 14 **USFWS Response to NCPA's Request for Project Inclusion under the Intra-Service Biological & Conference Opinion on Issuance of a Section 10(a)(1)(B)**; dated 10-22-2009, docketed 10-26-2009

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 1-9

Exhibit 37 **Wetland Concerns – Technical Memorandum**; docketed 1-12-2009

Exhibit 42 **SJMSCP Response to Lead Agency Advisory Agency Notice to SJCOG, Inc.**; docketed 10-10-2008

V. Opinion and Conclusions

I have reviewed the Biological Resources section of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the Conditions of Certification, the LEC project will not result in significant biological impacts and will comply with all biology related laws, ordinances, regulations and standards (LORS).

The minor modifications to the Staff Assessment are:

Page 4.2-1, Second Paragraph

NCPA provides the following clarification to illustrate that only a portion of the proposed natural gas pipeline would be located within the 200-foot GGS habitat buffer.

> An adjacent irrigation canal to the south of the LEC project site has been identified as potential habitat for giant garter snake (GGS), a state and federal protected species. The SJMSCP requires a 200-foot buffer from GGS habitat, which the applicant will not be able to maintain during construction activities. In addition, one laydown area and the southern end of two other laydown areas and the LEC project site are located within the 200-foot GGS habitat buffer. **A portion of the** ~~The~~ proposed natural gas pipeline will also be located within the 200-foot buffer. The applicant….

Page 4.2-14, Second Paragraph)

NCPA requests the following addition to the text to clarify the scope of construction zone fencing.

> Wildlife may become entrapped in open trenches during construction of the LEC or installation of the natural gas pipeline. As an impact avoidance and minimization measure, the applicant would set up wire backed silt fences around construction zones **adjacent to sensitive resource areas** to prevent the entrapment of wildlife. Additionally, staff recommends implementation of proposed Condition of Certification **BIO-8** (Mitigation Management to Avoid Harassment or Harm) which would also require the installation of escape ramps within open trenches, inspection of trenches for trapped animals, or covering open trenches at night. Implementation of these measures is expected to mitigate adverse impacts to wildlife.

Page 4.2-19, Last Paragraph, ending on page 4.2-20

NCPA requests the following addition to the text to clarify the parameters of construction and fencing within the 200 foot setback.

> The SJMSCP requires a 200-foot setback from potential GGS habitat with no vegetation removal within the setback. The south end of the LEC project site including the swale area, Laydown Area C, southern end of Laydown Areas B and D, and approximately 1,200-foot segment of the natural gas pipeline would be within the required 200-foot setback. A recommendation by the HTAC for a variance to reduce the 200-foot setback to a 30-foot buffer has been approved by the JPA (SJCOG 2009). The reduction in the 200-foot setback is necessary as this would restrict the eventual footprint of the proposed LEC power plant, would limit the use of Laydown Areas B and D, and would restrict the use of Laydown Area C. The applicant proposes the following impact avoidance and minimization measures:

- Maintain a 30-foot buffer area from the edge of the irrigation canal;
- To the maximum extent possible **when working within the 200-foot GGS setback**, construction activities associated with vegetation removal, initial ground disturbance, and grading would be completed during the active season for the GGS between May 1 and October 31. Any ground disturbance outside of this window would only proceed once authorized by the HTAC.
- The buffer area will be clearly identified with temporary fencing and signs will be installed demarking the area as environmentally sensitive. Wire backed silt fencing will be installed prior to any ground disturbance to prevent snakes and other wildlife from entering the work areas **within the 200-foot GGS setback**.

Page 4.2-30, Proposed Condition of Certification BIO-5

NCPA requests that an allowance be made for electronic media as designated below.

> **BIO-5** The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media **(video or DVD)** is made available to all participants;….

Page 4.2-33, Proposed Condition of Certification BIO-7

NCPA request that Item 4's prohibition on use of tertiary treated water for dust suppression adjacent to irrigation and drainage canals be deleted and that Item 7 include the word "active".

BIO-7 Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources, including:

1. Design, install and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

2. Design, install and maintain transmission lines and all electrical components in accordance with the Avian Power Line Interaction Committee (APLIC 2006) *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* to reduce the likelihood of electrocutions of large birds;

3. Eliminate any California Exotic Pest Plants of Concern (Cal-IPC 2007) List A species from landscaping plans;

4. Prescribe a road sealant that is non-toxic to wildlife and plants ~~and use only fresh water when adjacent to irrigation and drainage canals~~;

5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat;

6. Use straw wattles or silt fences to prevent sediment from reaching irrigation and drainage canals;

7. Establish buffer zones around **active** irrigation and drainage canals;….

[The remainder of the Condition is unchanged]

Page 4.2-34, Proposed Condition of Certification BIO-8

NCPA requests that the following language in item 8 of this condition be modified to reflect the application of this requirement to only within the 200 foot setback.

8. Construction activities associated with vegetation removal **when working within the 200-foot GGS setback**, initial ground disturbance, and grading would be completed during the active season for giant garter snake between May 1 and October 31.

[The remainder of the Condition is unchanged]

Page 4.2-36, Proposed Condition of Certification BIO-12

NCPA requests that the following language in item 3 of this condition be modified to provide for monthly submittal of nest survey results.

3. If active nests are detected during the survey, schedule work outside nesting and fledging periods. If this is not possible, a no-disturbance buffer zone (protected areas surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with the HTAC and monitoring plan shall be developed. Nest locations shall be mapped using GPS technology and submitted, along with a ~~weekly~~ **monthly** report stating the survey results to the CPM; and

CULTURAL RESOURCES

TESTIMONY OF W. GEOFFREY SPAULDING, Ph.D
TESTIMONY OF CLINT HELTON

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATIONS OF W. GEOFFREY SPAULDING, Ph.D. AND CLINT HELTON**

I, W. Geoffrey Spaulding, declare as follows:

1. I am presently employed by CH2M Hill, as a Senior Scientist.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Cultural Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on December 21, 2009.

- Original signed

_____

W. Geoffrey Spaulding

I, Clint Helton, declare as follows:

1. I am presently employed by CH2M Hill, as a Cultural Resources Task Lead.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Cultural Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at _Santa Ana, CA on December 21, 2009.

_____

Clint Helton

I. Name: W. Geoffrey Spaulding and Clint Helton

II. Purpose:

Our testimony addresses the subject of Cultural Resources associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

(Geoffrey Spaulding): I am presently employed at CH2MHill, and am presently a Paleontological Resources Task Lead in the field with that organization. I have a Ph. D. in Geology and I have over 30 years of experience in the field of Cultural Resources. I prepared or assisted in the preparation of the Cultural Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

(Clint Helton): I am presently employed at CH2MHill, and have been for the past 5 years and am presently the Cultural Resources Task Lead. I have an M.A. in Anthropology and I have over 13 years of experience in the field of Cultural Resources. I prepared or assisted in the preparation of the Cultural Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of our knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I/we make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Cultural Resources

Exhibit 21 **Applicant Data Responses Set 6 – Responses to CEC Request 1 & 2**; docketed 5-22-2009

Exhibit 26 **Objections by NCPA to CEC's Data Request Set 3**; docketed 4-15-2009

Exhibit 32 **NCPA's Data Response Set 1B to Staff Data Request 13 & 37**; docketed 2-19-2009, Data Response 13

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 10-16

V. Opinion and Conclusions

We have reviewed the Cultural Resources sections of the Staff Assessment and generally disagree with the Staff's conclusion that Geoarcheological Studies are needed to properly characterize the LEC site to support findings and conclusions under the California Environmental Quality Act (CEQA). Despite this disagreement, NCPA has elected to perform the Geoarcheaological Study referenced in the conditions for the sole reason to avoid the delay that would likely result if the issue was contested. While NCPA objected to this data request, Staff elected not to file a Motion to Compel, so NCPA believed that no study was necessary. Upon review of the Staff Assessment and discovering the inclusion of Condition of Certification CUL-1 which required the study, NCPA objected in its Comments on the Staff Assessment. After the Staff Assessment Workshop, NCPA agreed to perform the study and therefore no longer formally objects to the inclusion of Condition of Certification CUL-1.

We agree that with the implementation of the Conditions of Certification contained in the Staff Assessment, the LEC will not result in significant Cultural Resource impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

HAZARDOUS MATERIALS

TESTIMONY OF STEVE BLUE

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:	**DOCKET NO. 08-AFC-10**
Application For Certification for the LODI ENERGY CENTER	**DECLARATION OF STEVE BLUE**

I, Steve Blue, declare as follows:

1. I am presently employed by Worley Parsons, as a Senior Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Hazardous Materials for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Folsom, CA on December 21, 2009.

- Original signed

_____

Steve Blue

I. Name: Steve Blue

II. Purpose:

My testimony addresses the subject of Hazardous Materials associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at Worley Parsons Group, Inc, and have been for the past three and a half years and am presently a Senior project manager with that organization. I have a B.S. Degree in Electrical Engineering and I have over 30 years of experience in the power plant industry; including the assessment of hazardous materials. I prepared or assisted in the preparation of the Hazardous Materials section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009

Exhibit 34 **NCPA's Data Response Set 2, Responses to CEC Staff Data Requests 56B-74**; docketed 2-16-2009, Data Response 64-70, WSQ-1)

V. Opinion and Conclusions

I have reviewed the Hazardous Materials sections of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the Conditions of Certification, the LEC project will not result in significant Hazardous Materials impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

The minor changes to the Staff Assessment in Hazardous Materials are as follows:

Page 4.4-18, Proposed Condition of Certification HAZ-4

NCPA requests the flexibility of using two routes for the delivery of hazardous materials to the site. Both routes were identified in the AFC and there does not appear to be any environmental reason to exclude the route.

HAZ-4 The project owner shall direct all vendors delivering any hazardous material to the site to use only ~~the~~ **one of two** route**s** approved by the CPM (I-5 to North Thornton Road to Frontage Road to North Cord Road to the project site **(if coming from north) or at West Eight Mile Road (if coming from south), and then travel on North Thornton Road to Frontage Road to North Cord Road to the project site).** The project owner shall obtain approval of the CPM if an alternate route is desired.

Page 4.4-18, Proposed Condition of Certification HAZ-5 Verification

NCPA requests the verification of this condition be modified to clarify that if no comments are received by the CPM within a reasonable time, then the final documents can be prepared.

Verification: At least thirty (30) days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval. **The CPM shall review and approve the Construction Security Plan within thirty (30) days of submission.**

Page 4.4-20, Proposed Condition of Certification, HAZ-6 Verification)

NCPA requests modification to this condition to clarify that if no comments are received by the CPM within a reasonable time, then the final documents can be prepared.

Verification: At least thirty (30) days prior to LEC commissioning, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. **The CPM shall review and approve the Operation Security Plan within thirty (30) days of submission.** In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

Pages 4.4-29 through 33, Appendix B Hazardous Materials List

NCPA requests the following modifications to the Hazardous Materials List to reflect the most recent data.

On page 30 (bottom third): in the row of Coagulant NALCO 8108, please delete ~~800 gallons~~ and replace with **6,000 gallons**

On page 30 (bottom third): in the row of Dispersent NALCO 3DT-191, please delete ~~1,000 gallons~~ and replace with **2,000 gallons**

On page 30 (add new row, 6 columns, respectively as follows): [**Dispersant NALCO 3DT-155]; [None]; [Cooling water mineral dispersant]; [Health, may cause irritation with prolonged contact – Physical: slightly flammable]; [800 gallons]; and [NA]**

On page 31 (mid-page): in the row of Lime, please delete ~~2,000 pounds~~ and replace with **53 tons**

On page 32 (top of page): in the row of Magnesium Oxide, please delete ~~2,000 pounds~~ and replace with **75 tons**

On page 32 (top third): in the row of Mineral Insulating Oil, please delete ~~3,500 gallons~~ and replace with **37,600 gallons**

On page 32 (mid-page): in the row of Oxygen, in the application column add **cycle water treatment**; and, in the quantity column please delete ~~540 cubic feet~~ and replace with **2,340 cubic feet**

On page 33 (top third): in the row of Sodium Hydroxide, please delete ~~10 gallons~~ and replace with **40 gallons**

On page 33 (mid-page): in the row of Sodium Hypochlorite, please delete ~~1,500 gallons~~ and replace with **10,000 gallons**

On page 33 (bottom of page): in the row of Sulfuric Acid, please delete ~~3,000 gallons~~ and replace with **6,000 gallons**

On page 33 (add new row, 6 columns, respectively as follows): [**Aqueous Ammonia (19%)]; [1336-21-6]; [boiler feedwater pH control]; [Health: Corrosive liquid, fatal if swallowed, skin and eye burns, toxic and irritating vapor, limited vapor flammability]; [800 gallons]; and [1,000 gallons]**

LAND USE

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2MHill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Land Use for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____
Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Land Use associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field; including land use. I oversaw and directed the preparation of the Land Use section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Land Use

Exhibit 29 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 18-25

Exhibit 39 **San Joaquin County Community Development Letter**; docketed 12-08-2009

V. Opinion and Conclusions

I have reviewed the Land Use sections of the Staff Assessment and agree that with incorporation of the minor modifications set forth below, which only expresses the recently adopted changes to the San Joaquin County ALUP, the LEC will not result in significant land use impacts and will comply with all land use related laws, ordinances, regulations and standards (LORS).

The Land Use section of the Staff Assessment requiring updated information is as follows:

At Page 4.5-3, Gas Pipeline Alignment, Second paragraph

The Kingdon Airport is located north of and adjacent to the proposed pipeline route. The majority of the realigned gas pipeline would be located beneath land designated as **Traffic Pattern Zone (Zone 7)**~~Horizontal Surface~~ of the Kingdon Airport. Additionally, ~~a~~ small portion**s** of the ~~realigned~~ pipeline would be located beneath land designated as **Runway Protection Zone (Zone 1), Inner Approach/Departure Zone (Zone 2), and Inner Turning Zone (Zone 3).**~~Transitional Zone, Runway Protection zone and Inner Approach Zone. Natural gas pipelines are an exempted and approved use in the Transitional Zone, according to Mike Swearingen at the San Joaquin Council of Governments (SJCOG), the Airport Land Use Commission for San Joaquin County (Swearingen, 2009).~~ **In addition, pursuant to Table 3A (Safety Criteria Matrix) in the Airport Land Use Plan for San Joaquin County, finalized in July 2009, natural gas and petroleum pipelines are a prohibited use in Zones 1, 2, and 3 if the gas lines are less than 36 inches. However, the gas line for the LEC will be buried at a depth greater than 36 inches.** ~~the Runway Protection Zone and Inner Approach Zone[1] However, utility use is not allowed in the Runway Protection Zone, and natural gas and petroleum pipelines are prohibited uses within the Inner Approach Zone. Please refer to the **TRAFFIC AND TRANSPORTATION** section of this document for a thorough discussion of the project's airport-related impacts and proposed conditions of certification.~~

[1] http://www.sjcog.org/docs/pdf/Regional%20Planning/ALUC/Chapter%203_ALUCP%20Update.pdf

NOISE AND VIBRATION

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Noise and Vibration for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____

Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Noise and Vibration associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field; including noise and vibration assessment on power plant projects. I prepared or assisted in the preparation of the Noise and Vibration section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Noise and Vibration sections of the Staff Assessment and agree that with incorporation of the Conditions of Certification, the LEC project will not result in significant Noise and Vibration impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

PUBLIC HEALTH

TESTIMONY OF JEFFREY ADKINS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF JEFFREY ADKINS**

I, Jeffrey Adkins, declare as follows:

1. I am presently employed by Sierra Research, as a Senior Partner.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Public Health for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Eden, NC on December 21, 2009.

- Original signed

_____
Jeffrey Adkins

I. Name: Jeffrey Adkins

II. Purpose:

My testimony addresses the subject of Public Health associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at Sierra Research, and have been for the past 16 years and am presently a Senior Partner with that organization. I have a Bachelor of Science Degree in Chemical Engineering and a Juris Doctor Degree. I have over 20 years of experience in the field of air pollution research and control. I prepared the Public Health section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Public Health sections of the Staff Assessment and agree that with incorporation of the Condition of Certification, the LEC project will not result in significant Public Health impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

SOCIOECONOMICS

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Socioeconomic Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____

Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Socioeconomic Resources associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field; including assessment of socioeconomic resources. I oversaw and directed the preparation of the Socioeconomic Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Socioeconomic Resources sections of the Staff Assessment and agree that the LEC project will not result in significant Socioeconomic impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

SOIL AND WATER RESOURCES

TESTIMONY OF MICHAEL DeBORTOLI

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF MICHAEL DeBORTOLI**

I, Michael DeBortoli, declare as follows:

1. I am presently employed by Northern California Power Agency, as a Project Engineer for the Lodi Energy Center project (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Soil and Water Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Michael DeBortoli

I. Name: Michael DeBortoli

II. Purpose:

My testimony addresses the subject of Soil and Water Resources associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past three (3) years and am presently the Project Engineer for the LEC. I am a licensed California Professional Engineer; having a BSEE Degree. I have over 13 years of experience in the field of power plant engineering; including assessment of soil and water resources. I prepared or assisted in the preparation of the Soil and Water Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009

Exhibit 15 **United States Environmental Protection Agency (EPA) Public Notice of Intent to Issue UIC Permit**; dated 1-16-2009, docketed 10-19-2009

Exhibit 28 **USACE Finding of No Water of the United States**; dated 3-19-2009, docketed 4-02-2009

Exhibit 29 **Data Response Set 3, Responses to CEC Staff Workshop Inquiries 3 through 27**; docketed 3-24-2009, WSQ-3-11

Exhibit 32 **NCPA's Data Response Set 1B to Staff Data Request 13 & 37**; docketed 2-19-2009, Data Response 37

Exhibit 33 **San Joaquin County Environmental Health Department (EHD) Comments Regarding Notice of Public Site Visit**; docketed 2-17-2009

Exhibit 34 **NCPA's Data Response Set 2, Responses to CEC Staff Data Requests 56B-74**; docketed 2-16-2009, WSQ-2

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 27-37

Exhibit 40 **USACE Finding of No Discharge to Waters of the US**; dated 10-28-2009, docketed 11-03-2008

Exhibit 43 **Permit Application for Class 1 Underground Injection Well**; docketed 10-10-2008

V. Opinion and Conclusions

I have reviewed the Soil and Water Resources sections of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the Conditions of Certification, the LEC project will not result in significant Soil and Water Resource impacts and will comply with all Soil and Water related laws, ordinances, regulations and standards (LORS).

The changes needed on the Soil and Water Resources sections of the Staff Assessment are as follows:

Page 4.9-21, Proposed Condition of Certification SOIL&WATER 2, Verification

NCPA requests modification to this condition to clarify that if no comments are received by the CPM within a reasonable time, then the final documents can be prepared.

> **Verification:** No later than 60 days prior to site mobilization, the project owner shall submit a copy of the DESCP to the CPM for review and approval**. If no comments are received from the CPM within 30 days of submittal, the project owner may proceed with preparation of final documents. The CPM shall review and approve the final DESCP within thirty (30) days of submission.** The DESCP shall include elements A through I for soil disturbing activities associated with site elevation, grading, foundation excavation, and site stabilization.

Page 4.9-21, Proposed Condition of Certification SOIL&WATER 3

If the LEC encounters groundwater during construction and engages in dewatering , the water will be discharged directly to the wastewater treatment

plant. Therefore the LEC will not be required to comply with the requirements of CVRWQCB Order NO. R5-2008-0081 for Waste Discharge Requirements for Dewatering and Other Low threat Discharges to Surface Waters and this condition should be deleted as unnecessary.

Page 4.9-23, Proposed Condition of Certification SOIL&WATER 9

NCPA requests that this condition be deleted since a Class I Nonhazardous UIC Permit for the LEC injection well has already been obtained and submitted as Exhibit 15.

TRAFFIC AND TRANSPORTATION

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Traffic and Transportation for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____

Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Traffic and Transportation associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field. I oversaw and directed the preparation of the Traffic and Transportation section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Traffic and Transportation

V. Opinion and Conclusions

I have reviewed the Traffic and Transportation section of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the analysis and Conditions of Certification, the LEC will not result in significant Traffic and Transportation impacts and will comply with all Traffic related laws, ordinances, regulations and standards (LORS).

The minor changes to text within the Traffic and Transportation section of the Staff Assessment are:

Page 4.10-10, First Sentence

NCPA requests that the following change be made to clarify the type of permit that would be required for delivery of heavy equipment.

> Heavy Haul Route 2 would use N. Thornton Road for delivery of heavy equipment and require **a Transportation Permit for Oversized Loads** ~~an encroachment permit~~ from San Joaquin County~~, and from Caltrans~~.

Page 4.10-12 Linear Facilities, First Paragraph

NCPA requests that the following corrections and clarification be made to this paragraph.

> Natural gas would be provided using a new 12-inch diameter gas line that will connect to Pacific Gas and Electric Company's existing gas transmission line #108 (LEC 2009-Supplement C, p.1). The revised natural gas pipeline would parallel the existing 3-mile pipeline that currently serves the applicant's existing 49-megawatt Combustion Turbine Power Plant No.2, which is adjacent to the proposed LEC project site. ~~The portion of the supply line route proposed to be upgraded is the section between N. Thornton Road and N. Devries Road, and will increase the length of the linear by 1,274 feet.~~ To reduce project impacts….

Page 4.10-13, Transport of Hazardous Materials and Waste, bottom of page

> Project operation would require use of hazardous substances including sulfuric acid and cleaning and water treatment chemicals. It is estimated that there would be a maximum of six delivery/service trucks per week. Operation would also require a maximum of ~~four~~ **two** deliveries per month of ~~aqueous~~ **anhydrous** ammonia. A licensed hazardous waste transporter would haul any hazardous waste from the project site to one of three Class 1….

Page 4.10-18, Proposed Condition of Certification TRANS-1

The Proposed Condition should reflect the inclusion of the Highway Patrol to match the verification. And, in the Verification, NCPA requests modification to clarify CPM review to occur within a reasonable time frame.

> **TRANS-1** The project owner shall submit the proposed traffic control and implementation plan to the affected local jurisdiction, San Joaquin County**, the California Highway Patrol** and Caltrans for review and

comment**. If no comments are received from the County, the California Highway Patrol, or Caltrans within 30 days of submittal, the project owner may proceed with preparation of final documents.** The project owner shall provide to the CPM a copy of the transmittal letter submitted to the affected local jurisdiction, **the California Highway Patrol,** and Caltrans requesting their review of the traffic control and implementation plan. The project owner shall provide any comment letters to the CPM for review and approval.

Verification: At least 60 days prior to start of site mobilization, the project owner shall provide to the city of Lodi and county of Joaquin, Caltrans, and the California Highway Patrol for review and comment and to the CPM for review and approval, a copy of the construction traffic control plan. The plan must document consultation with these agencies**. The CPM shall review and approve the final traffic control plan within thirty (30) days of submission.**

Page 4.10-18, Proposed Condition of Certification TRANS-2 Verification

NCPA requests the following typographical change and provides a modification to clarify that if no comments are received by the CPM within a reasonable time, then the final documents can be prepared.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a mitigation plan focused on restoring Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road to its pre-project condition to the ~~city of Anaheim Public Works and~~ **San Joaquin County** Planning Department for review and comment and to the CPM for review and approval**. If no comments are received from the County Planning Department and the CPM within 30 days of submittal, the project owner may proceed with preparation of final documents.**

TRANSMISSION LINE SAFETY AND NUISANCE

TESTIMONY OF MICHAEL DeBORTOLI

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF MICHAEL DEBORTOLI**

I, Michael DeBortoli, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as a Project Engineer for the Lodi Energy Center project (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Transmission Line Safety and Nuisance for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Michael DeBortoli

I. Name: Michael DeBortoli

II. Purpose:

My testimony addresses the subject of Transmission Line Safety and Nuisance associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past three (3) years and am presently the Project Engineer for the LEC. I am a licensed California Professional Engineer; having a BSEE Degree. I have over 13 years of experience in the field of power plant engineering, research, management and control; including transmission assessment. I assisted in the preparation of the Transmission Line Safety and Nuisance section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Transmission Line Safety and Nuisance section of the Staff Assessment and agree that with incorporation of the Conditions of Certification, the project will not result in significant Transmission Line Safety and Nuisance impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

VISUAL RESOURCES

TESTIMONY OF JOSHUA HOHN

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:	**DOCKET NO. 08-AFC-10**
Application For Certification for the LODI ENERGY CENTER	**DECLARATION OF JOSHUA HOHN**

I, Joshua Hohn, declare as follows:

1. I am presently employed by CH2M Hill, as an Associate Planner.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Visual Resources for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at 155 Grand Ave., Suite 1000, Oakland, CA on December 21, 2009.

- Original signed

_____
Joshua Hohn

I. Name: Joshua Hohn

II. Purpose:

My testimony addresses the subject of Visual Resources associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for approximately the past 2 years and am presently an Associate Planner with that organization. I have an M.C.P. in City and Regional Planning and I have approximately 8 years experience in the field; including visual resources. I prepared the Visual Resources section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 2 **Table DR71-1 (Cooling Tower Parameters)**; docketed 12-21-2009

Exhibit 4 **Letter from the City of Lodi Regarding Removal of Condition VIS-2**; docketed 12-17-2009

Exhibit 5 **Fogging Frequency Curve**; docketed 12-16-2009

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009

Exhibit 29 **Data Response Set 3, Responses to CEC Staff Workshop Inquiries 3 through 27**; docketed 3-24-2009, WSQ 12-18

Exhibit 34 **NCPA's Data Response Set 2, Responses to CEC Staff Data Requests 56B-74**; docketed 2-16-2009, WSQ-2

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 48-49

V. Opinion and Conclusions

I have reviewed the Visual Resources sections of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the Conditions of Certification, the LEC will not result in significant Visual Resources impacts and will comply with all visual resource related laws, ordinances, regulations and standards (LORS).

Those minor changes to the Visual Resources section of the Staff Assessment, are:

Page 4.12-11, Last Paragraph on Page

NCPA requests the following additions to better clarify the associated roadways.

> "The White Slough Wildlife Area, part of the Sacramento-San Joaquin Delta Estuary, is located west of and parallel to I-5. Ponds 9 through 13 are south of Highway 12 and accessed via Thornton Road **to a frontage road**. **Thornton Road is also** the ~~same~~ road used to access the LEC. See **Visual Resources Figure 2** for a map of the Sacramento-San Joaquin Delta Estuary."

Page 4.12-16, Linears, First Paragraph

NCPA requests the following modifications to clarify the location of the transmission structures.

> **Three transmission poles and the turning pole and lines will be installed on the east side of the property. Two transmission poles and lines will be installed on the north side of the property**. ~~Five new 75-foot transmission poles will be placed on the LEC's eastern boundary~~. The poles are shorter than the existing transmission line corridors already existing on the site. These lines will tie into the existing 230kV located west of the project site, adjacent to the STIG plant.

Page 4.12-18, Current Development Projects, First Paragraph

NCPA requests the following change to reflect that the improvements by the City of Lodi Public Works are unrelated to the LEC project.

According to the AFC, 21 residential, office, mixed use, institutional, commercial, and industrial projects were in various stages of progress in the city of Lodi in July 2008. All projects are located more than four miles from the proposed LEC, except for the improvements at the White Slough WPCF (Draft EIR issued March 28, 2008), which is adjacent to the project site (LEC AFC, 2009b). Staff notes that according to the City of Lodi Public Works Department, the improvements to the White Slough Water Pollution Control facility **are** scheduled to begin and end in 2010. ~~and last between 18 to 24 months, are being done to accommodate the increased water flow needed by the LEC.~~

Page 4.12-22, Proposed Condition of Certification VIS-2

The City of Lodi does not require landscaping at the LEC site to comply with its code. The County LORS do not apply to the LEC which is located within the City of Lodi and therefore, landscaping which may be required for a project within the County is inapplicable to the LEC. Additionally, landscaping is not required to mitigate any potential significant visual resources related impact. Finally, there is insufficient space on the LEC site to accommodate the landscaping proposed by Staff. Therefore **VIS-2** should be deleted as unnecessary.

Page 4.12-23, Proposed Condition VIS-3, Verification

The verification to this condition requires NCPA to ensure that the cooling tower is designed and operated to meet a plume fogging frequency curve that was superseded by a more accurate curve. The curve submitted as Figure 3.13-1 in Supplement D was replaced with a curved submitted to the CEC on August 13, 2009. To ensure the record was accurate, the curve was docketed on December 16, 2009 to support Staff's analysis. NCPA request the Verification to this condition refer to this curve and not the curve submitted in Supplement D..

WASTE MANAGEMENT

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Waste Management for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

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Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Waste Management associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field; including the application to waste management. I oversaw and directed the preparation of the Waste Management section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 7 **Preliminary Endangerment Assessment**; dated 11-02-2009, docketed 12-15-2009

Exhibit 8 **Preliminary Endangerment Workplan**; dated 11-02-2009, docketed 12-15-2009

Exhibit 9 **Letter from Department of Toxic Substances Control (DTSC) Determination of No Further Action for the LEC Site**; dated 12-10-2009, docketed 12-15-2009

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Waste Management

Exhibit 16 **Department of Toxic Substances Control's Approval of Final Workplan for the Preliminary Endangerment Assessment**; docketed 9-03-2009

Exhibit 24 **Meeting Agenda – NCPA Voluntary Cleanup Agreement**; docketed 4-16-2009

Exhibit 31 **Data Responses Set 1C, Data Request 52 and 56**; docketed 3-02-2009

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 50-56

Exhibit 44 **Email re San Joaquin County Environmental Health Department**; docketed 9-30-2008

V. Opinion and Conclusions

I have reviewed the Waste Management sections of the Staff Assessment and agree that with incorporation of the Conditions of Certification, the LEC project will not result in significant Waste Management impacts and will comply with all related laws, ordinances, regulations and standards (LORS). I recommend that the Presiding Member's Proposed Decision reflect that NCPA has received Exhibit 9, which is evidence that the LEC site does not need to undergo remediation.

WORKER SAFETY AND FIRE PROTECTION

TESTIMONY OF SARAH MADAMS

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF SARAH MADAMS**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M Hill, as a Project Manager.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Worker Safety and Fire Protection for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on December 21, 2009.

- Original signed

_____

Sarah Madams

I. Name: Sarah Madams

II. Purpose:

My testimony addresses the subject of Worker Safety associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past ten years and am presently a Project Manager with that organization. I have a B.S. Degree in Environmental Toxicology and I have over 12 years of experience in the field; including the assessment of Worker Safety and Fire Protection. I oversaw and directed the preparation of the Worker Safety section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 23 **Data Response Set 5, Revised Responses to CEC Staff Data Requests 75 & 78**, docketed 4-17-2009

Exhibit 27 **Applicant Data Responses Set 4**; docketed 4-14-2009

V. Opinion and Conclusions

I have reviewed the Worker Safety and Fire Protection sections of the Staff Assessment and agree that with incorporation of the Conditions of Certification, the LEC will not result in significant Worker Safety and Fire Protection impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

FACILITY DESIGN

TESTIMONY OF MICHAEL DeBORTOLI

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF MICHAEL DEBORTOLI**

I, Michael DeBortoli, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as the Project Engineer for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Facility Design for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Michael DeBortoli

I. Name: Michael DeBortoli

II. Purpose:

My testimony addresses the subject of Facility Design associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past three (3) years and am presently the Project Engineer for the LEC. I am a licensed California Professional Engineer; having a BSEE Degree. I have over 13 years of experience in the field of power plant engineering, research, management and control. I prepared or assisted in the preparation of the Facility Design section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Facility Design

V. Opinion and Conclusions

I have reviewed the Facility Design sections of the Staff Assessment and agree that with incorporation of the minor modification set forth below to the Condition of Certification **GEN-2**, the LEC project will not result in significant impacts and will comply with all design related laws, ordinances, regulations and standards (LORS).

The only change to the Facility Design section of the Staff Assessment is within Table 2 of the GEN-2 verification, as follows:

Pages 5.1-7 and 8, Proposed Condition GEN -2 Verification, Table 2

NCPA requests that the Table be updated to reflect the following changes.

At Unit Auxiliary Transformer Skid Foundation and Connections: Delete ~~1~~ and replace with **2**

At HRSG High Pressure Tubing : Replace ~~1~~ with **1 lot**

At CEMS Building Structure, Foundation and Connections; Replace ~~1~~ with **2**

At LCI Isolation Transformer Foundation and Connections: **Delete** entire entry

At Generator Circuit Breaker Foundation and Connections: Replace ~~1~~ with **2**

At HRSG PDC Structure, Foundation and Connections: **Delete** entire entry

At HVAC ~~and Refrigeration~~ Systems: modify to reflect only HVAC, no refrigeration system

GEOLOGY AND PALEONTOLOGY

TESTIMONY OF W. GEOFFREY SPAULDING, Ph.D.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF GEOFFREY SPAULDING, Ph.D.**

I, Geoffrey Spaulding, declare as follows:

1. I am presently employed by CH2M Hill, as a Senior Scientist.

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Geology and Paleontology for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Henderson, NV on December 21, 2009.

- Original signed

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Geoffrey Spaulding

I. Name: Geoffrey Spaulding

II. Purpose:

My testimony addresses the subject of Geology and Paleontology associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at CH2M Hill, and have been for the past eight years and am presently a Senior Scientist in the fields of geoarcheology, paleontology and arid-lands biogeology with that organization. I have a Ph.D. in Quaternary Studies and paleobiology and I have over 30 years of experience in those fields. I prepared the Geology and Paleontology section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Paleontology

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Response 17

V. Opinion and Conclusions

I have reviewed the Geology and Paleontology sections of the Staff Assessment and agree that with incorporation of the minor modifications set forth below to the Conditions of Certification, the LEC project will not result in significant geology and paleontology impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

NCPA requests the minor modifications to the language in this series of proposed conditions in the Geology and Paleontology section of the Staff Assessment as it relates generally to qualifications and time lines for reporting.

Pages 5.2-16, Proposed Conditions PAL 1

PAL-1 The project owner shall provide….

(under the last bullet-point of the Condition)

- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology ~~and two years of monitoring experience in California~~.

Verification:

(1) At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

~~(2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.~~

(3) Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

POWER PLANT EFFICIENCY

TESTIMONY OF EDWARD WARNER

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF EDWARD WARNER**

I, Edward Warner, declare as follows:

1. I am presently employed by the Northern California Power Agency, as the Project Manager for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Power Plant Efficiency for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

/original signed/

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Edward Warner

I. Name: Edward Warner

II. Purpose:

My testimony addresses the subject of Power Plant Efficiency associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past 4½ years and am presently the Project manager for the LEC with that organization and I have over 27 years of experience in the field of power plant operations, management, development, research and control. I assisted in the preparation of the Power Plant Efficiency section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Power Plant Efficiency sections of the Staff Assessment and agree with the CEC Staff's conclusions regarding the efficiency of the LEC.

POWER PLANT RELIABILITY

TESTIMONY OF EDWARD WARNER

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:	**DOCKET NO. 08-AFC-10**
Application For Certification for the LODI ENERGY CENTER	**DECLARATION OF EDWARD WARNER**

I, Edward Warner, declare as follows:

1. I am presently employed by the Northern California Power Agency, as the Project Manager for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Power Plant Reliability for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

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Edward Warner

I. Name: Edward Warner

II. Purpose:

My testimony addresses the subject of Power Plant Reliability associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past 4½ years and am presently the Project manager for the LEC with that organization and I have over 27 years of experience in the field of power plant operations, management, development, research and control. I assisted in the preparation of the Power Plant Reliability section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Response 26

V. Opinion and Conclusions

I have reviewed the Power Plant Reliability section of the Staff Assessment and agree with the CEC Staff's conclusions relating to the reliability of the LEC.

TRANSMISSION SYSTEM ENGINEERING

TESTIMONY OF MICHAEL DeBORTOLI

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF MICHAEL DEBORTOLI**

I, Michael DeBortoli, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as the Project Engineer for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Transmission System Engineering for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Michael DeBortoli

I. Name: Michael DeBortoli

II. Purpose:

My testimony addresses the subject of Transmission System Engineering associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past three (3) years and am presently the Project Engineer for the LEC. I am a licensed California Professional Engineer; having a BSEE Degree. I have over 13 years of experience in the field of power plant engineering, research, management and control. I prepared or assisted in the preparation of the Transmission System Engineering section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 10 **NCPA's Comments on the Staff Assessment**; docketed 12-10-2009, Transmission System Engineering

Exhibit 35 **Data Response Set 1A (1 through 56)**; docketed 2-05-2009, Data Responses 38-47

V. Opinion and Conclusions

I have reviewed the Transmission System Engineering sections of the Staff Assessment and agree that with incorporation of the minor modification set forth below to the Conditions of Certification, the LEC project will not result in significant Transmission System Engineering impacts and will comply with all related laws, ordinances, regulations and standards (LORS).

At Page 5.5-12, Proposed Condition of Certification TSE – 5

NCPA requests that paragraph “J” be deleted because the system impact study did not identify any impact to the WAPA system and the LEC will not interconnect with WAPA.

ALTERNATIVES

TESTIMONY OF EDWARD WARNER

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of: Application For Certification for the LODI ENERGY CENTER	**DOCKET NO. 08-AFC-10** **DECLARATION OF EDWARD WARNER**

I, Edward Warner, declare as follows:

1. I am presently employed by Northern California Power Agency (NCPA), as the Project Manager for the Lodi Energy Center (LEC).

2. A copy of my professional qualifications and experience is included (Appendix A) with the attached testimony and is incorporated by reference in this Declaration.

3. I prepared the attached testimony relating to Alternatives for the Lodi Energy Center (California Energy Commission Docket Number 08-AFC-10).

4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.

5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Roseville, CA on December 21, 2009.

- Original signed

_____

Edward Warner

I. Name: Edward Warner

II. Purpose:

My testimony addresses the subject of Alternatives associated with the construction and operation of the Lodi Energy Center (08-AFC-10).

III. Qualifications:

I am presently employed at NCPA, and have been for the past 4½ years and am presently the Project manager for the LEC with that organization and I have over 27 years of experience in the field of power plant operations, management, development, research and control; including assessment of alternatives. I assisted in the preparation of the Alternatives section of the AFC as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

IV. Opinion and Conclusions

I have reviewed the Alternatives section of the Staff Assessment and agree that alternative sites, technologies or configurations would not reduce any significant environmental impacts from the proposed LEC project.

APPENDIX A

Ed Warner
245 Eldorado CT
Angels Camp, CA 95222
209-768-5887

A challenging management position with a progressive, dynamic organization. Position should allow for continued personal and professional growth commensurate with past achievements.

Northern California Power Agency

2008 to Present **Project Manager Lodi Energy Center**

Responsible for the development and AFC process with the California Energy Commission of a 280 MW Combined Cycle Power Plant located in Lodi California.

Northern California Power Agency

May 2005 – to 2007 **Facilities Manager, Hydro**

Responsible for the overall site operation and maintenance of multiple hydro electric power plants. This includes all safety, health and environmental compliance. Representing the company at local political and community events. Interface directly with regulatory and government agencies. Responsible for all training and hiring of plant staff. Responsible for maintaining moral and employee relations. Two sites totaling 260 MW and a total staff of 18.

Calpine Corporation

July 2001 – May 2005 **General Manager, Calpine Sutter Projects**

Responsible for the overall site operation, maintenance and asset management of multiple combined cycle power plants. This includes all safety, health and environmental compliance. Representing the company at local political and community events. Interface directly with regulatory and government agencies. Responsible for all training and hiring of plant staff. Responsible for maintaining moral and employee relations. Five sites totaling 700 MW and a total staff of 60.

April 1999 – October 2001 **General Manager, Calpine Delta Projects**

Responsible for the overall site operation, maintenance and asset management of multiple combined cycle power plants. This includes all safety, health and environmental compliance. Representing the company at local political and community events. Interface directly with regulatory and government agencies. Responsible for all training and hiring of plant staff. Responsible for maintaining moral and employee relations. Five sites totaling 1458 MW and a total staff of 70.

1990 – 1999 **Plant Engineer / Maintenance Supervisor**

Calpine Geothermal Power Plants

Directly responsible for maintenance management and engineering of up to 8 power plants and a maintenance department of approx. 40 employees. 417 MW General Electric, Toshiba and MHI Steam Turbines

West Ford Flat Bear Canyon Power Plant
1989 – 1990 **Senior Operator**

Geothermal / MHI Steam Turbines 47 MW

Southern California Edison

1982 – 1988 **Control Room Operator**

Cool Water Coal Gasification
125 MW Intergraded Coal Gasification Combined Cycle Power Plant.

US Air Force

1978-1982
Jet Engine Air Craft Mechanic
Tactical Air Command
George Air Force Base

Victorville, CA

sierra research

1801 J Street
Sacramento, CA 95811
Tel: (916) 444-6666
Fax: (916) 444-8373

Ann Arbor, MI
Tel: (734) 761-6666
Fax: (734) 761-6755

Résumé

Jeffrey D. Adkins

Education

1992, J.D., University of California Hastings College of the Law, San Francisco
1983, B.S., Chemical Engineering, Pennsylvania State University, State College

Professional Experience

Aug. 1993 - Present Senior Engineer/Partner/Managing Partner/Senior Partner
Sierra Research

Responsibilities include providing final technical review for stationary source projects, preparing proposals, and supervising workload for stationary source staff. Also provides compliance assistance and project support for multiple industrial sources, including the following:

- Providing strategy development, negotiation support, and technical services for facilities subject to EPA and local air district enforcement actions;
- Preparing variance petitions and representing clients at variance hearings in multiple California air districts;
- Preparing air quality sections of California Energy Commission Applications for Certification and Small Power Plant Exemptions;
- Preparing Title IV Acid Rain permit applications and monitoring plans for power plants and providing ongoing technical support for Electronic Data Reporting;
- Preparing Title V operating permit applications and permit renewal applications;
- Preparing federal PSD applicability determinations;
- Providing emission reduction credit transaction services including applications, due diligence review, inter-district transfers, and inter-pollutant trades;
- Preparing local, state, and federal permit applications for portable and stationary equipment including evaluations of BACT, offsets, and air quality impacts, and compliance with local, state, and federal regulations; and
- Providing detailed compliance assistance for federal NSPS and NESHAPS, local air district, and state ATCM regulations.

1990 - July 1993 Supervising Air Quality Engineer
Bay Area Air Quality Management District

Supervised engineering staff of five. Implemented complex local, state, and federal air quality regulations. Formulated strategy, recommended District position, negotiated terms and conditions of abatement orders and variances with staff and industry. Acted as expert witness in District Hearing Board administrative proceedings. Handled all aspects of California Energy Commission power plant siting proceedings, including reviewing and writing Determination of Compliance, acting as District spokesperson at public workshops, and testifying at Energy Commission evidentiary hearings.

Reviewed and implemented California Clean Air Act and 1990 federal Clean Air Act Amendments, including Title V ("Permits"), Title III ("Toxics"), Prevention of Significant Deterioration, New Source Review, and NSPS. Reviewed California Environmental Quality Act (CEQA) Environmental Impact Reports for consistency with District air permits and regulations. Determined CEQA applicability for all air permits issued.

1987 - 1990 Air Quality Engineer II
Bay Area Air Quality Management District

Performed detailed engineering evaluations and recommended approval or denial of air permit applications for various industrial sources. Determined compliance with local, state, and federal air pollution regulations. Performed multi-pathway health risk assessments and risk screenings. Drafted detailed permit conditions limiting source operation and emissions. Determined best available control technology. Reviewed air quality modeling analyses.

1983 - 1987 Designs Engineer
Chevron U.S.A. Inc., Richmond Refinery

Performed engineering design, cost estimated, obtained capital funding, and coordinated work on major refinery construction projects. Provided engineering services for major process plant turnarounds and day-to-day plant operations at crude oil distillation, Diesel and jet fuel sulfur removal, and gasoline reforming plants.

Credentials and Memberships

Member, State Bar of California, Environmental Section
Registered Professional Engineer, State of California (Chemical Engineering)
Lead Verifier under the California Air Resources Board Mandatory Greenhouse Gas Emissions Reporting Program—General; Refinery and Power Entities sectors

Clint Helton, RPA
Cultural Resources Task Lead

Education

M.A., Anthropology
B.A., Language and Literature

Professional Registration

Registered Professional Archaeologist (1999, No. 11280)

Distinguishing Qualifications

- Strong background in environmental impact evaluations, with particular expertise in conducting cultural resources studies in California, Colorado, Idaho, Nevada, Utah, and Wyoming
- Has 13 years of environmental management experience in the western U.S.
- Meets Secretary of Interior Professional Qualification Standards (36 CFR 61)
- Highly experienced managing cultural resources studies for large linear transportation and utility projects to meet requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), California Environmental Quality Act (CEQA), and standards of the California Energy Commission (CEC), and Federal Energy Regulatory Commission (FERC)

Relevant Experience

Mr. Helton is an environmental consultant with more than 13 years of environmental management experience in the western United States. He has a strong background in environmental impact evaluations, having directed technical studies; negotiated with lead agencies, responsible agencies, and clients; and written, edited, and produced a substantial number of environmental review and technical documents. Mr. Helton has extensive experience of regulatory compliance, cultural and paleontological resources, NEPA and NHPA compliance activities, and federal regulations governing treatment of cultural resources, especially Section 106 of NHPA (36CFR800) and the Native American Graves Protection and Repatriation Act (NAGPRA) (43CFR10). Additionally, Mr. Helton is experienced with the challenges of preparing environmental documentation for large linear utility projects, including large interstate pipelines and is familiar with the process and guidelines of CEC and FERC among others. Mr. Helton has authored numerous environmental technical reports, cultural resources management plans, cultural resources studies, Programmatic Agreements, and Memorandums of Understanding (MOU) and contributed to many NEPA and CEQA documents for a variety of private and public sector clients.

Clint Helton, Cultural Resources Task Lead

Representative Projects

Task Manager, Lodi Energy Center Project, Lodi, California. Task Lead and overall management of cultural resources studies for the construction of a combined-cycle facility consisting of one natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Carlsbad Energy Center Project, Carlsbad, California. Task Lead and overall management of cultural resources studies for the construction of a combined-cycle facility consisting of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Task Lead and overall management of cultural resources studies for this conversion of an existing peaking plant to a combined-cycle baseload facility in San Joaquin County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, BrightSource Energy, Ivanpah Solar Electric Generating System Project, San Bernardino County, California. Assisted with preparation of Application For Certification for California Energy Commission in support of a large proposed solar power generation facility covering over 4,000 acres of land managed by Bureau of Land Management in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including archival research, field surveys, report preparation, and conducting Native American consultation.

Task Manager, Terra-Gen LLC Alta Wind Project, Kern County, California. Task Lead, quality control manager, and overall management of cultural resources studies for this 5,000-acre-plus alternative energy development project near the City of Tehachapi, Kern County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination with Kern County. Supervised inventory for cultural resources, technical report preparation, and conducted Native American Consultation.

Task Manager, Iberdrola Renewables, Multiple Solar Energy Development Projects, Arizona, California, New Mexico, Nevada. Led preparation of cultural resources assessments for solar power generation facilities in Arizona, New Mexico, Nevada, and California. Mr. Helton is acting as principal investigator for several critical issues analyses as well as full permit preparation of solar energy development projects in Arizona, California, Nevada, and New Mexico. Project acreages range from 5,800 acres to 35,000 acres.

Task Manager, PPM Energy, Solar Energy Development, Arizona, Nevada, California. Cultural resources assessments for solar power generation facilities in Arizona, Nevada, and California. Mr. Helton is acting as principal investigator for literature searches and field

visits for several proposed solar energy projects in Arizona, California, and Nevada. Project acreages range from 2,000 acres to 25,000 acres.

Task Manager, Edison Mission Energy, Walnut Creek Energy Park Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in Los Angeles County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Edison Mission Energy, Sun Valley Energy Center Power Plant, California. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed 500-MW power generation facility in San Bernardino County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Task Lead and overall management of cultural resources studies for this 100-MW power plant upgrade project in San Diego County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Russell T. Huddleston
Staff Biologist

Education

M.S., Ecology, University of California, Davis, 2001

B.S., Biology, Southern Oregon University, 1998

Professional Registration

Professional Wetland Scientist (PWS #1634)
Endangered Species Act Section 10 Scientific Take Permit for Threatened and Endangered Vernal Pool Crustaceans and Selected Rare Plant Species (Permit TE-054120-2)
California Department of Fish and Game Scientific Collectors Permit for Threatened and Endangered Vernal Pool Crustaceans (Permit No. 005934)
California Department of Fish and Game Scientific Collectors Permit for State-listed Threatened and Endangered Plants (Permit No. 08030.1)

Distinguishing Qualifications

- Specialized experience in wetland delineation and assessment
- Specialized experience in rare plant surveys and habitat characterization
- Specialized experience surveys for listed vernal pool invertebrates

Relevant Experience

Mr. Huddleston is a wetland ecologist/botanist in the Environmental Business Group in CH2M HILL's Bay Area office. He has more than 10 years of professional experience in wetland science, plant community classification, habitat assessment, and special-status species surveys. In addition, he has training and experience with global positioning system (GPS) technology used for habitat mapping, wetland delineation, and special-status species surveys.

Mr. Huddleston is a Certified Professional Wetland Scientist and has worked in a variety of wetland types throughout the western United States including Coastal and tundra wetlands in Alaska; vernal pools and seasonal wetlands in California and southern Oregon; mountain streams and seeps in Utah; and desert playas and washes in Arizona, Nevada and Southern California. Mr. Huddleston has also received specialized training in wetland delineation methodology, hydric soils and wetland plants. Mr. Huddleston is a member of the Society of Wetland Scientists and has been a volunteer docent at the Jepson Prairie vernal pool preserve for over 9 years.

Mr. Huddleston has conducted numerous botanical inventories, habitat assessment and characterization studies and surveys for rare, threatened and endangered plant species throughout California in a variety of habitats including coastal sage scrub, valley grasslands, montane forests and the Mojave deserts. He hold scientific collection permits for California State-listed threatened and endangered plants as well as selected federally-listed

plant species. Mr. Huddleston is an active member of the California Native Plant Society and other professional botanical organizations.

Mr. Huddleston has conducted protocol level surveys for federally-listed vernal pool crustaceans for a variety of clients, including Travis Air Force Base, Camp Pendleton Marine Corps Base, the California Department of Transportation and the Riverside County Transportation Commission. In addition, he has been involved in long-term population monitoring projects for vernal pool species in the Greater Jepson Prairie ecosystem in Solano County, California.

Representative Projects

Lodi Energy Center, Lodi California. Project Biologist. Conducted initial biological surveys and wetland assessment for the site. Coordination with California Energy Commission and United States Army Corps of Engineers staff on biological and wetland resources. Provide as needed assistance with biological resources monitoring and mitigation plans.

State Route 79 Realignment Project, Hemet, California. Task lead for wetland delineation surveys for an approximately15-mile highway realignment project. Wetland studies encompassed over 1,800 acres including multiple project alternatives. Wetlands included several problem areas due to seasonal hydrology, strongly alkaline soils and ongoing agricultural practices. Worked in coordination with the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency and hydric soil specialist to develop procedures to adequately characterized and determine wetlands in the project study area.

Update to Natural Resource Management Plan, Travis Air Force Base, Solano County, California. Conducted an assessment and evaluation of base wide natural resources, including vernal pool habitats, rare plants, and special-status species. Various projects for the Base included vernal pool habitat mapping and assessment, protocol-level surveys for federally-listed vernal pool crustaceans, rare plant surveys, and wetland habitat mitigation monitoring.

On-call Environmental Services, California Department of Transportation, District 4. Provide a variety of environmental support services for highway projects including wetland delineations, rare plant/endangered species surveys, mitigation planning, permitting, and agency coordination.

On-call Environmental Services, Sacramento Municipal Utility District, California. Provided a range of environmental services, including wetland delineations, special-status species surveys, habitat assessment and compliance monitoring as part of the on-call environmental services contract.

Forest Highway 114/Hyampom Road Reconstruction, U.S. Federal Highway Administration, Trinity County, California. As part of the environmental review process, consulted with federal resource agency staff, assisting with rare plant surveys and habitat mapping and classification. Habitat types included Douglas-fir forest, oak woodland and riparian ecosystems. The U.S. Federal Highway Administration in cooperation with the U.S. Forest Service and Trinity County proposed to reconstruct approximately 8.5 miles of Forest Highway in Trinity County, California.

Russell T. Huddleston, Staff Biologist

California-Oregon Border Power Plant, People's Energy Resources, Bonanza, Oregon. CH2M HILL was contracted by the California-Oregon Border Power Plant to prepare the Site Certificate Application for submittal to the Oregon Office of Energy. Project related facilities included a nominal 1,150-megawatt generating facility, a 7.2-mile electric transmission line, a 4.1-mile natural gas supply pipeline and a 2.8-mile water supply pipeline. Responsible for coordinating with state and federal resources agencies and conduction habitat mapping, rare plant surveys, and wetland delineations for the proposed project. Natural habitats included sagebrush steppe, juniper woodland, ponderosa pine forest and seasonal wetlands. Vegetation within each habitat was characterized and the habitat was evaluated based on the Oregon Department of Fish and Wildlife's Habitat Classification System.

Sierra Army Depot, U.S. Army Corps of Engineers, Sacramento, California. Conducted an assessment of jurisdictional waters of the U.S. (including wetlands) on an approximately 110-acre site at the Sacramento Army Depot in southern Sacramento County, California. This assessment includes lands to be transferred to the City of Sacramento as part of the Base Realignment and Closure Act.

State Route 153 Roadway Improvement Project, Federal Highway Administration, Beaver, Utah, September 2003. Conducted an assessment of jurisdictional waters of the U.S. (including wetlands for approximately 766 acres along Utah State Highway 153. Wetland delineation was conducted along 11.5 miles of roadway.

In-Delta Storage Project, California Department of Water Resources, Sacramento and Contra Costa Counties. Assisted DWR botanists with rare, threatened and endangered plant surveys in the Sacramento-San-Joaquin Delta. Habitat types included inter-tidal areas, annual grassland, riparian areas and agricultural lands.

Sacramento Municipal Utility District's Cosumnes Power Plant, California. Conducted a wetland delineation for the proposed energy facility site, laydown area, and 26-mile natural gas supply pipeline. Habitat types included annual grassland, seasonal wetlands, vernal pools, and riparian areas.

Proposed Sewer Alignment, Vallejo Flood and Sanitation District, California. Conducted preconstruction plant surveys for special status plant species along a proposed sewer pipeline alignment. Habitat types included inter-tidal marsh, annual grasslands, wet meadows, riparian areas, and wetlands.

Pacific Gas & Electric Line 401 Capacity Loops Project, Pacific Gas & Electric, California. Conducted biological resource surveys including rare, threatened and endangered plant species. Habitat types included mixed conifer forest, sagebrush steppe, seasonal wetlands and riparian areas.

Utah-Nevada Pipeline Project. Task lead for wetland delineation for an approximately 400-mile pipeline from Salt Lake City, Utah to Las Vegas, Nevada for Holly Energy Partners. Delineation included numerous wetlands and other waters including ephemeral washes, lakes, streams and emergent wetlands.

Alaska Department of Transportation Dalton Highway Maintenance Sites. Conducted habitat and wetland assessment of 24 gravel excavation areas for roadway maintenance of the Dalton Highway between Prudhoe Bay and Fairbanks, Alaska

Peñascal Wind Farm, Kennedy County, Texas. Conducted wetland assessment and mapping for PPM Energy proposed wind turbine locations. Surveys included identification of wetland areas and delineation proposed locations for turbine locations and access roads to avoid and minimize impacts to wetland resources.

Professional Organizations/Affiliations

Society of Wetland Scientists (Past president of the Western Chapter)

Ecological Society of America

California Botanical Society

California Native Plant Society

Northern California Botanists

Honors and Awards

Phi Kappa Phi – Honor Society, Southern Oregon University Chapter

Hollenbeck Fellowship in Biology – Southern Oregon University

Jean Davis Memorial Scholarship – Native Plant Society of Oregon

Professional Development

California Wetlands, Sacramento, CA , 2007

Introduction to the Asteraceae, Chico; CA 2006

Introduction to the Salicaceae of California Chico, CA 2006

Administration and Enforcement of Wetlands and Endangered Species Regulations; Sacramento, CA 2005

Tidal Wetlands Workshop; Tiburon, CA 2005

CEQA and NEPA for Botanists; Chico, CA 2004

Fundamentals of Soil Morphology, Corvallis, Oregon 2004

Introduction to Lichen Identification, Davis, California 2004

Applied Hydric Soils, Sacramento, California 2003

Identification of Plants from Vernal Pools and other Seasonal Wetlands, Chico, California 2003

Introduction to Keying Carex, Chico, California 2003

Army Corps of Engineers Wetland Delineation Training, Sacramento, California 2002

Russell T. Huddleston, Staff Biologist

Identification of Fairy Shrimp and Tadpole Shrimp, Sacramento, California 2002

Field Indicators of Hydric Soils, Sacramento, California 2002

Identification of Mosses, Chico, California 2002

Introduction to the Poaceae, Davis California 2001

Publications and Presentations

Huddleston, 2007. *Wetland Delineation – Dealing with Problem Areas in the Arid West.* Platform Presentation at the National Society of Wetland Scientist Meeting. (Sacramento, CA June 10 through 15.)

Huddleston, J.H. and R. T. Huddleston. 2005. *Hydric Soils of Seasonal Pools in Semiarid Parts of Oregon and California.* Platform Presentation at the National Soil Science Society of America. (Meeting, Salt Lake City, Utah, November 6 through 10.)

Young, T. P. and R. T. Huddleston. 2005. *Weed Control and Soil Amendment Effects on Restoration Plantings in an Oregon Grassland.* Western North American Naturalist 65(4) 507-515.

Young, T. P. and R. T. Huddleston. 2004. "Spacing and competition between planted grass plugs and pre-existing perennial grasses." *Restoration Ecology*. 12:546-551

Huddleston, R.T. 2001. *Vernal Pool Plant Community Composition and Diversity on the Agate Desert in Southwestern, Oregon*. Platform Presentation at the 22nd Annual Conference of the Society of Wetland Scientists, Chicago, Illinois. May 27 through June 1.

Young, T. P., J.M. Chase, and R.T. Huddleston. 2001. "A comparison and synthesis of community succession and assembly as conceptual bases for restoration ecology." *Ecological Restoration*. 19:1.

Huddleston, R.T. 1997. *Plant Ecology of the Vernal Pools on the Nature Conservancy's Agate Desert Preserve*. Poster Presentation at the First Conference on Siskiyou Ecology. Siskiyou Regional Education Project, Cave Junction, Oregon.

W. Geoffrey Spaulding, Ph.D.
Paleontological Resources Task Lead

Education

Ph.D., Geology (Paleobiology)
M. S., Geology (Palynology & Vertebrate Paleobiology)
B. A., Anthropology

Certifications

- California State Bureau of Land Management Paleontological Resources Use Permit CA-07-17
- Approved Paleontological Resources Specialist by the California Energy Commission, State of California
- Qualifications as Paleontological Resources Expert Witness accepted by the Attorney General of the State of Washington

Distinguishing Qualifications

- Specialist Paleontological Resources Management
- Expert in Paleoecology of Western North America
- Specialist in Site Formation Processes, Quaternary Paleobiology, Geoarchaeology, Paleohydrology
- Captain, Signal Corps, U. S. Army Reserve (Retired)

Relevant Experience

Dr. Spaulding is a senior scientist and paleontologist with CH2M HILL with extensive experience in paleobiology, paleontology, and paleoecology. He also is accomplished in the study of site formation processes, and the Quaternary geology of the western United States. He has more than three decades of technical experience in the Earth and Life sciences focusing on the deserts of western North America and on California. Prior to joining private industry, he was on the faculty of the University of Washington, Seattle specializing in paleobiology and paleoecology.

Representative Projects

Lodi Energy Center Project. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the construction of a combined-cycle facility consisting of one natural-gas-fired turbine, heat recovery steam generator, steam turbine generator, and associated equipment.

Carlsbad Energy Center Project. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the construction of a combined-cycle facility consisting

of two natural-gas-fired turbines, heat recovery steam generators, steam turbine generators, and associated equipment.

GWF Energy Tracy Combined Cycle Conversion Project, San Joaquin County, California. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the conversion of an existing peaking plant to a combined-cycle baseload facility consisting of two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

GWF Energy Hanford and Henrietta Combined Cycle Conversion Projects. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for the conversion of two existing peaking plants to combined-cycle baseload facilities. The combined cycle facilities included two natural-gas-fired turbines, fired heat recovery steam generators, steam turbine generator, and associated equipment.

Ivanpah Solar Electric Generating System EIS/AFC. Conduct records review and literature search, field reconnaissance and subsequent field survey of paleontologically sensitive areas, and recordation of Paleozoic and Quaternary paleontological sites in support of a large solar powered electrical generation facility. Model pluvial lake fluctuations and alluvial fan surface development to determine distribution of paleontologically and archaeologically sensitive sediments. Prepare appropriate paleontological resources sections for BLM EIS and California Energy Commission Application for Certification. Address site formation process in subsequent data request phase.

Power Plant Licensing and Permitting Program, Calpine Corporation. Paleontological Resources Specialist for several AFCs before the CEC for Calpine's Delta Energy Center in Contra Costa County, and Los Medanos Energy Facility in Santa Clara County as well as AFCs for three peaking power plants licensed under the CEC's emergency AB970 licensing process. Prepared Data Request Responses, attending workshops and providing expert testimony before the licensing hearings. Also prepared preconstruction monitoring plans and provided construction monitoring and compliance services.

AES Highgrove Power Project. Prepared the air quality permits and AFC for 300-megawatt peaking facility consisting of three natural-gas-fired turbines and associated equipment. The project will employ General Electric's LMS100 combustion turbine generators that integrate new technology to increase the combustion turbine's efficiency above existing turbine technologies.

City of Vernon Power Project. Performed the paleontological resources literature review and records search, conducted the field reconnaissance, and prepared the AFC Paleontological Resources section for 914-megawatt baseload facility consisting of three natural-gas-fired turbines and associated equipment.

Paleontological Resources Specialist, Construction-Phase Mitigation Implementation, Multiple Power Generation Projects, California. Develop and manage paleontological resources monitoring and mitigation programs for the construction of power generation projects including the Walnut Energy Center south of Modesto, the Roseville Energy Park east of Sacramento, and the Gateway Generation Station near Antioch. Prepare the

Paleontological Resources Module of the worker education program and visual aids for worker education. Direct the recovery of discovered paleontological resources (Quaternary vertebrate and paleobotanical remains), and consult with client representatives and the California Energy Commission on the adequacy of mitigation efforts. Develop site-specific stratigraphic framework to identify paleontologically sensitive sediments, and to provide client and the CEC with guidance regarding what construction activities need and need not be monitored.

Sarah Madams
Project Manager

Education

B.S., Environmental Toxicology

Relevant Experience

Ms. Madams has more than 12 years of professional experience including project management, regulatory compliance, permitting, public involvement/community relations, data collection and analysis, database management, compliance audits, document preparation, and technical writing. For the last 8 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL, and is serving as the Project Manager for the Lodi Energy Center and the Almond 2 Power Plant. Her expertise includes working with multidisciplinary teams to assess the environmental impacts of power plant projects on the environment. These assessments include impacts to air, biological and cultural resources, land uses, noise, socioeconomics, public health, water and visual resources, soils and geology, and paleontology.

Representative Projects

Lodi Energy Center, NCPA, San Joaquin County, California. Project Manager for the licensing of this 255-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Submitted FAA Form 7460s and notice criteria tools to FAA. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff. In addition to overseeing the preparation of the AFC, Ms. Madams prepared the Alternatives analysis, Project Description, Natural Gas Supply, and the Executive Summary sections.

Almond 2 Power Plant, Stanislaus County, California. Project Manager for the licensing of this 174-MW combined cycle power plant. Managed a multidisciplinary team of scientists, planners, and engineers in preparing and filing the license application. Coordinated efforts between CEC project management, local and state agencies and CH2M HILL staff. In addition to overseeing the preparation of the AFC, Ms. Madams prepared the Alternatives analysis, Project Description, Natural Gas Supply, and the Executive Summary sections.

Chula Vista Energy Upgrade Project, MMC Energy, San Diego County, California. Deputy Project Manager for the AFC for a 100-MW power plant. Prepared and provided testimony on the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC. In addition to overseeing the preparation of the AFC, Ms. Madams prepared the Alternatives analysis.

Russell City Energy Center Amendment, Calpine, Alameda County, California. Deputy Project Manager for the AFC for a 600-MW power plant. Prepared and provided written testimony for the waste management, alternatives, worker health & safety and hazardous waste sections of the AFC. Coordinated biological and cultural surveys of the project area. Submitted FAA Form 7460s and notice criteria tools to FAA. Addressed multidisciplinary issues received from state and local agencies. Attended public workshops and hearings.

Sarah Madams, Project Manager

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California. Project Coordinator for the AFC for a 180-MW power plant. The project required the preparation of numerous other studies/documents to satisfy the CEC staff request. These studies/documents included the preparation of a General Plan amendment and planned development zoning applications, archaeological and paleontological survey reports, and biological resource protection permits. Ms. Madams assisted with the development and implementation of biological, cultural, and paleontological resource monitoring programs; risk management plan; and traffic and transportation management plan. The plant is currently in operation.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California. Project Coordinator for the AFC for a 250-MW combined cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and coordinated efforts between CEC project management and CH2M HILL staff. Ms. Madams assisted with the development of the security plan and emergency response plan. The plant is currently in operation.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California. Project Coordinator for the licensing of the 185-MW geothermal power plant. The power plant design was based on the flash geothermal power plant process, which produces both solid and liquid byproducts that required disposal. The project site was in a rural area of Imperial County, but was adjacent to a National Wildlife Refuge that supports significant populations of avian species. The licensing process involved the review of all environmental areas, and specifically focused on waste disposal, air quality, hazardous materials handling, and biological resources. Ms. Madams was responsible for the development and tracking of data response submittals requested by the CEC. The project was successfully completed, with a license issued by the CEC.

Various Power Plant Applications for Certification (AFCs). Prepared or assisted on the Worker Health and Safety, Hazardous Materials, and Waste Management sections. In addition prepared Field Safety Instructions and Health and Safety Plans for the following power plant Applications for Certification:

- Ivanpah Solar Electric Generating Station
- Eastshore Energy Center
- Carlsbad Energy Center
- San Francisco Electric Reliability Project
- Walnut Creek Energy Park
- Sun Valley Energy Project

Air Quality Audits, SMUD, California. Conducted air quality audits of the Central Valley Finance Authority's Carson Energy Facility and McClellan Gas Turbine Facility. Responsibilities included assisting with the development of the pre-audit checklist and field interview forms, conducting field interviews and audits, and assisting with summarizing and presenting findings in the final audit report.

Michael DeBortoli, PE.
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(916) 521-0047 (cell)
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RELATED WORK EXPERIENCE

- ***Northern California Power Agency*** ***1/30/06 –Present***

  Project Engineer

  - *Environmental and Regulatory:* Establish programs and procedures to ensure compliance with federal, state and local regulations. Lead for ensuring compliance with NERC standards.
  - *Finance:* Budget development for the generating assets. Review and make recommendations on authority for expenditure submissions for capital projects. Develop financial models for decision making processes.
  - *Maintenance:* Establish business / maintenance processes for power generation facilities. Analyze failure to correct and prevent repeat failures. Design and implement power plant modifications and enhancements. Design and implement information technology infrastructure to support wide area computerized maintenance management system and document control and organization system.
  - *Operations:* Administer information technology infrastructure. Provide other engineering support to member municipalities. Plant experience includes, hydro-electric, geothermal and combustion turbine both frame and aero derivative. New plant and project development.

- ***Calpine Corporation*** ***7/8/96-1/27/06***

  Operations & Maintenance Manager King City Cogen:
  Managed the daily production and maintenance activities for a 1x1 GE Frame 7EA Cogeneration Facility and a 1x0 LM6000PD Peaker. Additional facility experience includes a Siemens-Westinghouse 501F 2X1, Two GE aero derivative Qualifying Facilities and two peakers.
  - *Environment and Safety:* Established and Maintained relationships with regulatory agencies. Responsible for ensuring the compliance with all permit conditions, environmental health and safety programs, local laws, ordinances and standards. Maintained safe environment with 0 LTAs and 0 RAs.
  - *Personnel:* Responsible for hiring, counseling, disciplining and evaluating employees. Provided training and direction to facilitate employee growth and development.
  - *Finance:* Developed and implemented the annual operating and capital budget. Developed economic justification for projects in terms of present value utilizing company's discount rate.
  - *Maintenance:* Developed and implemented engineering plant upgrades and modifications. Coordinated outages and major maintenance. Managed day to day coordination of corrective and preventive maintenance activities.
  - *Operations:* Prepared monthly and annual reports financial, budget variance and compliance reports. Monitored plant performance and efficiency. Responsible for establishing and tracking plant goals. Maintained compliance with all contracts and worked with suppliers to optimize results. Worked nights, weekends and holidays to meet goals.

LICENSE

California Professional Engineer
License #: 18603

EDUCATION

BSEE - May 1995 - California State University, Sacramento
Electrical Power Engineering Certificate presented by EPRI

SPECIAL SKILLS

Microsoft Office Applications with Access Development and Programming, Bentley Power Draft, AutoCAD, Gate Cycle, PI, Windows Server Administrator, Exchange Server, Computerized Maintenance Management System (CMMS) Administrator

ASSOCIATIONS

National Fire Protection Association (NFPA)
Institute of Electrical and Electronics Engineers (IEEE)

WorleyParsons
resources & energy

Steven A. Blue, P.E.
Senior Project Manager

Resume

SUMMARY

Thirty years of project management and electrical engineering experience in the electrical power generation industry. Experience involves both domestic and international projects, including project management of the detailed design of two new large (>300 MW) combined cycle gas-fired units. Significant design experience in simple and combined cycle balance-of-plant (BOP) electrical systems, permitting support for combined cycle projects, and design experience for nuclear and coal-fired BOP electrical systems. Substantial experience as a field project engineer, supervising both electrical and mechanical engineers on fossil-fueled generating design and plant betterment projects. WorleyParsons experience includes project management for front-end engineering assignments and detailed engineering, procurement, and construction management (EPCM) for multiple gas turbine-based power plants. WorleyParsons experience also includes project proposal management and on-site project electrical support.

EXPERIENCE

2006 - Present — **Senior Project Manager – WorleyParsons, Sacramento, California**

Southern California Edison, Southern California, Large Peaking Power Project – Project manager for design, procurement, and installation of five GE LM6000 simple cycle peaking plants on five different sites simultaneously. Each plant is nominally rated at 45 MW. Project Commercial Operation Date (COD) September 2007. Total project value: $250M.

MMC Energy, Inc., Chula Vista and Escondido, California – Multiple peaking power projects located in the San Diego, California area, with one project utilizing two GE LM6000 combustion turbines with a nominal rating of about 95 MW and another project utilizing a single LM6000/selective catalytic reduction train with a nominal power capacity of 48 MW. Both projects involve repowering of an existing power plant. Project COD presently scheduled for June 2009. Total project value: $120M.

2004 - 2006 — **Engineering Project Manager – Calpine Corporation, San Jose, California**

Combined Cycle Power Station, Mankato, Minnesota, 300 MW, 1 X 1 utilizing Siemens 501F combustion turbine generator (CTG) and Toshiba steam turbine generator (STG). Total project cost: $365M.

2001 - 2004 Combined Cycle Power Station, Hudson, Colorado, 600 MW, 2 X 1 utilizing Siemens 501F CTGs and Siemens STG. Total project cost: $415M.

Directly responsible for managing all design and engineering of all aspects of the project. Monitored and controlled man-hour budgets, procurement budgets, and engineering schedules to ensure project goals, objectives, and scope are met or bettered. Managed the design engineer and had oversight review of all engineer deliverables to ensure implementation of all design concepts per Owner's requirements. Provided continuous support to construction and the construction manager to maintain construction schedules and costs. Also directly responsible for performing constructability reviews for all project design elements.

- Reviewed, managed, and approved all engineering documents and calculations
- Responsible for monitoring and maintaining construction schedule and budget
- Directly monitored and managed equipment procurement schedule and budget
- Interfaced and interacted with construction team to ensure constructability

- Negotiate equipment supplier and construction contracts

1999 - 2001 **Project Engineer – Calpine Corporation, San Jose, California**

Combined Cycle Power Station, Yuba City, California, 500 MW, 2 X 1 utilizing Siemens 501F CTs and Siemens STG. Total project cost: $600M. Directly responsible for review and proper implementation of all technical aspects of the design and construction of the facility. Also directly supervised a team of engineers to monitor construction activities of the engineer/procure/construct (EPC) contractor/engineer to ensure adherence to schedule and budget.

- Reviewed, negotiated and managed material supplier contracts.
- Reviewed, negotiated, and managed erection contracts.
- Interfaced with upper management and construction team regarding budget and construction restraints.

1997 - 1999 **Engineering Manager – Black & Veatch, Kansas City, Missouri**

Combined Cycle Power Station, Bangkok, Thailand, 350 MW, 1-on-1 utilizing ABB GT26 single shaft combustion turbine generators (CTG)/STG. Total project cost: $150M. Managed, monitored, and controlled negotiations for an EPC contract worth 135 MUSD with EPC contractor. Assembled and supervised 15-person engineering staff to perform review of plant construction and equipment purchases and all aspects of EPC design and construction.

- Reviewed and aided Owner in negotiating Power Purchase Agreement, and other third party contracts.
- Interfaced with Owner management and engineering personnel.
- Monitored and managed engineering budgets to meet project requirements and constraints.

Industrial Plant Retrofit, Bangkok, Thailand – Directly responsible for securing and negotiating a contract to investigate plant electrical system and to determine problems and methods of recertification to enhance plant reliability and availability.

- Negotiate engineering and procurement contracts with Owner and third parties.
- Composed and supervised five-person engineering staff to complete all engineering within project schedule and man-hour budgets.

Combined Cycle Cogeneration Facility, Saraburi, Thailand, 107 MW, 2-on-1 utilizing GE Frame 6B CTGs, and one GE STG – Provided warranty support for Owner by determining corrective actions to be taken on equipment failures. Contacted and directed equipment suppliers to achieve least cost repair. Supervised engineering staff to review and rectify warranty issues. Interfaced directly with Owner to settle all contractual disputes for project close-out.

Coal-fired Power Station, Henan Province, China, 350 MW – Managed a project team of 15-people for all aspects of engineering and material procurement worth 40 MUSD. Supervised creation of project manpower and financial budgets.

- Interfaced with Owner and supplier personnel for all phases of equipment procurement and design engineering.
- Directly responsible for establishing and maintaining man-hour budget and meeting all management requirements.

Project Manager

Combined Cycle Cogeneration Facility, Nong Khae, Thailand, 120 MW, 2-on-1 utilizing GE Frame 6B CTGs, and GE STG – Monitored construction for project finances, and performed due diligence for project during EPC phases of the project.

- Issued payment certificates for verification of project progress for lenders.
- Prepared monthly project progress reports for all aspects of the project.
- Interfaced directly with contractor and Owner to verify schedule and budget compliance.

Engineering Manager

Thailand regional office employee performance evaluation program, Bangkok, Thailand – Directly responsible for preparation and execution of employee training and performance evaluation program. Established criteria and rating system for rating personnel performance.

- Determined and selected training requirements for all personnel.
- Provided performance feedback and monitoring for all personnel.

1997 - 1998 Project Design Electrical Engineer

Combined Cycle Cogeneration Facility, Kaeng Khoi, Thailand, 120 MW, 2-on-1 – Directed workflow, and supervised and trained a staff of 12 Thai national engineers and technicians to complete all aspects of electrical and control design engineering, material procurement, and construction. Totally responsible for specifying and procurement of equipment worth $6 MUS dollars.

- Directly responsible to management to maintain budget (cost and man-hours) and schedule requirements.
- Required to make periodic site visits to interface with Owner personnel and to ensure construction and design interfaced correctly.
- Supervised writing and developing start-up and commissioning schedule and turn-over packages for entire plant (mechanical and electrical) systems.

1993 - 1997 **Engineering Liaison Manager**

Coal-fired circulating fluid bed with combustion turbines, Map Ta Phut, Thailand, 230 MW – Negotiated terms of EPC contract worth $300 MUS dollars with Owner. Interfaced directly with Owner's engineering staff and Owner's engineer.

- Conducted weekly meetings with the Owner to verify compliance with project engineering requirements.
- Communicated Owner engineering requirements to engineering staff to maintain quality of engineering.

Combined Cycle Power Station, Bangkok Thailand; Khanom Thailand, 600 MW, 4-units, 2-on-1; and 2-units, 3-on-1 – Directly responsible for authoring electrical/control construction and equipment contracts for all above projects. Interfaced directly with Owner's engineering staff to ensure compliance to specification was maintained. Negotiated final change orders with main and sub contractors.

- Directly responsible for overseeing all aspects of plant design while interfacing directly with Owner personnel in Owner's office headquarters.
- Responsible for interface between Owner and design engineering personnel.
- Responsible for invoicing and collection of funds receivable from Owner.

1992 - 1993 **Project Design Managing Engineer**

Combined Cycle Power Station, Khon Kaen, Thailand 300 MW, 2-on-1.

1988 - 1991 Combined Cycle Power Station, Bangrak, Thailand, 300 MW, 2-on-1 – Totally responsible for monitoring, controlling, and leading complete engineering design of facility. Controlled engineering project man-hours and budget worth 10 million dollars.

- Supervised staff of 15 engineers and technicians to complete all aspects of design and construction of the facility.
- Required to make periodic site visits to ensure construction and design interfaced correctly.
- Created specifications and responsible for contracting all electrical and control aspects of the facility.

1987 - 1988 **Project Design Electrical Engineer**

Gas-Turbine Cogeneration Facility, Bakersfield, California, 40 MW simple cycle – Totally responsible for complete electrical and control design of facility, including all aspects of control, transmission, and generation.

1986 - 1987 **Site Startup/Commissioning Engineer**

Coal-fired Power Station, 400 MW, Orlando, Florida – Administered site/start-up and testing (third party) contract for Owner, including monitoring of contract expenditures, contractor's manpower, contractor's commodity curves, approving payment certificates, etc.

1983 - 1985 **Staff Electrical Engineer**

Coal-fired Power Station, multi-unit, 600 MW, Farmington, New Mexico – Prepared plant operating instructions for all plant systems. Created an in-plant equipment maintenance plan. Directly interfaced with Owner engineer and O&M staff.

Coal-fired Power Station, 400 MW, Austin, Texas – Developed overall plant one-line, three-line diagrams. Created settings for all plant protective relays including generator as well as plant auxiliary electric system. Specified all types of electrical equipment. Produced overall plant schematic and wiring diagrams. Performed periodic site visits to ensure compliance with design and construction requirements.

1982 **Site Startup/Commissioning Engineer**

Coal-fired Power Station, 800 MW, Crystal River, Florida – Performed start-up and commissioning of turbine generator systems; generator and plant protective relaying systems; coal handling fire protection; plant vibration monitoring systems; and plant dust collection systems. Responsible for corrective actions and to maintain construction schedule.

1979 - 1982 **Staff Electrical Engineer**

Coal-fired Power Station, 800 MW, Muscatine, Iowa – Wrote operating instructions for all plant electrical systems. Quality assurance/quality control checked protective relaying schemes and instituting correctional procedures.

Nuclear Pressurized Water Reactor (PWR), 1100 MW, Inola, Oklahoma – Specified all types of electrical equipment, e.g., switchgear, motors, motor control centers, cable, etc. Developed one-line diagrams, logic diagrams, schematic, and wiring diagrams.

EDUCATION

B.S., Electrical Engineering, University of Nebraska,-Lincoln; Lincoln, Nebraska, 1978

REGISTRATIONS/AFFILIATIONS

Registered Professional Engineer – Kansas, No. 9576, 1984; and California, No. E18001, 2006

SPECIFIC TECHNICAL EXPERTISE/SPECIALIST COURSES

AutoCAD®	MS Excel
MS Word	Access

Joshua N. Hohn, AICP

Associate Planner

Education

M.C.P., Land Use Planning, Department of City and Regional Planning – University of California, Berkeley, 2003
M.A., Information and Communication Studies – California State University, Chico, 1997
B.A., Public Administration – California State University, Chico, 1994

Professional Registrations

American Institute of Certified Planners (2006, Certified Planner No. 020889)

Distinguishing Qualifications

- Nine years of experience in land use and community planning.
- Expertise in visual impact analyses and issues related to aesthetic environment, particularly with siting and licensing of energy/utility facilities and infrastructure.
- Experience in the production of Solar Energy Plans of Development (POD), comprehensive planning documents used in the development of solar energy facilities on lands administered by the Bureau of Land Management (BLM).
- Experience in preparing California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documents, including experience as Project Manager for Environmental Impact Reports (EIR).
- M.C.P. coursework focused on sustainability and sustainable land use planning, including concurrent research fellowship through the Sustainable Communities Leadership Program.

Relevant Experience

Mr. Hohn is a visual planner and conducts analyses of visual effects resulting from implementation of proposed projects while managing field visits, site photography, and tasks related to production of maps, photo-simulations, and other computer-generated graphics. As part of the Industrial Services Business Group, Mr. Hohn's visual planning work currently focuses on renewable energy projects (namely solar, wind and wave power projects) and more traditional gas-fired power plant and related transmission line projects and Applications for Certification. He has also conducted visual impact analyses related to water treatment facilities, federal dam relicensing applications, oil refinery plant expansions, residential developments and Bureau of Land Management Resource Management Plans.

As an associate planner, Mr. Hohn assists in the preparation of analyses, applications, and planning documents related to the siting and licensing of utility/energy facilities and infrastructure. Documents prepared include opportunities and constraints reports, fatal flaws analyses, and comprehensive plans that serve as the primary focus of application and certification processes. These efforts are ongoing and in the service of confidential clients.

Representative Projects

Primary Author, California Energy Commission (CEC) Applications for Certification (AFC) / AFC Amendments. Primary author of visual impact analyses for proposed new power plant facilities, power plant expansions, and the conversion of single-cycle power plants to combined-cycle facilities. Coordinated efforts with clients and CEC staff to structure approach, organized field visits, and oversaw the production of associated graphics, including photo-simulations. Identified potentially sensitive visual receptors and project-appropriate mitigation measures. Methodology employed in assessment for AFCs and AFC Amendments was consistent with CEQA requirements. Selected projects include:

- **GWF Tracy Combined Cycle Power Plant (Tracy, CA), GWF Energy LLC –** AFC seeking modification of the existing Tracy Peaker Plant from an existing nominal 169-megawatt (MW) simple-cycle power plant to a combined cycle power plant, resulting in an overall nominal net generating capacity of 314 MW.
- **Hanford Combined Cycle Power Plant (Hanford, CA) and Henrietta Combined Cycle Power Plant (Kings County, CA), GWF Energy LLC** – AFCs seeking amendments to convert existing 95-MW simple-cycle power plants into combined-cycle power plants each with a nominal net 25-MW of additional capacity.
- **Lodi Energy Center Power Project (Lodi, CA), Northern California Power Agency** – AFC seeking authority to construct and operate a natural gas-fired, combined-cycle electrical generating facility rated at a nominal generating capacity of 255 MW.
- **Mariposa Energy Project (Alameda County, CA), Mariposa Energy LLC** – AFC seeking authority to construct and operate a nominal 200-MW, simple-cycle generating facility. Also wrote AFC Land Use chapter.
- **Oakley Generating Station (Oakley, CA), Contra Costa Generating Station LLC** – AFC seeking authority to construct and operate a nominal 624-MW natural gas-fired, combined cycle electrical generating facility.

Visual Analyst, California High Speed Rail Project – Merced to Fresno Segment, California High Speed Rail Authority. Serving as lead analyst of potential impacts to visual resources from the proposed construction of the California High Speed Rail alignment extending from Merced, CA to Fresno, CA. Conducted preliminary alternatives analysis and will coordinate production of photo-simulations.

Visual Analyst, Wind Energy Facility – Photosimulations for Proposed Project, Confidential Client. Coordinated production of set of photo-simulations for a proposed wind farm facility. Working with a set of views provided by client, selected Key Observation Points (KOPs) based on analysis of potentially sensitive visual receptors. Final deliverable also included "view cone" figures, indicating on an aerial graphic which exact simulated objects would be visible in the simulated view.

Visual Analyst, Transmission Line Reconductoring, Confidential Client. Documented visual changes likely to result from proposed reconductoring of an existing 230-kilovolt (kV) transmission line. Coordinated field visit during which existing conditions were documented and KOP locations selected based on the presence of potentially sensitive visual receptors relative to the transmission line.

Siting and Licensing

Project Planner, Alta Oak Creek Wind Energy Project (Kern County, CA), Terra-Gen Power, LLC. Provide general support for the permitting of a wind energy project proposed to generate up to 800 megawatts of energy, with specific focus on visual impacts analysis.

Project Planner, Solar Siting Plan of Development, Confidential Client. Coordinated production of document detailing proposed 700-megawatt solar energy facility. Plan of Development was consistent with Bureau of Land Management format.

Project Planner, Opportunities and Constraints Analysis for Linear Transmission Project, Confidential Client. Conducted analysis of potential opportunities and constraints specific to utilities and transmission facilities proposed for a multi-state route. Analysis addressed federally managed lands.

Project Planner, Critical Issues Report and Response to Request for Offers, Confidential Client. Managed the assembly of a Critical Issues Report that examined potential constraints and other environmental factors at the proposed project site, and a response to a Request for Offers, which was submitted by the client to an energy utility as part of the application process.

Professional Organizations/Affiliations

American Institute of Certified Planners – Certified Planner (2006)

Greenbelt Alliance – Member of Compact Development Team (2006 – 2008)

Transportation and Land Use Coalition – Member (2003 – present)

Honors and Awards

2003 Outstanding M.C.P. Graduate – University of California at Berkeley, Department of City and Regional Planning

1997 College of Communication and Education Outstanding Teaching Associate – California State University, Chico

Supplemental Information

Years Experience Prior to CH2M HILL: 7
CH2M HILL Hire Date: January 22, 2008

Employment History

Associate Planner; EDAW/AECOM; San Francisco, CA; 2004 – 2007
Visual Resources Analyst – Designed, conducted and managed visual impact analysis efforts related to three general areas: Energy Infrastructure (wind farm development, California Energy Commission Applications for Certification, federal dam relicensing applications, and oil refinery plant expansions); Environmental Impact Reports, Environmental Impact Statements and Environmental Assessments (residential developments, water treatment facilities, and Bureau of Land Management Resource Management Plans); and General Plan updates (including Napa County Visual Resources Baseline Data Report, which won awards from the National Association of Environmental Professionals and the Northern Section California Chapter American Planning Association).

Project Manager – Managed the research, writing and production of Environmental Impact Reports (EIRs) for two separate residential projects, one an infill project on a currently polluted site in San Francisco that would be remediated as part of the development, the other a hillside development in Contra Costa County.

Research Fellow; William and Flora Hewlett Foundation; Menlo Park, CA; 2003.
Designed and conducted interview survey research assessing the Neighborhood Improvement Initiative.

Research Fellow; Sustainable Communities Leadership Program; San Francisco, CA; 2002.
Authored report on barriers to greater environmental, social and economic sustainability in California. Planned, constructed and administered a statewide survey of for-profit, non-profit and governmental organizations regarding barriers to implementing and managing sustainability-oriented programs and projects.

Sustainable Policies Analyst; County of Marin Community Development Agency; San Rafael, CA; 2001. Analyzed Countywide Plan on basis of its environmental sustainability; made recommendations to County staff on how to further incorporate sustainable practices into the Plan's Community Development, Transportation, Housing, Community Facilities and Community Design elements.

Program Assistant; Community Focus; San Francisco, CA; 1998-1999. Facilitated public participation in City of Sunnyvale Downtown revitalization project; researched similar economic and community development efforts nationwide.

Last Employee Update: 12/21/09

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

APPLICATION FOR CERTIFICATION
FOR THE *Lodi Energy Center*

Docket No. 08-AFC-10

PROOF OF SERVICE
(Revised 2/17/09)

APPLICANT

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INTERESTED AGENCIES

California ISO
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INTERVENORS

ENERGY COMMISSION

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Member
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DECLARATION OF SERVICE

I, Ashley Y Garner, declare that on December 22, 2009, I served and filed copies of the attached **LODI ENERGY CENTER TESTIMONY AND RESUMES December 21, 2009**. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/lodi/index.html].

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

(*Check all that Apply*)

For service to all other parties:

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

__X__ by personal delivery or by depositing in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

For filing with the Energy Commission:

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

OR

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

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-10
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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

Ashley Y Garner

Ashley Y. Garner