

DOCKET	
07-AFC-4	
DATE	SEP 10 2008
RECD.	SEP 12 2008

Testimony

In support of the

Application for Certification

for the

Chula Vista Energy Upgrade Project

Chula Vista, California
(07-AFC-4)

Submitted to the:

California Energy Commission

Submitted by:



With Technical Assistance by:



September 2008

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Executive Summary

I. Introduction

- A. **Names:** Harry Scarborough and Douglas Davy
- B. **Purpose:** This testimony addresses the Executive Summary for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Harry Scarborough is presently employed with MMC Energy, Inc. as a Senior Vice President for Business Development and Operations. He has a Master's Degree in Management Science and has 35 years of experience operating, constructing, managing and developing power plants in the military and commercial sectors.

Douglas Davy is presently employed with CH2M HILL as a Program Manager. He has a Doctor of Philosophy degree and has 23 years of experience with environmental siting, permitting, and licensing of infrastructure development.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 1.0 – Executive Summary (Exhibit 1)
- MMC Fact Sheet for the Chula Vista Energy Upgrade Project (English and Spanish Version) (Exhibit 10)
- Response to South West Chula Vista Civic Association Flyer (Exhibit 16)
- Agreement with the City of Chula Vista on Mitigation and Consistency of the Project with the City of Chula Vista General Plan (Exhibit 21)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment does not have licensing conditions directly related to the Executive Summary.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

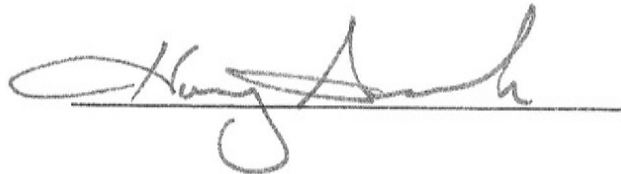
DOCKET NO. 07-AFC-04

DECLARATION OF
Harry Scarborough

I, Harry Scarborough, declare as follows:

1. I am presently employed by MMC Energy Inc. as a Senior Vice President for Business Development and Operations
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 1.0 – Executive Summary for the Chula Vista Energy Upgrade Project (Exhibit1).
4. It is my professional opinion that the attached prepared testimony is true 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 Sept 05, 2008.

A handwritten signature in dark ink, appearing to read "Harry Scarborough", is written over a horizontal line.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Douglas Davy**

I, Douglas Davy, declare as follows:

6. I am presently employed by CH2M HILL as a Program Manager.
7. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
8. The attached testimony relating to the Application for Certification, Section 1.0 – Executive Summary for the Chula Vista Energy Upgrade Project (Exhibit1), was prepared under my direction.
9. It is my professional opinion that the attached prepared testimony is true and accurate with respect to issues that it addresses.
10. 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 September 10, 2008.



Project Description

I. Introduction

- A. **Name:** Steven Blue, P.E.
- B. **Purpose:** This testimony addresses the Project Description, including Electrical Transmission and Natural Gas Supply, for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Mr. Blue is presently employed with WorleyParsons as a Senior Project Manager. He has a Bachelor's Degree in Electrical Engineering. He is currently a registered Professional Electrical Engineer in the State of Kansas and in the State of California and has almost 30 years of experience in the detailed design and engineering management of gas-fired, coal-fired and nuclear power plants.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 2.0 – Project Description, Section 3.0 – Electrical Transmission, and Section 4.0 – Natural Gas Supply (Exhibit 1)
- Response to Energy Commission's Data Requests 1-47 and Workshop Query 1 – Responses 42-47 (Exhibit 3)
- Response to Environmental Health Coalition's Data Requests 1-35 – Response 35 (Exhibit 5)
- Response to Environmental Health Coalition's Data Requests 36-54 – Responses 45-47 (Exhibit 7)
- Appendix 3A – System Impact Study (Exhibit 9)
- Appendices A – K, referenced in the CA-ISO Interconnection Facilities Study and MMC Comment Letter, 3/28/08 (Exhibit 11)
- CA-ISO Interconnection Facilities Study and MMC Comment Letter (Exhibit 17)
- MMC Energy, Inc.'s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)

- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Letter CA-ISO Re: Reliability Must Runs Status (Exhibit 20)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to the Project Description Electrical Transmission, and Natural Gas Supply. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and have the following comments and suggested changes to the Conditions of Certification:

Land Use

Regarding Condition of Certification LAND-1, the project owner suggests that the specific requirement for a development plan be moved to the Verification, as follows:

LAND-1 The project owner shall ensure that the project and its associated facilities are constructed and operated in compliance with the City of Chula Vista's Limited Industrial (I-L) Zone requirements, such as height limits, minimum design and performance standards (such as air quality best available control technology and noise abatement measures), landscaping requirements, and other applicable municipal code requirements.

~~The project owner shall submit a development plan for the site to the City of Chula Vista in sufficient time for review and comment and to the Energy Commission's Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction. The development plan shall include all elements normally required for review and permitting of a similar project, including site plan, structural dimensions, design and exterior elevation(s)(COCV-2008a).~~

Verification: At least 90 calendar days prior to the start of construction, including any demolition, grading, or site remediation on the project site, the project owner shall submit a development plan for the site to the City of Chula Vista and to the Energy Commission's Compliance Project Manager (CPM) for review and approval prior to the proposed start of construction. The development plan shall include all elements normally required for review and permitting of a similar project, including site plan, structural dimensions, design and exterior elevation(s)(COCV 2008a). ~~the proposed development plan to the City of Chula Vista for review and comment and to the CPM for review and approval.~~ The project owner shall also provide the CPM with a copy of the transmittal letter to the City of Chula Vista.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the local jurisdiction, along with any changes to the proposed development plan, to the CPM for review and approval.

Upon receipt of any required permits and/or documentation from the City of Chula Vista (e.g., such as building permits, engineering, grading, encroachment, and demolition permits, and a

recycling and solid waste diversion report), the project owner shall provide to the CPM documentation that the permits applicable to the project have been obtained.

Noise

The project owner suggests the following changes to Condition NOISE-7 for clarity.

NOISE-7 The project owner shall perform pile driving using the quietest pile driving technology available ~~a quieter process than the traditional pile driving techniques~~ to ensure that noise from these operations is mitigated to the greatest extent possible ~~does not cause an annoyance at monitoring locations M-1 and M-2.~~

Soil & Water

The project owner has no authority over any linear facilities that may be under control of SDG&E for either construction or operation. Also, the “pond” on site cannot be considered a “retention” basin as the volume is not large enough to retain any but the 2-year rainfall. Rather, the on-site basin can only be considered a “detention” pond where stormwater is retained for a short time prior to being released into the drainage system.

SOIL&WATER-2: Prior to site mobilization, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion, and Sedimentation Control Plan (DESCP) that ensures protection of water quality and soil resources of the project site ~~and all linear facilities~~ for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, and identify all monitoring and maintenance activities. Monitoring activities shall include routine measurement of the volume of accumulated sediment in the existing on-site stormwater detention basin. Maintenance activities must include removal of accumulated sediment from the detention basin when an average depth of 0.5 feet of sediment has accumulated in the detention basin. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and may incorporate by reference any stormwater pollution prevention plan developed in conjunction with any NPDES permit.

Engineering

The AFC was submitted with a schedule that indicated an early summer 2009 commercial operation date. To accomplish this date, the detailed engineering had to begin no later than late spring 2008 or almost 6 months prior to September 2008. It will be impossible to update the design to include those standards and codes that are in effect when documents are submitted to the CBO, which appears at this time to be at least late September 2008. It has already been noted to the CEC that CBC 2007 will be used for the design of this facility.

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering laws, ordinances, regulations and standards (LORS) in effect at the time that actual design engineering began for the project. ~~initial design plans are submitted to the chief building official (CBO) for review and approval (the CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously).~~ The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility (2007 CBC, Appendix Chapter 1, § 101.2, Scope). All

transmission facilities (lines, switchyards, switching stations, and substations) are covered in the conditions of certification in the **Transmission System Engineering** section of this document.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall first meet with the CBO and agree on what portion(s) of the facility design will be submitted to the CBO for review. The project owner shall then furnish the CPM and the CBO with a schedule of facility design submittals, master drawing, and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

Regarding the table following Condition GEN-2, the project does not have a diesel generator and will use inlet air evaporative coolers, not foggers and therefore there is no fogging system. The OWS that is planned to be used on this project is an in-ground version and therefore has no foundation.

Description	Qty
NOx Water Injection Skid Foundation and Connections	2
CT Inlet Air Evaporative Coolers Fogger System Foundation and Connections	2
Ammonia Delivery Skid Foundation and Connections	2
Fuel Gas Compressors Foundation and Connections	1 3
Fuel Gas Recycle Cooler Foundation and Connections	1
Oil/Water Separator Foundation and Connections	4
Black Start Diesel Generator Foundation and Connections	4

The project owner offers the following suggested wording changes to Conditions GEN-4 and GEN-5, for clarification:

GEN-4 Prior to the start of rough grading, the project owner shall engage a design engineering firm which shall assign a California registered architect, structural engineer, or civil engineer, as the resident engineer in charge of the project (2007 California Administrative Code, § 4-209, Designation of Responsibilities). All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the **Transmission System Engineering** section of this document.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California.) ~~All transmission facilities (lines,~~

~~switchyards, switching stations, and substations) are handled in the conditions of certification in the **Transmission System Engineering** section of this document. The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. ~~The transmission line may be the responsibility of a separate California registered electrical engineer. The project owner shall submit, to the CBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project (2007 CBC, Appendix Chapter 1, § 104, Duties and Powers of Building Official). All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **Transmission System Engineering** section of this document.~~~~

The project owner suggests deleting Condition STRUC-3 since the plant is already being designed to CBC 2007. Therefore, there are no "...design changes...required by the 2007 CBC..." This COC implies that the plant is/was being designed to some other CBC version.

~~**STRUC-3** The project owner shall submit to the CBO design changes to the final plans required by the 2007 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing (2007 CBC, Appendix Chapter 1, § 106.1, Submittal Documents; §106.4, Amended Construction Documents; 2007 California Administrative Code, § 4-215, Changes in Approved Drawings and Specifications).~~

Transmission System Engineering

The project owner suggests modifying Condition TSE-2 as follows:

TSE-2 Before the start of construction, ~~the SDG&E project owner~~ shall assign to the project an electrical engineer and at least one of each of the following:

Page 5.5-2

The project owner suggests the following changes to text on Page 5.5-2 describing the role of San Diego Gas and Electric Company.

SDG&E is responsible for ensuring electric system reliability in the SDG&E system for the addition of the proposed transmission modifications and determines both the standards necessary to achieve reliability and whether the proposed transmission modifications conform to those standards. SDG&E analyzes the interconnection of a proposed project under the direction of the California ISO. SDG&E is also responsible for the upgrade and implementation, engineering, construction, planning, scheduling, etc., for any and all transmission facilities outside the battery limit of the CVEUP project site.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Steven Blue, P.E.**

I, Steven Blue, P.E., 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 incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Sections 2.0 – Project Description, 3.0 – Electrical Transmission, and 4.0 – Natural Gas Supply for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 8 Sept, 2008.

Steven A. Blue, P.E.

Air Quality

I. Introduction

- A. **Name:** Gregory Darwin
- B. **Purpose:** This testimony addresses Air Quality analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Mr. Darwin is presently owner of Atmospheric Dynamics, Inc. He has a Master of Sciences degree in Atmospheric Science and has 16 years of experience performing air quality assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Sections 5.1 - Air Quality (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- Response to Energy Commission’s Data Requests 1-47 and Workshop Query 1 – Responses 1-29 (Exhibit 3)
- Response to Energy Commission’s Data Requests 2-5 and 25 (Exhibit 4)
- Response to Environmental Health Coalition’s Data Request 1-35 – Responses 1-13 (Exhibit 5)
- Response to Energy Commission’s Data Request 6 (Exhibit 6)
- Response to Environmental Health Coalition’s Data Request 36-54 – Responses 36-44 (Exhibit 7)
- Air Modeling Files (Exhibit 12)
- MMC Energy Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Air Quality. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's air quality impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Gregory Darvin**

I, Gregory Darvin, declare as follows:

1. I am presently owner of Atmospheric Dynamics, Inc. a meteorological consulting services company.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Sections 5.1 – Air Quality for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 Barbara, CA on September 10, 2008.

A handwritten signature in black ink, appearing to read 'Gregory Darvin', is written over a horizontal line.

Biological Resources

I. Introduction

- A. **Name:** Sophia Chiang
- B. **Purpose:** This testimony addresses Biological Resources analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Ms. Chiang is presently employed at CH2M HILL as a Project Biologist. She has a Master's Degree in Environmental Science and has over 10 years of experience conducting biological surveys and preparing biological resource reports.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.2 – Biological Resources (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- MMC Energy, Inc.'s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Biological Resources. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's biological impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Sophia Chiang**

I, Sophia Chiang, declare as follows:

1. I am presently employed by CH2M HILL as a Project Scientist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.2 - Biological Resources for the Chula Vista Energy Upgrade Project (Exhibit1).
4. It is my professional opinion that the attached prepared testimony is true 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 Sept. 8, 2008.



Cultural Resources

I. Introduction

- A. **Name:** Clint Helton, M.A., RPA
- B. **Purpose:** This testimony addresses Cultural Resource analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Clinton Helton is presently employed at CH2M HILL as a Project Scientist. Mr. Helton has a Master of Arts Degree in Anthropology, is a Registered Professional Archaeologist and has 9 years of experience preparing cultural resource assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.3 – Cultural Resources (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- Response to Energy Commission’s Data Requests 1-47 and Workshop Query 1 – Responses 30-37 (Exhibit 3)
- Response to Environmental Health Coalition’s Data Requests 36-54 – Responses 52, 53 (Exhibit 7)
- Letter from Downey Brand Re: Application for Confidential Designation of Confidential Cultural Resources Reports Provided in Response to Data Request 36 (Exhibit 14)
- Letter Approving Confidentiality for Cultural Resources (Exhibit 15)
- MMC Energy, Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Form DPR522 for the Lorenzo Anderson House and Finding of Effect Memorandum (Exhibit 22)
- Declarations and Testimony (Exhibit 23)

To the best of my knowledge, all of the facts contained in this testimony (including all referenced documents) are true and correct. To the extent this testimony contains opinions,

such opinions are my own. I make these statements, and render these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Cultural Resources. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's cultural impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

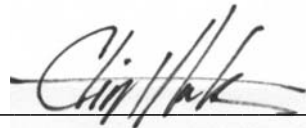
DOCKET NO. 07-AFC-04

DECLARATION OF
Clint Helton

I, Clint Helton, declare as follows:

1. I am presently employed by CH2M HILL as a Project Scientist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. The attached testimony relating to the Application for Certification, Section 5.3 – Cultural Resources for the Chula Vista Energy Upgrade Project (Exhibit 1) was prepared under my direction.
4. It is my professional opinion that the attached prepared testimony is true 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 September 10, 2008.



Geological Hazards and Resources

I. Introduction

- A. **Name:** Curtis Basnett, P.E., G.E.
- B. **Purpose:** This testimony addresses Geological Hazards and Resources analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Mr. Basnett is presently employed at CH2M HILL as a geotechnical engineer. He has a Master's Degree in Civil Engineering, is a registered geotechnical engineer, and has over 20 years of experience in geotechnical engineering, including preparing geotechnical designs and reports.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.4 – Geological Hazards and Resources (Exhibit 1).
- MMC Energy, Inc.'s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Geological Hazards and Resources as part of the engineering related conditions. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's geological impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Curt Basnett**

I, Curt Basnett, declare as follows:

1. I am presently employed by CH2M HILL as a Senior Technologist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.4 – Geological Hazards and Resources for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 5, 2008.



Hazardous Materials

I. Introduction

- A. **Name:** Sarah Madams
- B. **Purpose:** This testimony addresses Hazardous Materials analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Sarah Madams is presently employed at CH2M HILL as a Project Consultant. Ms. Madams has a Bachelors of Science Degree in Environmental Toxicology and has over 9 years experience preparing hazardous materials, waste management and worker health and safety assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.5 – Hazardous Materials Handling, Section 5.14 – Waste Management, and Section 5.16, Worker Health and Safety (Exhibit 1)
- Response to Energy Commission’s Data Requests 1-47 and Workshop Query 1 – Response WSQ-1 (Exhibit 3)
- Response to Environmental Health Coalition’s Data Requests 1-35 – Responses 14-18 (Exhibit 5)
- MMC Energy, Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Hazardous Materials Management. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and

minimize the project's impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Sarah Madams**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL as a Project Consultant
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.5 – Hazardous Materials Handling for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 10, 2008.



Land Use

I. Introduction

- A. **Name:** Greta Kirschenbaum
- B. **Purpose:** This testimony addresses Land Use analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Ms. Kirschenbaum is presently employed at CH2M HILL as an Associate Planner. She has a Master's Degree in Urban Planning and more than 8 years of experience preparing, coordinating and managing planning and environmental compliance documents and projects including Master Plans, Environmental Impact Reports, Environmental Assessments and Mitigation Plans.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.6 – Land Use (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- Response to Environmental Health Coalition's Data Requests 55, 56 (Exhibit 8)
- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Agreement with the City of Chula Vista on Mitigation and Consistency of the project with the Chula Vista General Plan (Exhibit 21)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Land Use. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's Land Use impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment. Please see testimony sponsored by Steven Blue, P.E.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

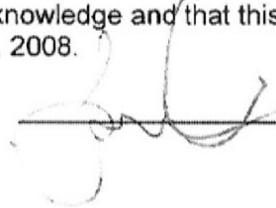
DOCKET NO. 07-AFC-04

DECLARATION OF
Greta Kirschenbaum

I, Greta Kirschenbaum, 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 incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.6 – Land Use for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 9/9, 2008.



Noise

I. Introduction

- A. **Name:** David Baker, P.E.
- B. **Purpose:** This testimony addresses Noise analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Mr. Baker is a presently employed at CH2M HILL as an acoustical engineer. He has a Bachelor's Degree in Mechanical Engineering and has 30 years of experience working with noise-related issues.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.7 – Noise (Exhibit 1)
- Response to Environmental Health Coalition's Data Requests 36-54 – Responses 50, 51 (Exhibit 7)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Noise. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's noise impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment. Please see testimony sponsored by Steven Blue, P.E. for comments on NOISE-7.

Energy Resources
Conservation and Development Commission

DECLARATION OF Dave Baker

1. I am presently employed by CH2M HILL as an Engineer.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.7 - Noise for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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.

Dwight M. Barber

Paleontological Resources

I. Introduction

- A. **Name:** Geoffrey Spaulding, Ph.D.
- B. **Purpose:** This testimony addresses Paleontological Resources analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Geoffrey Spaulding is presently employed at CH2M HILL as a Regulatory Compliance Manager and Senior Scientist and has been for the past 6 years. Mr. Spaulding has a Doctor of Philosophy Degree in Geosciences and has more than 25 years of experience preparing paleontological resource assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.8 – Paleontological Resources (Exhibit 1)
- MMC Energy, Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Paleontological Resources. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project’s paleontological impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

DECLARATION OF
Geoffrey Spaulding, Ph.D.

I, W. Geoffrey Spaulding, Ph.D., declare as follows:

1. I am presently employed by CH2M HILL as a Senior Scientist and Paleontological Resources Specialist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.8 – Paleontological Resources for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 05, 2008.



Public Health

I. Introduction

- A. **Name:** Gregory Darvin
- B. **Purpose:** This testimony addresses Public Health analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Mr. Darvin is presently owner of Atmospheric Dynamics, Inc. He has a Master of Sciences degree in Atmospheric Science and has 16 years of experience performing public health assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.9 – Public Health (Exhibit 1)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Public Health. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's public health impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

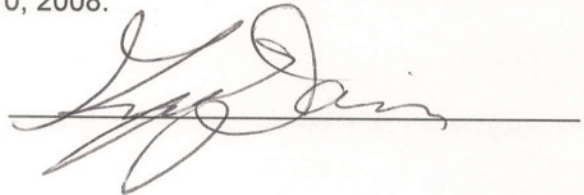
DOCKET NO. 07-AFC-04

**DECLARATION OF
Gregory Darwin**

I, Gregory Darwin, declare as follows:

1. I am presently owner of Atmospheric Dynamics, Inc., a meteorological consulting services company.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.9 – Public Health, for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 Barbara, CA on September 10, 2008.

A handwritten signature in black ink, appearing to read 'Gregory Darwin', is written over a horizontal line.

Socioeconomics

I. Introduction

- A. **Name:** Fatuma Yusuf, Ph.D.
- B. **Purpose:** This testimony addresses Socioeconomics analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Fatuma Yusuf is presently employed at CH2M HILL as a Project Consultant and has been for the past 7 years. Ms. Yusuf has a Doctor of Philosophy degree in Agricultural Economics and has 11 years of experience preparing socioeconomic assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.10 – Socioeconomics (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends a Conditions of Certification be adopted related to Socioeconomics. These Condition addresses applicable federal, state, and local laws, ordinances, regulations, and standards and minimizes the project's economic impacts. I have reviewed the Socioeconomics Condition of Certification set forth in the Staff Assessment and find the Condition to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

DECLARATION OF
Fatuma Yusuf

I, Fatuma Yusuf, declare as follows:

1. I am presently employed by CH2M HILL as a Project Consultant.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.10 – Socioeconomics for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 Sept. 9th, 2008.



Soils

I. Introduction

- A. **Name:** Steve Long
- B. **Purpose:** This testimony addresses Soils analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Steve Long is presently employed at CH2M HILL as a Project Scientist and has been for the past 12 years. Mr. Long has a Master of Science Degree in Soil Science and has 20 years of experience preparing soil resource assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.11 –Soils (Exhibit 1)
- Response To Energy Commission’s Data Requests 1-47 and Workshop Query 1 – Responses 38–41 (Exhibit 3)
- MMC Energy, Inc.’s Final Comments on Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Soils. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project’s soils impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment. Please see testimony sponsored by Steven Blue, P.E. for comments on Condition of Certification SOIL&WATER-2.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

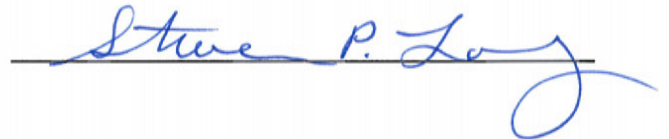
DOCKET NO. 07-AFC-04

**DECLARATION OF
Steve Long**

I, Steve Long, declare as follows:

1. I am presently employed by CH2M HILL as a Project Scientist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.11 – Soils and Agriculture for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 Sept. 5, 2008.



Traffic and Transportation

I. Introduction

- A. **Name:** Loren Bloomberg
- B. **Purpose:** This testimony addresses Traffic and Transportation analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Loren Bloomberg is presently employed at CH2M HILL as a Senior Technologist and has been for the past 9 years. Mr. Bloomberg has a Master's Degree in Civil Engineering and has over 17 years of experience preparing Traffic and Transportation assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.12 –Traffic and Transportation (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- MMC Energy, Inc.'s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Agreement with the City of Chula Vista on Mitigation and Consistency of the Project with the Chula Vista General Plan (Exhibit 21)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Traffic and Transportation. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's traffic and transportation impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

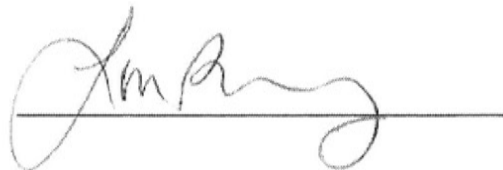
DECLARATION OF
Loren Bloomberg

I, Loren Bloomberg, declare as follows:

1. I am presently employed by CH2M HILL as a Principal Technologist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.12 – Traffic and Transportation for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 5, 2008.

Santa Ana

A handwritten signature in cursive script, appearing to read "Loren Bloomberg", is written over a horizontal line.

Visual Resources

I. Introduction

- A. **Name:** Maria Elena Conserva, Ph.D.
- B. **Purpose:** This testimony addresses Visual Resource analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Ms. Conserva is currently employed with CH2M HILL as an Associate Planner. She has a Doctor of Philosophy degree in Geography and has been with CH2M HILL for over a year preparing visual impact analyses.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.13 – Visual Resources (Exhibit 1)
- MMC Energy, Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Visual Resources. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project’s visual resources impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

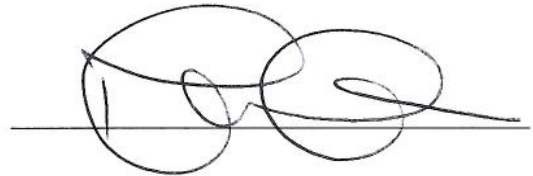
DOCKET NO. 07-AFC-04

DECLARATION OF
Maria Elena Conserva

I, Maria Elena Conserva, 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 incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.13 – Visual Resources for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 8, 2008.

A handwritten signature in black ink, consisting of a large, stylized 'M' followed by a series of loops and a long horizontal stroke extending to the right.

Waste Management

I. Introduction

- A. **Name:** Sarah Madams
- B. **Purpose:** This testimony addresses Waste Management analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Sarah Madams is presently employed at CH2M HILL as a Project Consultant. Ms. Madams has a Bachelors of Science Degree in Environmental Toxicology and has over 9 years experience preparing hazardous materials, waste management and worker health and safety assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.14 – Waste Management (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- MMC Energy, Inc.’s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Worker Health and Safety. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project’s impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Sarah Madams**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL as a Project Consultant
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.14 – Waste Management for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 10, 2008.



Water Resources

I. Introduction

- A. **Name:** Laurel Karren
- B. **Purpose:** This testimony addresses Water Resource analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Ms. Karren is currently employed with CH2M HILL as a project scientist. She has a Master's Degree in Agriculture and has ten years of experience working with water issues including watershed protection and management and analysis.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.15 – Water Resources (Exhibit 1)
- Supplement to AFC – Response to Data Adequacy Review (Exhibit 2)
- Response to Energy Commission's Data Requests 1-47 and Workshop Query 1 – Responses 38 – 41 (Exhibit 3)
- Response to Environmental Health Coalition's Data Requests 1-35 – Responses 23-32 (Exhibit 5)
- Response to Environmental Health Coalition's Data Requests 36-54 – Response 54 (Exhibit 7)
- MMC Objection to California Energy Commission Data Request 40 (Exhibit 13)
- MMC Energy, Inc.'s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Agreement with the City of Chula Vista on Mitigation and Consistency of the Project with the Chula Vista General Plan (Exhibit 21)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Water Resources. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's soil and water impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment. Please see testimony sponsored by Steven Blue, P.E. for comments on Condition of Certification SOIL&WATER-2.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

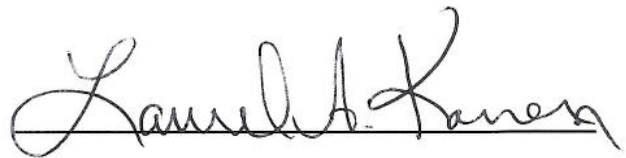
DOCKET NO. 07-AFC-04

**DECLARATION OF
Laurel Karren**

I, Laurel Karren, declare as follows:

1. I am presently employed by CH2M HILL as a Project Scientist.
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.14 – Water Resources (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 8, 2008.

A handwritten signature in cursive script, reading "Laurel A. Karren", written over a horizontal line.

Worker Health and Safety

I. Introduction

- A. **Name:** Sarah Madams
- B. **Purpose:** This testimony addresses Worker Health and Safety analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Sarah Madams is presently employed at CH2M HILL as a Project Consultant. Ms. Madams has a Bachelor of Sciences Degree in Environmental Toxicology and has over 9 years experience preparing hazardous materials, waste management and worker health and safety assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 5.16, Worker Health and Safety (Exhibit 1)
- MMC Energy, Inc.'s Preliminary Comments on the Preliminary Staff Assessment – Chula Vista Energy Upgrade Project (Exhibit 18)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

The Staff Assessment for the project filed by the CEC recommends Conditions of Certification be adopted related to Worker Health and Safety. These Conditions address applicable federal, state, and local laws, ordinances, regulations, and standards and minimize the project's impacts. I have reviewed the Conditions of Certification set forth in the Staff Assessment and find the Conditions to be acceptable.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project

DOCKET NO. 07-AFC-04

**DECLARATION OF
Sarah Madams**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL as a Project Consultant
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 5.16 – Worker Health and Safety for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 10, 2008.



Alternatives

I. Introduction

- A. **Name:** Sarah Madams
- B. **Purpose:** This testimony addresses Alternative Site analyses conducted for the Chula Vista Energy Upgrade Project Application for Certification.
- C. **Qualifications:** Sarah Madams is presently employed at CH2M HILL as a Project Consultant. Ms. Madams has a Bachelor of Science Degree in Environmental Toxicology and has over 9 years experience including preparing alternative site assessments.

II. Prior Filings

In addition to the statements herein, this testimony includes by reference the following documents submitted in this proceeding:

- Chula Vista Energy Upgrade Project Application for Certification, Section 6.0– Alternatives (Exhibit 1)
- Response to Environmental Health Coalition’s Data Requests 1-35 – Responses 33, 34 (Exhibit 5)
- Response to Environmental Health Coalition’s Data Requests 36-54 – Responses 48, 49 (Exhibit 7)
- MMC Energy, Inc.’s Final Comments on the Preliminary Staff Assessment (Exhibit 19)
- Declarations and Testimony (Exhibit 23)

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

III. Proposed Licensing Conditions

There are no proposed licensing conditions for Alternatives.

STATE OF CALIFORNIA
Energy Resources
Conservation and Development Commission

In the Matter of:

Chula Vista Energy Upgrade Project


DOCKET NO. 07-AFC-04

**DECLARATION OF
Sarah Madams**

I, Sarah Madams, declare as follows:

1. I am presently employed by CH2M HILL as a Project Consultant
2. A copy of my professional qualifications and experience is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to the Application for Certification, Section 6.0 – Alternatives for the Chula Vista Energy Upgrade Project (Exhibit 1).
4. It is my professional opinion that the attached prepared testimony is true 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 September 5, 2008.



Appendix A

Resumes

Resumes

David Baker, Noise, CH2M HILL

Curtis Basnett, G.E., Geological Hazards and Resources, CH2M HILL

Loren D. Bloomberg, T.E., Traffic and Transportation, CH2M HILL

Stephen Blue, P.E. Senior Project Manager, WorleyParsons

Sophia Chiang, Biological Resources, CH2M HILL

MariaElena Conserva, Visual Resources, CH2M HILL

Gregory Darwin, Air Quality, Public Health, Atmospheric Dynamics

Douglas M. Davy, Ph.D., Project Manager, CH2M HILL

Clint Helton, M.A., Cultural Resources, CH2M HILL

Laurel Karren, Water Resources, CH2M HILL

Greta M. Kirschenbaum, Land Use, CH2M HILL

Steve Long, Soils, CH2M HILL

Sarah Madams, Hazardous Materials Management, Waste Management, Worker Health and Safety, Deputy Project Manager, CH2M HILL

Harry Scarborough, Vice-President, MMC Energy, Inc.

W. Geoffrey Spaulding, Paleontological Resources, CH2M HILL

Fatuma Yusuf, Socioeconomics, CH2M HILL

David Baker, P.E.

Senior Acoustical Engineer

Education

B.S., Mechanical Engineering, Oregon State University

Professional Registrations

Professional Engineer: Oregon (Acoustical, Environmental, and Mechanical)

Relevant Experience

Mr. Baker is a senior engineer in CH2M HILL's Portland, Oregon office. He has experience in noise measurement, analysis, and control for buildings, transportation projects, power plants, and industrial facilities. He has worked to measure site noise levels for both new and existing noise sources. Noise impacts have been estimated using computer models and standard acoustical calculation techniques. Noise control measures have been evaluated for situations where the noise criteria or regulatory limits were exceeded. Noise analysis results have been presented in written reports and public meetings.

Representative Projects

- Lead Acoustical Engineer for the Chula Vista Energy Upgrade Project. Tasks included selecting noise monitoring locations and conducting the monitoring, estimating noise levels from the proposed facility, evaluating compliance with environmental noise limits, and evaluating options for mitigation of facility noise.
- Evaluated noise and provided input to the design of the Twin Oaks Valley Water Treatment Plant near San Diego, California. The Cadna/A® noise model was used as a design tool to estimate offsite noise levels to ensure compliance with contract limits. Extensive noise mitigation was included in the design because of the very restrictive property line limit.
- Conducted a noise analysis for the West Cascade Energy 900 MW combustion turbine, natural gas-fired power plant proposed to be located north of Eugene, OR. The facility consisted of two GE 7FA combustion turbines with heat recovery steam generators to operate in combined cycle (600 MW total output) and six LM6000 combustion turbines to operate in simple cycle (300 MW total output). Extensive noise mitigation was included in the analysis because of the close proximity to the plant of several residences. The noise modeling demonstrated that the facility would comply with the absolute noise limits and the limits on allowable noise level increase in the State of Oregon Administrative Rules.
- Provided expert third-party acoustical engineering services for Whatcom County in the State of Washington. Whatcom County had approved the construction of a power plant at the BP Cherry Point Refinery. The approval included requirements for submittal of technical documents concerning noise and a pre-construction ambient noise measurement program. The technical documents were reviewed and the monitoring by

David Baker, P.E.

BP's acoustical consultant was observed. The results of the review were presented to the Whatcom County commissioners.

- Provided acoustical engineering services for the design of the West Point Secondary Treatment Facilities in Seattle, Washington. This included work on the initial site selection through current efforts to evaluate noise during construction. Noise levels were measured at sensitive receptors near the plant. Estimates were made of the noise that would result from construction and operation activities. Noise mitigation measures were incorporated into the plant design. The results of the analyses were presented at public meetings. Expert testimony was provided in a contested case hearing.
- Evaluated the noise impacts from construction, commissioning, operation, and decommissioning of a proposed gas-to-liquids petroleum plant in Ras Laffan City, Qatar. The estimated noise levels were compared with local and World Bank noise standards to determine the extent of impacts and the need for mitigation.
- Assisted in the evaluation of noise impacts from the Walnut Energy Center constructed by the Turlock Irrigation District in California. This included computer modeling of the noise impacts from the natural gas-fired, combined cycle, combustion turbine facility. Field monitoring of a similar steam generator at a different site was conducted to determine its contribution to the overall noise level and the acoustical performance of its enclosure.
- Conducted noise analyses for approximately seven CalPeak peaker combustion turbine installations in California. The installations were all based on Pratt & Whitney twin turbine configurations. Activities included ambient monitoring, measurement of noise at a similar installation, modeling of construction and operation noise levels (including determination of necessary mitigation), drafting of the required permit applications, and negotiation with the lessors of the selected sites.
- Assisted in the evaluation of noise impacts from the Calpine Peaker Program in California. This program consisted of more than 10 General Electric LM6000 natural gas-fired combustion turbines operating in simple cycle. Noise source information was quantified based on data supplied by equipment manufacturers and from onsite noise measurements made at similar facilities. This information was used as input to a standardized computer model. This approach greatly expedited the noise analysis and permitting process.
- Evaluated the noise impacts from a proposed liquefied natural gas (LNG) facility and associated natural gas-fired, simple cycle, combustion turbine power plant in the Bahamas. Noise from the facility was demonstrated through modeling to comply with the applicable limits.
- Conducted a noise analysis for a gas turbine, combined cycle power plant in Seattle, Washington. Noise levels were measured to establish existing conditions. The major noise sources were identified and quantified. The effect of noise reduction provided by the power plant building and other planned noise control measures was calculated. The resultant noise level at the closest nearby receptor was estimated. This level was found to comply with the local noise regulations.

Curtis Basnett, G.E.

Senior Geotechnical Engineer

Education

M.C.E., University of Florida, 1988
B.S., Civil Engineering, University of Florida, 1987

Professional Registrations

Registered Professional Engineer: Florida, Georgia, California
Registered Professional Geotechnical Engineer: California

Distinguishing Qualifications

- More than 19 years of experience in a wide variety of geotechnical, geo-environmental, and materials engineering testing, design, construction, and design-build projects
- Geotechnical Operations Leader in CH2M HILL's Santa Ana office
- Knowledgeable and experienced in a wide variety of geotechnical software including UTEXAS 3.0, Slide, FB-Pier, Driven, Shaft, LPILE, and GRLWEAP
- Published and presented papers on Karst sinkhole delineation, desiccation of clay liner, and evaluation of pile capacity from in situ tests

Relevant Experience

Curt is a geotechnical engineer specialist in the southern California office who has been with the company for more than 19 years. His wide breadth of experience includes field and laboratory soil testing, field explorations, in situ soil testing and sampling, landfill siting and design, seismic evaluations, embankment and foundation design, and light civil design. He has served as a geotechnical design manager for projects involving energy facilities, embankment design for wastewater and spoil retention works; retaining/tie-back/MSE wall designs; slope stability evaluations for earthen dikes; embankments and fills; preloads; and deep and shallow foundation designs for energy facilities, port, harbor, water/wastewater, and highway projects.

Representative Projects

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California.

Mr. Basnett provided guidance and senior review for the geological resources section of the Application-for-Certification (AOC) for this facility. He also provided senior review of the geologic and foundation design criteria developed by CH2M HILL engineering staff that was included with the AOC.

Orlando CoGen Limited, L.P. CH2M HILL planned and conducted the geotechnical exploration for this 120-megawatt cogeneration unit in Florida. Unique challenge of this project included properly positioning facilities on a very compact site of 4 acres outside the influence zone of an active sink-hole. CH2M HILL mapped the location and size of the sink-hole, which included the use of ground penetrating radar and cone penetration testing.

Curtis Basnett, G.E.

Final geotechnical design report was enthusiastically received by the client, Air Products, Inc.

GenPower Anderson, Anderson, South Carolina. Mr. Basnett provided civil and geotechnical engineering design management for the proposed 640-megawatt, combined-cycle project in South Carolina. Mr. Basnett led the geotechnical related analyses and designs for the facility, which included deep and shallow foundations, pavement, earthwork, and retaining walls. He also assisted with permitting and prepared the final contract documents related to the civil design of this 146 acre site.

Vernon Power Plant, City of Vernon, California. Located near Los Angeles, California, CH2M HILL completed the preliminary geotechnical design investigation and report for this proposed 610-megawatt cogeneration facility in support for the application for certification (AFC) process to permit the facility. Mr. Basnett provided guidance and senior review of the geotechnical aspects of the project.

Payson Power, Payson, Utah. Mr. Basnett provided geotechnical design and construction support for this 145 megawatt combined cycle power plant. This included developing contract documents for the pile foundations including dynamic testing, surcharge specifications incorporating wick drains and drainage blanket, and geotechnical analyses including stiffness formulation for the pile foundations. Construction support included review of surcharge settlement monitoring for the proposed shallow foundation for the cooling tower facility.

Environmental Assessment, Confidential Client, Southern California. Served as field team leader and site safety coordinator for an environmental assessment involving a major power utility customer in Southern California. Responsibilities included assisting with the Phase 1 investigation, interpreting and organizing voluminous amounts of historical data and activities, coordinating and leading the field team through the Phase 2 subsurface environmental exploration of three electric power generating stations, and report writing.

Mr Basnett was the task and geotechnical design manager for the 35-square-mile Owens Lake dust mitigation project located in Owens Valley, California. With a projected construction cost exceeding \$60,000,000, Mr. Basnett is responsible for geotechnical elements of the project including developing and managing geotechnical budgets, field efforts, design, and preparation of contract documents. Significant challenges addressed by the geotechnical design team at Owens includes high compressibility of native soils; the presence of organic material; low strength, high moisture content and low dry density of native soils. It also included the presence of soluble Trona soils; highly erodible soil, extremely difficult access; highly corrosive conditions; unique unit weight of water (greater than that of seawater); and severe desiccation and moderate to highly expansive soils.

Evaluated the stability of a planned raw water intake lift station access deck located on a relatively steep slope (2 to 2.5H:1V) required as part of a planned reservoir in north Georgia. Analysis revealed potential instability along the overburden/bedrock interface. Therefore, decision was made to support the deck on piles rather than using gabion-supported backfill placed against the slope.

Loren Bloomberg, P.E.

Senior Transportation Engineer

Education

M.E., Civil Engineering, University of California, Berkeley, 1994

M.S., Civil Engineering, University of California, Berkeley, 1993

B.S., Systems Engineering, University of Virginia, 1989

Professional Registrations

Professional Engineer: California Traffic (2000; No. 2060)

Distinguishing Qualifications

- Experienced in practical and theoretical applications of traffic operations, particularly for freeways, arterials, and ramp metering
- Broad background in transportation planning, conceptual design, and transportation systems analysis
- Expert in traffic simulation modeling
- More than 15 years of experience, including transportation modeling and analysis for local areas, corridors, and entire regions

Relevant Experience

Mr. Bloomberg is an experienced traffic engineer and transportation planner who has led or played a key role in numerous large-scale planning and operations analyses. He has conducted studies and developed plans for local areas, corridors, and entire regions, including roadways, maritime facilities, and airports. Mr. Bloomberg's technical expertise is in simulation modeling and traffic operations, with a particular focus on conceptual engineering and traffic analysis. He is often called upon as a technical expert for CH2M HILL's modeling projects, and is known as a project manager for his ability to complete traffic analyses accurately, efficiently, and meeting client requirements.

Mr. Bloomberg is a member of the Highway Capacity Committee of the Transportation Research Board, the international group of 30 professionals charged with developing and maintaining the *Highway Capacity Manual*.

Representative Projects

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California. Traffic and Transportation Task Lead. Prepared the traffic and transportation analysis section of the AFC.

Task Lead, Eastshore Energy Center; Hayward, CA; 2006-2007. Traffic lead for the application for certification (AFC) for a new 115.5-megawatt (MW) intermediate/peaking load facility. Led the assessment of the traffic and transportation impacts associated with the construction and operation of the facility. Assessed traffic operations impacts, transport of

Loren Bloomberg, P.E.

hazardous materials and public safety. Developed strategic approach for the Transportation Management Plan, and represented the applicant (for transportation issues) at California Energy Commission meetings.

Project Engineer; Walnut Energy Center Traffic Control and Implementation Plan (TCIP); Turlock, California; 2004-2005. Developed the traffic control plan for the utility (potable and recycled water) lines for the Walnut Energy Center in Turlock, California. The TCIP addressed the mitigation of traffic impacts to the existing transportation facilities to satisfy the requirements of the California Energy Commission (CEC) Conditions of Certification.

Traffic Task Lead; San Francisco Energy Reliability Project; San Francisco, California; 2004-2005. Was the task lead for traffic for completing the traffic and transportation section of the Application for Certification (AFC), a process similar to an EIR. The project is an energy plant in San Francisco, and traffic impacts focused on the construction activities.

Traffic Control Task Lead; Metcalf Energy Center Offsite Utilities; San Jose, California; 2001-2002. Task lead for traffic control. As part of a fast-track, design-build effort to design and construct linear facilities (recycled water, sewer, and potable water) to support a new energy center, led the traffic control task for the project. Developed plans to support two pipeline alignments through 6 to 10 miles of urban streets. Worked with local agencies to develop a transportation management plan (TMP) to support agency requirements and maintain construction schedules.

Technical Lead, 91 Express Lanes Extension and State Route 241 (SR-241) Connector Feasibility Study, Orange County, California, 2007 to present. Overall CH2M HILL lead on this project to develop concepts for improving the system interchange at SR241 and SR91. Leading the work with the stakeholders in two counties and Caltrans districts to identify critical issues, an evaluation approach, and potential solutions. Leading the team developing conceptual alternatives, including HOV connectors, toll connectors, express lane extensions, and new alignments.

Project Manager; I-5/710 Alternatives Analysis; Commerce, California, 2005-2006 to. Guided CH2M HILL's efforts on this project to improve the preliminary design concepts for the I-710 corridor, as part of the pre-NEPA/CEQA planning. The overall purpose of the effort was to build consensus from project stakeholders by addressing two key technical issues: reducing right-of-way impacts and develop a better understanding of the traffic operations of the proposed solutions. Directed and participated in two separate teams (design and traffic) to accomplish these objectives. The design team reduced the residential property takes at the I-5/I-710 interchange and improved the functionality of the concepts. The traffic team analyzed the full I-710 corridor using the regional travel demand model and a focused operational analysis using the Synchro model.



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.

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



Resume

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.

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.



Resume

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.

1978 - 1998 Project Design Electrical Engineer

Project design engineer for various projects for Black & Veatch, both international and domestic. Projects include:

Gas Turbine Projects:

Kaeng Khoi, Thailand, 120 MW, 2-on-1

Khanom Thailand, 600 MW, 4-units, 2-on-1

Khon Kaen, Thailand 300 MW, 2-on-1

Bangrak, Thailand, 300 MW, 2-on-1

Bakersfield, California, 40 MW simple cycle

Coal Fired Projects

Map Ta Phut, Thailand, 230 MW co-generation

Stanton Energy Center 1, 400MW, Orlando, FL

Crystal River Units 4 & 5, 800MW, Crystal River, FL

Louisa Generating Station, 560MW, Muscatine, IA

Fayette Power Project Unit 1, 400MW, Austin, TX

Nuclear Projects

Pressurized Water Reactor (PWR), 1100 MW, Inola, Oklahoma



WorleyParsons

resources & energy

Steven A. Blue, P.E.

Senior Project Manager

Resume

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

Sophia Chiang

Project Biologist

Education

M.S., Environmental Science, California State University, Fullerton, 2004

B.S., Environmental Analysis & Design, University of California, Irvine, 1996

Professional Registrations

Endangered Species Act 10(a)(1)(A) recovery permit (TE-064359-1) for vernal pool branchiopods, Quino checkerspot butterfly, and coastal California gnatcatcher

California Department of Fish and Game Scientific Collecting Permit (SC-004717)

Federal Bird Marking and Salvage Permit (20431-BF), subpermittee

Endangered Species Act 10(a)(1)(A) recovery permit (TE-787376-9) subpermittee for southwestern willow flycatcher

Distinguishing Qualifications

- Expertise in conducting various surveys for threatened and endangered species
- Expertise in bird identification by sight and sound
- Experience in coordinating and conducting large-scale field efforts for transportation, energy, and water projects
- Experience in preparing a variety of environmental compliance documents and reports

Relevant Experience

Ms. Chiang is a project biologist in the Ecosystems Business Group in CH2M HILL's Southern California office. She has more than 10 years of experience conducting a variety of wildlife surveys throughout Southern California. She has conducted focused surveys for coastal California gnatcatcher, least Bell's vireo, Quino checkerspot butterfly, and burrowing owl; and she is a subpermittee for southwestern willow flycatcher. She has also managed brown-headed cowbird trapping and removal programs and conducted biological monitoring for various natural resources. She has experience with the following field techniques: radio telemetry, nest monitoring, mist netting, bird banding, raptor trapping and handling, mammal scent stations, mammal track identification, aerial surveys, and wetland delineations. Ms. Chiang has experience in preparation of biological resources reports and other environmental documents pursuant to California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Endangered Species Act (ESA), and Migratory Bird Treaty Act (MBTA).

Representative Projects

Biological Task Lead; Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California; June 2007-October 2007. Biological Task Lead for preparation of the Biology Section of an Application for Certification (AFC) for an energy-efficiency upgrade

Sophia Chiang

within the existing MMC Chula Vista Energy power station. Responsible for evaluating biological impacts pursuant to environmental regulations on city, county, state, and federal levels. AFC submitted to the California Energy Commission (CEC) in August 2007 and was certified in December 2007.

Project Biologist; Lompoc Wind Energy Project Environmental Impact Report; Lompoc, Santa Barbara County; California; September 2006 to September 2007. Conducted avian point counts, with a focus on wintering raptors. Prepared a technical report of findings and supported the preparation of the EIR for the development of a 120-megawatt (MW) wind energy electrical generation project on private ranch land in the Lompoc Valley. Public Draft released in July 2007; commercial operation expected in 2008.

Project Biologist; Bright Source Energy, Inc.; Ivanpah Solar Energy Generating Station; Eastern San Bernardino County, California, to Clark County, Nevada; August 2007 to Present. Assisted with rare plant surveys and habitat characterization within an approximately 3,400-acre site located in the eastern Mojave Desert, near the Nevada border, to the west of Ivanpah Dry Lake. Rare plant surveys focused on the following species: *Coryphantha chlorantha*, *Cynanchum utahense*, *Echinocactus polycephalus* var. *polycephalus*, *Ferocactus cylindraceus* var. *lecontei*, and *Opuntia parishii*. Fieldwork was conducted in support of a 400-MW solar energy power generation facility using heliostat fields to focus solar energy on power tower receivers.

Biological Task Lead; NRG Carlsbad Energy Center; City of Carlsbad, San Diego County, California; August 2007 to Present. Biological Task Lead for preparation of the Biology Section of an AFC for a 560-MW, combined-cycle project within the existing Cabrillo Energy Center power station. Responsible for evaluating biological impacts pursuant to environmental regulations on city, county, state, and federal levels. AFC submitted to the CEC in September 2007 and currently going through CEC AFC processing.

Project Biologist; Utah to Las Vegas, Nevada, Pipeline, Holly Energy; Utah and Nevada; April 2007 to Present. Collected biological data in support of the 404 permit and general environmental permitting requirements for the interstate pipeline project. Fieldwork included general wetland delineations and habitat surveys.

Task Lead and Project Biologist; State Route 79 Realignment Project; Riverside County, California; November 2004 to Present. Task Lead for the burrowing owl, golden eagle, nesting raptor, riparian bird, amphibian, and sensitive wildlife tasks. Conducted focused surveys for burrowing owl, golden eagle, nesting raptors, least Bell's vireo, and vernal pool branchiopods. Assisted with sensitive amphibian surveys, sensitive plant surveys, wetland delineations, southwestern willow flycatcher surveys, vegetation mapping, and general wildlife assessments for the approximately 15,000-acre project study area located in the Cities of Hemet, San Jacinto, and Winchester. Responsibilities associated with subconsultant management include survey coordination, invoice approval, and contract amendments. Reporting requirements include focused survey reports, Natural Environment Study, Multiple Species Habitat Conservation Plan Equivalency Analysis, and Environmental Impact Report/ Environmental Impact Statement (EIR/EIS).

MariaElena Conserva, Ph.D.

Environmental Planner

Education

School of Law (Boalt Hall), UC Berkeley, 2003 to 2004
Ph.D., Geography, UC Berkeley, 2003
M.A., Geography, UC Berkeley, 2000
B.A., Environmental Studies, UCLA, 1995

Relevant Experience

Dr. Conserva has a broad background in environmental science, planning, and law. Since coming to CH2M HILL, she has assisted in the preparation of EIRs, EISs, and various permitting projects. She has also conducted legal research for land use development projects. At CH2M HILL, she has specialized in visual impact analysis.

Representative Projects

Task Lead; Chula Vista Energy Upgrade Project; MMC Energy, San Diego County, California; June 2007 to August 2007. Prepared the visual impact analysis of a power plant for California Energy Commission Application for Certification (AFC). Analyzed visual impacts, prepared the draft chapter, and coordinated with GIS and image simulation specialists to produce accurate and compelling graphics.

Task Lead; Auwahi Wind Energy Project; Shellwind Energy; Maui, Hawaii; July 2008 to Present. Assisted with data collection, analysis, and the preparation of the EA for a wind energy project pursuant to Hawaii Revised Statutes (HRS) 343. Primary author of EA visual impact analysis.

Assistant Project Manager; Oakland Army Base Redevelopment; Port of Oakland; California; March 2008 to June 2008. Coordinated with technical specialists to pull together the Initial Study. Primary author of Change in Circumstance Analysis, which involved assimilating a large amount of technical and regulatory information and coordinating with specialists.

Task Lead; State Route 79 Realignment Project; Riverside County; California; August 2007 to August 2008. Primary author of the EIR/EIS Visual Impact Analysis for the State Route 79 Realignment Project. Coordinated with two other planners to pull the final document together. Analyzed four alternate routes of a proposed 12-mile freeway segment that crossed the County of Riverside, City of Hemet, and City of San Jacinto.

Co-Writer; Technical Report; New York Regional Interconnect; New York; July 2007 to January 2008. Co-authored detailed technical report on the impact of a controversial transmission corridor on tourism in upstate New York. Analyzed the effect of the 70-mile project on the tourist economy of the four counties it would cross, the impact on specific tourist destinations, and the impact on a proposed housing development.

Task Lead; Eastside Road Storage Project; Town of Windsor; Windsor, California; January 2008 to June 2008. Primary author of the EIR visual impact analysis and co-wrote

MariaElena Conserva, Ph.D.

the EIR biological impact analysis for a reclaimed wastewater storage facility project. Assembled information about visual and biological resources and analyzed potential impacts to them from the project construction and operation, wrote draft chapters, and developed chapter graphics.

Task Manager; Community Involvement Plan; Sulphur Bank Mercury Mine; Clearlake Oaks, California; March 2008 to June 2008. Prepared the Community Involvement Plan (CIP) newsletter for the EPA for the Sulphur Bank Mercury Mine Superfund Site. Wrote the text, developed graphics, and coordinated layout.

Task Manager; Community Involvement Plan; Frontier Fertilizer; Davis; California; March 2008 to April 2008. Prepared the Community Involvement Plan (CIP) newsletter for the EPA for the Frontier Fertilizer Superfund Site. Edited the text, developed graphics, and coordinated layout.



Summary of Experience

Mr. Darvin has specialized in the meteorological aspects of air quality issues for the last fifteen years. He has extensive experience in air quality management, dispersion modeling, meteorological modeling, monitoring, major source permitting, complex terrain model development and implementation, emission inventory and health risk assessments. Mr. Darvin also has extensive experience in air quality operational permits (Title V), especially for the oil and gas industry. His experience spans more than 25 different states and several countries.

He has been actively involved with recent PSD permits for many large-scale solid fuel and gaseous fuel projects across the United States. Mr. Darvin has performed the following in support of PSD applications for utilities: baseline air quality and air quality modeling analyses (including preparation and negotiation of the modeling protocol), prepared the PSD and air permit regulatory applicability analyses, managed the preparation of the air quality emissions inventory, and assisted with the Best Available Control Technology (BACT) evaluations.

Specific project experience includes emissions calculations, modeling of impacts, evaluation of regulatory applicability and compliance, New Source Review (NSR) and Prevention of Significant Deterioration (PSD) permitting, and minor source permitting. He has used and is thoroughly familiar with a number of air quality models, including AERMOD, ISC3, CALPUFF, CALMET, COMPLEX I AND II, IGM, FDM, RTDM, CTSCREEN, CTDMPLUS, UAM, DEGADIS, SPILLS, VISCSCREEN, PLUVUEII, MESOPUFF, INPUFF, BLP, PAL, CAMEO, CALINE4, OCD5, RAM, TRACE, MM5, SLAB, and the Paris Airshed Model. These models have been used in scientific and development settings as well as in regulatory settings.

Education

M.S. Atmospheric Science, San Francisco State University, 1993

B.A. Physical Geography/Meteorology, University of California, Santa Barbara, 1985.

Professional Affiliations

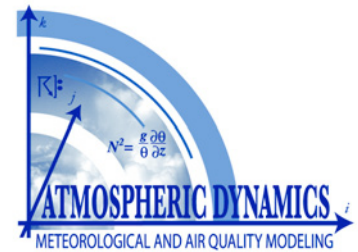
Air and Waste Management Association

American Meteorological Society

Select Project Experience

A representative selection of Mr. Darvin's projects is included below.

Carson Hydrogen Project AFC, BP and Edison Mission Energy (August 2006-Present). Air Quality Project Manager and lead modeler for preparation of the first hydrogen powered combined cycle power plant for 500 MW of generation. The project will gasify petroleum coke and remove the CO₂ for oilfield re-injection. The project will also include permitting the gasification process and will involve preparation of a PSD permit application, Class I modeling, and offsets.



Select Project Experience (continued)

Walnut Creek and Sun Valley Energy Project AFCs, Edison Mission Energy (August 2005 to Present). Air Quality Project Manager and lead air quality modeler for preparation of two simple cycle AFC's for over 1000 MW of generation in the South Coast Air Basin. Project includes permit negotiation, ERC/RECLAIM review, and preparation of visible cooling tower plume analyses.

Mountainview Power Plant – SCE (2005 to Present). Project Manager for preparing an air quality permit modification related to commissioning activities and plant startup/shutdown. The project includes preparing a CEMS certification protocol, siting a meteorological tower, and ongoing compliance and regulatory consulting.

Roseville Electric Project AFC, City of Roseville, Ca. (January 2003 to Present). Air Quality Project Manager for air quality analysis related to a proposed new 200 MW natural gas fired power plant. Analysis included evaluation of Class I impacts, visibility impacts, complex terrain, and cooling tower plume modeling.

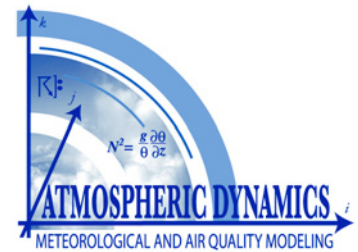
Pico Power Project AFC, City of Santa Clara. (January 2002 to November 2004). Air Quality Project Manager and lead air quality modeler for permitting a 180 MW power plant in the City of Santa Clara, Ca. Prepared and negotiated air quality permit with BAAQMD and prepared air section(s) of AFC for the California Energy Commission.

Russell City Energy Center AFC, Calpine (January 1999 to November 2002, September 2006-Present). Air Quality Project Manager for obtaining PSD permit and AFC for a large natural gas fired power plant, located near Hayward, Ca. Project required detailed emission calculations, air quality modeling, combined impact assessments, BACT analysis and demonstration, Title IV compliance, and Title V compliance issues.

Metcalf Energy Center AFC, Calpine. (1998 to 2003) Lead air quality modeler for modeling a large natural gas fired power plant, located near San Jose, Ca. Project included using refined modeling techniques to determine nitrogen deposition impacts, Class I analysis, and downwash analysis.

Otay Mesa Generating AFC, Calpine. (1999 to 2004). Lead Meteorologist for permitting a combined cycle power plant, located near San Diego, Ca. Project included Class I impacts, a nitrogen deposition impact assessment, and a downwash analysis in complex terrain. Modeling was used to prepare PSD permit application as well as the AFC application which was submitted to CEC.

East Altamont Energy Center AFC (2000-2002) Lead Meteorologist for permitting large power plant, located near Tracy, Ca. Project included meteorological data set assessments, criteria pollutant and toxics impacts analysis, and construction impact modeling. Modeling was used to prepare PSD permit application as well as the AFC application for submittal to the CEC.



Select Project Experience (continued)

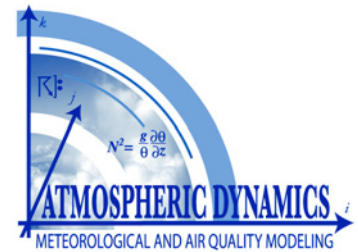
San Joaquin Energy Center AFC (2001-2002) Lead Meteorologist for permitting large power plant, located near the town of San Joaquin in the San Joaquin Valley. Project included preparing modeling assessments for toxics and criteria pollutants, meteorological data set assessments, construction impacts, and plume visibility assessments for the CEC and local air agency.

Prevention of Significant Deterioration (PSD) Permit Modification, Kettle Falls Generating Station, Avista Corporation, Kettle Falls Washington. Prepared a PSD application for modification to the Kettle Falls Generating Station, a wood-waste fired generating facility to address emission increases resulting from a capacity increase modification at the facility. Air quality modeling analyses were required to assess compliance with ambient air quality standards and PSD increments. A toxic air pollutant evaluation was also prepared.

PSD Permitting and EIS For 2000-MW Coal-Fired Power Plant, Sierra Pacific Resources, Nevada. Managed the preparation of a Prevention of Significant Deterioration (PSD) permit application for a 2000-megawatt coal-fired power plant in northeastern Nevada proposed by Sierra Pacific Resources. Evaluation of PSD increments involved extensive air quality modeling for regions with complex terrain. Detailed air quality analyses were performed to address complex issues including: long-range transport of pollutants and subsequent effects on acid deposition, effects of plant emissions on visibility in nearby and distant Class I areas, evaluation of pollutant buildup during stagnation conditions and its effect on visibility, dust emissions from the construction and operation of the power plant, and ambient air quality standards and PSD increments. As part of the state's permitting requirements, an evaluation of air toxics was performed.

PSD Permitting for Rinker Materials Cement Kiln in Brooksville, Florida. Mr. Darvin performed the baseline air quality and air quality modeling analyses, prepared the PSD and air permit regulatory applicability analyses, managed the preparation of the air quality emissions inventory and assisted with the Best Available Control Technology (BACT) evaluation. The project fuel sources included coal, oil, and natural gas.

Air Quality Permitting for an Ammonia/Urea Plant, Btu Nitrogen Company, Wallula, Washington. Prepared a Notice of Construction application for the proposed Btu Nitrogen Plant near Wallula, Washington which included a 600 ton per day ammonia plant and 1,000 ton per day urea fertilizer plant. The facility was to be located in a PM₁₀ nonattainment area. Air quality modeling was used to demonstrate compliance with PM₁₀ requirements and air quality standards for criteria and toxic air pollutants. Additionally, Best Available Control Technology analyses were prepared for both criteria and toxic air pollutants.



Select Project Experience (continued)

Power Generation Facility – 1250 MW Combined-Cycle, PSD Air Quality Permitting, Kootenai Generation LLC, Rathdrum, Idaho. Managed preparation of a PSD permit application for a proposed 1,250 MW gas-fired combined-cycle turbine power generation facility to be located in Rathdrum, Idaho. Evaluation of local and regional air quality impacts were assessed with the ISCST3 model and CTSCREEN model for impacts in complex terrain. Potential impacts on regional haze and acid deposition on distant federal Class I areas were evaluated with the CALPUFF modeling system. Other air quality evaluations required for the PSD permit application include evaluation of impacts from toxic air pollutants and evaluation of Best Available Control Technology (BACT).

Clean Fuels Refinery Modification, Chevron, Los Angeles, California. Lead air quality modeler for preparation of an Environmental Impact Report (EIR) and New Source Review permit for a large refinery modification in Los Angeles to support the Clean Fuels Program. Project also included toxic emissions calculations and preparation of a Health Risk Assessment.

Prevention of Significant Deterioration - Calpine Rocky Mountain Energy Center. Project manager for preparing PSD application for a 620 MW power plant, located near Hudson Colorado. Project required completion of a PSD permit application, air quality impact modeling analysis in both near and distant from the source, BACT demonstration, and assessment of Class I area impacts. Project was deemed complete by agency in less than 4 weeks.

Arctic Ocean Permitting, Arco Alaska. Task Leader and lead modeler for the first OCS permit ever submitted to the USEPA. Permit was for several off-shore oil exploration drilling platforms in the Arctic Ocean off Alaska. Project involved use of OCD to calculate impacts from exploratory drilling rig and support vessels. Impacts at ANWR were also assessed.

Mesoscale Complex Terrain Model Development, Italian Government and Alyeska. Developed a mesoscale complex terrain wind field model to determine impacts of topographically induced winds on a large man-made lake in the Italian Alps. This model has also been used to diagnose trajectories of potential oil spills in Alaskan waters.

Lead Dispersion and Deposition Study, ASARCO, Leadville, Colorado. Lead scientist for assessing potential deposition of lead from smelting operations over a 130-year period. Results of emissions calculations, modeling and deposition were used to develop a soils sampling program and subsequent cleanup criteria.

Douglas Davy, Ph.D. Project Manager

Education

Ph.D., Archaeology
M.A., Anthropology
B.A., Anthropology

Relevant Experience

Dr. Davy has 24 years of experience providing regulatory compliance and project management support for infrastructure development projects. He has served as project manager for numerous environmental licensing and permitting projects, directing multidisciplinary teams of planners, engineers, and scientists in helping to resolve complex environmental regulatory issues. Dr. Davy has served as project manager for 11 Applications for Certification (AFCs) before the California Energy Commission and has also worked on numerous CEQA and local permitting projects for energy infrastructure development. Dr. Davy has also prepared critical project development and permitting reviews for more than 15 prospective power plant development sites in California.

Representative Projects

Project Manager, Chula Vista Energy Upgrade Project, MMC Energy, Incorporated, San Diego County, California. Project manager for an AFC before the CEC for a 100-MW natural gas-fired power plant and appurtenant facilities. Coordinated a multidisciplinary team during the Discovery and Decision phases of licensing. Key analyses included analysis of noise and biological resource effects in an urban area adjacent to an open space and nature reserve area.

Project Manager, Walnut Creek Energy Park, Sun Valley Energy Center AFCs, Edison Mission Energy, City of Industry and Romoland, California. Project manager for AFCs before the CEC for two 500 MW natural gas-fired peaking power plants using GE Energy LMS100 technology. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing.

Project Manager, Inland Empire Energy Center, Calpine Corporation, Riverside, California. Project manager for AFC before the CEC for the 810-MW natural gas-fired power plant. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing. Managed preparation of license amendments, including conversion of the turbine technology to the GE Energy S107H System and for a rerouting of the natural gas pipeline. Coordinated consultations with CEC staff and other regulatory agencies.

Project Manager, Humboldt Bay Repowering Project AFC, Pacific Gas and Electric Company, Eureka, California. Project manager for AFC before the CEC for the 163-MW natural gas-fired power plant using 10 Wärtsilä 18V50DF dual-fuel turbine-generators. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing.

Douglas Davy, Ph.D.

Project Manager, Russell City Energy Center, Calpine/Bechtel Joint Development, Hayward, California. Project manager for the preparation of an AFC before the CEC for a 600-MW natural gas-fired power plant and appurtenant facilities including natural gas, water supply, and electrical transmission lines. Prepared environmental assessment associated with reconductoring 14 miles of 230 kV transmission line. Project qualified for an expedited 6-month licensing process under the Governor's emergency power plant licensing executive order. Also served as project manager for an amendment to the project license involving movement of the project configuration.

Project Manager, Roseville Energy Park, Roseville Electric, Roseville, California. Project manager for AFC before the CEC for a 160-MW natural gas-fired power plant. Directed a multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests. Participated in consultations with CEC staff and other regulatory agencies including the Placer County Air Pollution Control District and the U.S. Army Corps of Engineers (USACE).

Project Manager, Donald Von Raesfeld Power Plant/Pico Power Project, Silicon Valley Power, Santa Clara, California. Project manager for AFC before the CEC for a 123-MW natural gas-fired power plant. Directed a multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests, and providing expert testimony. Participated in consultations with CEC staff and other regulatory agencies. Project challenges included developing a mitigation plan for air emissions deposition effects on the Bay checkerspot butterfly, rezoning of the project site, negotiating Best Available Control Technology standards, and Federal Aviation Administration (FAA) air navigation hazard clearance.

Project Manager, Los Esteros Critical Energy Facility Phase 1 Relicense and Phase 2 Combined-Cycle Conversion, Calpine Corporation, San Jose, California. Project manager for AFC before the CEC that included relicensing a 180-MW simple-cycle power plant and a conversion to combined-cycle operation that would increase the nominal plant output to 320-MW.

Project Manager, Sutter Energy Center, Calpine Corporation, Sutter County, California. Project manager for an AFC before the CEC for a 600-MW natural gas-fired power plant and appurtenant facilities including 12 miles of natural gas and 4 miles of electrical transmission lines. Coordinated a multidisciplinary team during the Discovery and Decision phases of licensing. Key analyses included preparing water temperature and water quality models, identifying emission reduction credits, and assessing potential impacts along an electrical transmission route.

Clint Helton, M.A., RPA

Cultural Resources Specialist

Professional Registration

Registered Professional Archaeologist (No. 11280)

Education

M.A., Anthropology, Brigham Young University
B.A., Language and Literature, University of Utah

Distinguishing Qualifications

- Strong background in environmental impact evaluations, with particular expertise in conducting cultural resources studies in CA, CO, ID, NV, UT, WY
- 12 years of environmental management experience in the western U.S.
- Meets Secretary of Interior Professional Qualification Standards (36CFR61)
- Highly experienced managing cultural and paleontological resources studies for large linear transportation and utility projects to meet federal requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and standards of Federal Energy Regulatory Commission (FERC).

Relevant Experience

Mr. Helton has more than 12 years of environmental management experience in the United States. He has a strong background in environmental impact evaluations, having directed technical studies; negotiated with lead agencies, responsible agencies and clients; and has written, edited, and produced a substantial number of environmental review and technical documents. His knowledge of regulatory compliance and cultural and paleontological resources enables him to manage National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) compliance activities and document preparation. Mr. Helton is a particularly skilled practitioner of federal regulations governing treatment of cultural resources, especially Section 106 of NHPA (36CFR800) and the Native American Graves Protection and Repatriation Act (NAGPRA) (43CFR10). Mr. Helton has significant expertise conducting consultation with State and Federal agencies, as well as facilitating formal government-to-government consultation with Native American groups and tribes throughout the western U.S. Additionally, Mr. Helton has authored numerous environmental technical reports, cultural resources management plans, cultural resources studies, Programmatic Agreements, Memorandums of Understanding (MOU), and contributed to many NEPA documents for a variety of private and public sector clients. Mr. Helton is native-level bilingual in Spanish.

Representative Projects

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

Clint Helton, M.A., RPA

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.

Task Manager, Carlsbad Energy Center Project, San Diego County, CA (2007). Assisted with preparation of Application For Certification for California Energy Commission in support of this proposed power generation facility in San Diego County, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, Tierra, Eastshore Energy Center, CA. Assisted with preparation of Application for Certification for California Energy Commission in support of this proposed power generation facility in Hayward, California. Responsible for preparation of cultural resources component of project, including field surveys, report preparation, and conducting Native American consultation.

Task Manager, City of Vernon, Vernon Power Plant, CA. Assisted with preparation of Application For Certification for California Energy Commission in support of this proposed 800-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, Walnut Creek Energy Park Power Plant, CA. 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, CA. 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.

Deputy Project Manager, AES Pacific Inc., Highgrove Power Plant, CA. Co-managed preparation of environmental analysis component of Application For Certification for California Energy Commission in support of this proposed natural gas fired 300-MW peaking power generation facility in Riverside County, California. Responsible for preparation of cultural resources component of project, as well as an interdisciplinary team of environmental specialists including archaeologists, biologists, and paleontologists.

Task Manager, State Route 79 Realignment Project, Riverside County, CA. Task Lead, quality control manager, and overall management of cultural and paleontological resources studies for this 19-mile highway realignment project in Riverside County, California. Provide regulatory guidance, regional technical expertise in cultural resources and coordination of subconsultants. The inventory comprises over 7,100 acres in the vicinity of the cities of Hemet and San Jacinto. Frequent consultation and coordination with Riverside County Transportation Commission (RCTC) and Caltrans.

Laurel Karren

Environmental Scientist

Education

M.S., Agriculture, emphasis in watershed management, California State University, San Luis Obispo, 1998

B.A., English, University of California, Davis, 1988.

Distinguishing Qualifications

- Experience working on and authoring a number of environmental analysis reports for federal, state and local agencies
- Experience in sustainable natural resource planning, management, conservation management, and water resources planning

Relevant Experience

Ms. Karren has over 15 years of experience in sustainable natural resource planning, management, conservation management, and water resources planning. She has working knowledge of watershed management practices including, watershed protection, forest and range hydrology, and nonpoint source pollution and land use impacts to water quality in urban and rural settings, in conjunction with the U.S. Environmental Protection Agency. Her research includes developing short- and long-term management plans based upon sustainability, physical, economical, and politically appropriate resources. She has working knowledge of soil, vegetation, and wildlife sampling techniques in conjunction with restoration, erosion control, and conservation projects.

Ms. Karren is experienced in Environmental Documentation/Planning/Permitting and Erosion Control. In her planning capacity, Ms. Karren has prepared and been team member on a number of CEQA and NEPA documents, and has experience in federal, state, county and city permitting processes, including U.S. Forest Service Special Use Permit administration and implementation, Federal Clean Water Act Section 404 Permits, Federal Clean Water Act Section 401 Water Quality Certifications, California Fish and Game 1601 Streambed Alteration Agreements, California State Land Lease Encroachment Permits, California State Reclamation Board Permits and Federal Clean Water Act Section 402 Permits.

Representative Projects

Ms. Karren has conducted Water Resource analyses for a number of Energy Project Applications for Certification listed below.

- Chula Vista Energy Upgrade Project
- Eastshore Energy Center, Tierra, Hayward, California
- San Francisco Electric Reliability Project, San Francisco Public Utilities Commission, California

Laurel Karren

- Small Power Plant Exemption, MID Electric Generation Station (MEGS), Modesto Irrigation District, California.
- Walnut Energy Center, Turlock Irrigation District, California
- Fontana Energy Center, Calpine, Fontana, CA
- Humboldt Bay Repowering Project, PG&E, Humboldt, California
- Vernon Power Plant, City of Vernon, County of Los Angeles, California

Ms. Karren is a 24-hour Caltrans Certified Stormwater Pollution Prevention Plan (SWPPP) preparer and has written SWPPPs for the following Energy Project Applications for Certification:

- **Walnut Energy Center, Turlock Irrigation District.** Prepared Stormwater Pollution and Prevention Plan for this 250-MW combined-cycle generating facility.
- **San Francisco Electric Reliability Project (SFERP), City and County of San Francisco.** Prepared Stormwater Pollution and Prevention Plan for a 145-MW simple-cycle plant in the southeast section of San Francisco.
- **MID Electric Generation Station (MEGS), Modesto Irrigation District.** Prepared Stormwater Pollution and Prevention Plan for a nominal 95-MW natural-gas-fired, simple-cycle generating facility
- **Cosumnes Power Plant, SMUD.** Prepared Stormwater Pollution and Prevention Plan for a two-phase, 1,000-MW combined-cycle power plant on buffer lands for the former Rancho Seco Nuclear Plant.

Greta M. Kirschenbaum

Associate Planner

Education

Doctoral Student, UC Berkeley Graduate School of Education, Social and Cultural Studies
M.A., Education, 2004, University of California, Berkeley
M.A., Urban Planning, 1997, University of California, Los Angeles
B.A., Social Sciences, 1991, University of California, Berkeley

Professional Affiliations

American Planning Association
San Francisco Planning and Urban Research Association (SPUR)/Youth at SPUR
Architecture and Youth Collaborative

Relevant Experience

As an Associate Planner, Ms. Kirschenbaum, is experienced in preparing planning and environmental compliance documents. Her responsibilities include collaborating with project managers and sub-consultants to define project scope of work and prepare planning/environmental documents, including Master Plans, Environmental Impact Reports, Environmental Assessments, Community Involvement Plans, and Mitigation Plans

Representative Projects

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California. Land Use Task Lead. Prepared the land use analysis section of the AFC.

Chevron Richmond Refinery Power Plant Replacement Project. Land Use Task Lead. Prepared the land use analysis section of the AFC.

Caltrans Marin Sonoma Narrows EIS/EIR Response to Comments (Project Planner). Collaborating with client to produce Final EIR/EIS document. This involves crafting responses and working with client and internal staff to ensure timely completion of responses and overall document. Management of client responses and report production involves use of CH2M HILL *eComment* software.

Santa Clara Valley HCP/NCCP EIR (Project Planner). Writing several sections (including Hydrology, Land Use, Transportation, Recreation) of the EIR/EIS analyzing impacts of proposed HCP/NCCP for Santa Clara County. This involves research and writing as well as collaborating with Project Managers to strategize document approach.

Caltrans Norris Canyon Direct HOV Ramps PSR (Senior Environmental Specialist). Leading effort to prepare Preliminary Environmental Evaluation for proposed HOV project. This involves collaborating with CH2M Hill Resource specialists to define project alternatives, assess the types of environmental clearance and permits that will be required, and identify probable project mitigation. Preparation of mitigation cost estimates also will be required.

Greta M. Kirschenbaum

Caltrans East Washington Interchange Project ((Senior Environmental Specialist).

Worked with client and other CH2M Hill Staff to produce an IS/MND for a proposed interchange project in Sonoma County. This involved attending weekly meetings with client to strategize document approach and schedule, attending monthly PDT meetings with Caltrans multidisciplinary project team, and writing sections of the document.

Steve Long

Soils and Agriculture

Education

M.S., Soil Science

B.S., Forest Resources

Relevant Experience

With over 20 years of professional experience as an environmental scientist, Mr. Long is responsible for a wide range of tasks associated with natural resource and hydrogeologic environmental evaluations and permitting. Duties include permit planning, preparation, and consultation with resource agencies, as well as supervision of field data collection, interpretation, and report preparation for contaminant and environmental quality assessments. Has participated in numerous investigations and risk assessments for terrestrial, aquatic, and stormwater pathway impacts for Superfund and Department of Defense projects.

Hydrogeological investigations experience includes in-field testing of soil, soil gas and groundwater samples using portable gas chromatograph; in-situ aquifer permeability testing; and monitoring subsurface explorations and installations (monitoring wells, piezometers and vapor extraction systems). Remediation experience includes managing bioventing systems and supervising site clean-ups. Strong skills in environmental sampling and testing.

Natural resource experience includes evaluations of wetland, riparian, forest, and agricultural systems. Duties have included delineation and documentation of wetlands by federal and state criteria in California, Nevada, Washington, Connecticut, Massachusetts, New York, New Hampshire, and Maine; evaluation of project constraints and development of alternate strategies for local, state, and federal permitting. Strong skills in soil description and taxonomic classification, vegetation, and insects; permitting of wetland activities; and statistical data analyses.

Representative Projects

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California.

Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects. This documentation included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts.

Humboldt Bay Replacement Project, PG&E (October 2006 to present). Planned and executed the Phase II ESA using staff from a minority owned 'mentor-protégé' firm. Prepared the Phase II ESA cost proposal and work plan. Coordinated the field sampling activities and prepared the report. Met with client and regulator from the North Coast Regional Water Quality Board, where we garnered approval for our final recommended site investigation tasks to complete the Phase II ESA. Provided senior review for AFC section

Steve Long

that assessed potential impacts to soil and agricultural resources for the proposed power plant project.

South Bay Replacement Project, LS Power (March 2006 to present). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). Also prepared section for waste management that described demolition, construction, and operation waste streams. This documentation included summaries of applicable laws, ordinances, and regulations (LORS) and agencies contacts. It also included estimates of soil losses from wind and water erosion during construction and mitigation and management strategies.

Eastshore Energy Center, Tierra (2006). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from water erosion during construction, and agencies contacts.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California (2001 to present). Prepared Biological Resources Mitigation and Monitoring Plan (BRMIMP) for the Los Esteros Critical Energy Facility. Also documented the extent of jurisdictional waters of the U.S. at a stormwater outfall along Coyote Creek. Prepared a Low Effect Habitat Conservation Plan for the Phase II Facility. This plan was submitted for Section 10 consultation with the U.S. Fish and Wildlife Service to secure an incident take permit for Bay Checkerspot butterfly and to offset potential impacts to four endemic serpentine plants under the Endangered Species.

Application for Certification, East Altamont Energy Center, Calpine Corp., Tracy, California (2001 to 2002). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from wind and water erosion during construction, and agencies contacts. Additionally, conducted field investigations to assess wetlands in proximity to linear routes for the East Altamont Energy Center.

San Joaquin Valley Energy Center, Calpine Corp., City of San Joaquin, California (2001 to 2002). Prepared CEQA-equivalent documentation to support an Application for Certifications (AFC) for review by the California Energy Commission. Prepared AFC section that assessed potential impacts to soil and agricultural resources for the proposed power plant projects including all linear features (transmission lines, water supply and discharge lines, and natural gas supply lines). This documentation also included a summary of applicable laws, ordinances, and regulations (LORS), estimates of soil losses from water erosion during construction, and agencies contacts.

Sarah Madams

Waste Management / Hazardous Materials / Worker Health & Safety

Education

B.S., Environmental Toxicology

Relevant Experience

Ms. Madams has more than 9 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 4 years, Ms. Madams has served as the Deputy Project Manager for power plant licensing work performed by CH2M HILL. 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

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California. Waste Management and Hazardous Waste Task Lead. Prepared the waste management and hazardous waste analysis sections of the AFC.

Eastshore Energy Center, Tierra, Hayward, California (2006). Task coordinator for the AFC. Prepared the Waste Management and Hazardous Materials sections.

Confidential Southern California Power Project (2004 to present). Project Coordinator for the AFC for a 100-MW power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and served as liaison and coordinated efforts between CEC project management and staff.

Application for Certification, Los Esteros Critical Energy Facility, Calpine C*Power, San Jose, California (2002 to 2003). 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, San Francisco Electric Reliability Project, San Francisco Public Utilities Commission, California (2003 to present). Project Coordinator for the AFC for a 145-MW simple-cycle power plant. She reviewed applications, coordinated multidisciplinary data requests and responses, attended public workshops, and prepared a site investigation report for the process water route. Assisted in preparation of Hazardous

Sarah Madams

Materials and Hazardous Waste Sections for the AFC. In addition, she served as liaison and coordinated efforts between CEC project management and staff.

Small Power Plant Exemption, MID Electric Generation Station (MEGS), Modesto Irrigation District, California (2003). Project Coordinator for the SPPE for a 95-MW peaking plant. She reviewed applications, coordinated multidisciplinary data requests and responses, and served as liaison and coordinated efforts between CEC project management and staff.

Application for Certification, Walnut Energy Center, Turlock Irrigation District, California (2002 to 2003). 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.

Application for Certification, Salton Sea Unit 6 Geothermal Power Plant, Mid-American Energy Holding Company, Imperial County, California (2002 to 2004). 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 sections. In addition prepared Field Safety Instructions, Health and Safety Plans and served as the Site Safety Coordinator for the following power plant Applications for Certification:

- San Francisco Electric Reliability Project (2003 to present)
- Walnut Creek Energy Park (2005 to present)
- Sun Valley Energy Project (2005 to present)
- Confidential Southern California Power Project (2004 to present)

Air Quality Audits, SMUD, California (2004). 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.

Initial Study, August Substation, Turlock Irrigation District, California (2004). Managed the preparation of an Initial Study for the construction and operation of a proposed substation in Hilmar. The IS evaluated all environmental resources and identified mitigation for significant impacts. She also prepared the hazardous materials portion of the IS.

HARRY SCARBOROUGH

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Sr. Vice President of Business Development and Operations for MMC Energy, Inc. Promoted to this position within six months of joining the MMC team. Prior experience includes positions as Director of Operations and Maintenance (RENEWABLES) with Enron Wind Corp. Management and business development experience at the corporate, regional and plant level. Corporate and Site Level Management experience in Combined Cycle (Frame and Aero), Simple Cycle, and Wind Energy Facilities. Management responsibility for multi-site, multi-country operations. Responsible for overseeing international and domestic plant operations and maintenance with an emphasis in power plant rehabilitation, gas turbine overhauls, and performance monitoring programs. Extensive experience developing maintenance procedures, operation procedures, O&M budgets, water chemistry management programs, as well as participating in the mobilization process for an international project through the point of turnover to the operations phase. Served as a team member for the Calpine Operational Review for Excellence and Business Development teams. Assisted the Construction Project Manager throughout the construction of a 725 million dollar generation facility. Responsible for annual capital expenditure for improvements in excess of 10 million dollars per year.

EXPERIENCE

MMC Energy, Inc. – Bakersfield, CA

2006 to Present

Sr. Vice President – Business Development and Operations (Promoted from VP of Business Development) for an energy company in company engaged in the business of acquiring deep value power generation assets. Responsible for establishing a business strategy for the California region to include analyzing market conditions, contacting current owners to further discussion regarding plans to divest assets, and performing due diligence during advanced stages of bid proposals for Renewables and Fossil fired facilities. Additional responsibilities include leading a project development team through the stages of permitting (California Energy Commission or Conditional Use Permits) and working with the owner's engineer and EPC contractor in the planning, development, and execution of the construction plan.

Calpine- Pastoria Energy Facility –Lebec, California

2001 to 2006

General Manager for a 750MW combined cycle power plant utilizing the GE FR 7FA in a 2X1 plus 1X1 power block configuration. Managing a staff of thirty-two personnel in the operations and maintenance of the physical plant and ZLD (zero liquid discharge) to include daily report reviews, performance trending, budget management (12.5 Million), maintenance accomplishment rates, coordinated training & environmental compliance. Specific responsibilities include:

- Administer the power sales, gas, and water contracts
- Recruitment and hiring of O&M personnel.
- Provide O&M cost estimates for Business Development.
- Participate in Business Development and Due Diligence efforts for future acquisitions.
- Prepare reports for interfacing and executive departments.
- Report monthly variances to O&M budget.
- Develop strategies to improve site availability.
- Oversee commissioning of turbines and projects during mobilization phase.
- Interface with power purchasers (public utility) for all technical and fiscal matters.

ENRON WIND CORPORATION

1998 to 2001

Director of Operations and Maintenance for Enron Wind Corporation, a leading developer in wind field power projects. Oversee ten plant managers in the daily operation and maintenance of 600 MW of installed capacity, to include daily report reviews, performance trending, budget management, maintenance accomplishment rates, coordinated training, and environmental compliance. Specific responsibilities include:

- Administer the contractual obligations for all US facilities.
- Recruitment and hiring of O&M personnel.
- Provide O&M cost estimates for Business Development.
- Provide field input for design of NGT (Next Generation Turbine).
- Prepare reports for interfacing and executive departments.
- Report monthly variances to O&M budget.
- Promoted from Midwest Regional Manager to Director of U.S. Operations

GE POWER SYSTEMS / STEWART AND STEVENSON

1996-1998

International Regional Manager for GE Power Systems /Stewart and Stevenson Operations Inc.

GE Power Systems is subsidiary of General Electric with investments in domestic and international power projects as operator and equity partner. GE Power Systems acquired Stewart and Stevenson Operations Inc in Dec 1997.

P&L responsibility for Operations revenue and expense at international power projects in Australia, United Arab Emirates, India, and China. Assist in the development of a Regional Operations Office in Perth and the establishment of policies and procedures for Maintenance and Operations of cogeneration plants utilizing GE Industrial (Frame) as well as aero derivative engines. Reported to the Vice President of U.S. and International Operations.

- Promoted to International Regional Manager from Plant Manager, Golden Bear Refinery Cogeneration Plant.
- Successfully managed a portfolio of Eastern Hemisphere generating assets with a total capacity of 550MW.
- Coordinated operational startup functions, staffed facilities, and trained operators.
- Assigned and coordinated operators, systems, and procedures in support of commissioning and turnover.
- Assumed commercial acceptance.
- Supervised three area country managers and ten plant managers in the production of independent power generated through aero derivative and frame gas turbines.
- Arranged power deliveries to foreign host utilities.
- Assisted Business Development and Turbine Sales group with O&M cost estimates and Long Term Service Agreements (LTSA) for major maintenance requirements
- Maintained average plant availability in excess of 98.5%.
- Increased productivity, plant efficiency, and morale through implementation of participative management techniques in a culturally challenging work environment.

Stewart and Stevenson Operations Inc., Oildale Cogeneration-Refinery

1995 to 1996

Plant Manager

P&L responsibility for Operator (4.5 Million) budget revenue and expenses at fifty-megawatt cogeneration facility utilizing the LM 5000 gas turbine.

- Restored a non-competitive (**in receivership**) facility to record peak season availability in excess of ninety-nine percent through a conscientious planned management change and two million dollar plant refurbishment. Efforts resulted in plant sale and financial closing of project in record time for project owners (Chemical Bank/Ark Energy)
- Established an environmental, health, and safety program and achieved an out-standing compliance record.
- Integrated a CMMS program (GPMATE) to coordinate all maintenance activities and work orders. Wrote operating procedures for startup and shutdown.
- Established an in house Feed Water Quality Program resulting in dramatic improvement in maintaining the HP and IP boilers in prescribed range.
- Prepared an audit system to assign specific plant components to the staff, monitor progress, and ultimately bring the plant's material condition back to peak condition.

LFC POWER SYSTEMS

1993 to 1995

Plant Manager

P&L responsibility (as Operator and Equity Partner) for a twenty-five megawatt combined cycle facility. Responsible for a 2.5 million dollar budget.

- Established record availability and revenue for the plant, maintaining an overall availability of the ninety-five percent and peak season availability of ninety-nine point six.
- Negotiated and procured a lease contract for installation and operation of a reverse osmosis water treatment system. The project eliminated the need for a costly demin system, while greatly enhancing the plant reliability.
- Completed the overhaul of a 3.5 MW Corpus Murray steam turbine (Condensing)
- Directed the writing of Operation and Maintenance procedures.
- Instituted a valve maintenance program.
- Reduced scheduled down time by approximately thirty percent through coordination of maintenance activities
- Revised fuel gas system to allow for shutdown of gas compressors and operation on floating pipeline pressure thereby reducing parasitic load and increasing reliability.

UNITED STATES NAVY**1973 to 1993****Naval Engineering Officer - 1981 to 1993**

Engineer Officer assigned to gas turbine propelled ships in the Pacific Fleet. Assignments include lead officer for the inspections of all surface ship propulsion plants in the Pacific Fleet. Due Diligence of surface platforms included mechanical & electrical inspections of turbines & controls, review of training records, operating reports, compliance with directives.

Navy Enlisted Engineering - 1973 to 1981

Hands on engineer assigned to operate nuclear, conventional steam, and gas turbine powered propulsion platforms. Specific experience in the operations and maintenance of 600 and 400 psi superheated and non-superheated boilers (D and M types), Worthington centrifugal feed pumps, DA systems, Curtis & Rateau steam turbines and overhaul of this equipment.

EDUCATION

National University, San Diego, CA	1978 / 1981
Bachelors Business Administration	
Chapman University, Orange CA	1985 / 1987
Master of Science, Mgmt	
Chapman University, Orange, CA	1986 / 1987
Master of Arts, Education and Training	
Navy Gas Turbine School for Engineering Officers	1990
Navy Nuclear Power School	1974

American Association of Physical Plant Administrators- Certified Plant Engineer

Central California Association of Power Producers – Past Chairman- CCAPP was organized and chartered to assist in the lobbying efforts for California Independent Power Producers.

W. Geoffrey Spaulding

Paleontological Resources Specialist/Senior Scientist

Education

Ph.D., Geology (Paleobiology), University of Arizona, 1981

M. S., Geology (Palynology & Vertebrate Paleobiology), University of Arizona, 1974

B. A., Anthropology, University of Arizona, 1972

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

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California.

Conducted the literature review and records search for this project, evaluated the local geology from the point of view of paleontological resources sensitivity, assessed potential impacts and developed mitigation measures consistent with Society of Vertebrate Paleontology guidelines.

California Energy Commission Approved Paleontological Resources Specialist, Multiple Power Generation Projects, California. Conduct literature reviews, records searches, and field surveys to develop Paleontological Resources Assessments, prepare paleontological

W. Geoffrey Spaulding

resources impact evaluations and mitigation measures for projects' Application for Certification before the California Energy Commission. Determine the relative levels of paleontological sensitivity of Mesozoic through Quaternary rock units in the context of the geological history of the project areas, direct field surveys, and prepare resource specific documentation for more than 20 separate projects from San Diego in the south to Arcata in the north. Prepare Paleontological Resources Monitoring and Mitigation Plans for construction-phase compliance activities.

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.

Ivanpah Valley Solar Energy Generation Station 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.

Duke Energy of North America, Paleontological Support Services for the Potrero and Contra Costa Applications For Certification. Conduct literature reviews, record searches, and site surveys; and prepare appropriate sections of Applications for Certification according to the format and data requirements of the California Energy Commission. Respond to CEC staff questions and requests for additional data. Provide cost-control strategies to client. In support of the relicensing efforts for two power plants in the Bay Area of California.

Client Task Oversight & Expert Witness Testimony on Paleontological Resources Sensitivity. Review and develop discovery and mitigation plans, and provide testimony to the Attorney General of the State of Washington. On the paleontological data potential and impacts to Middle Tertiary age fossil resources in the Columbia Basin, and on potential project-related impacts pursuant to Washington's Energy Facility Siting & Environmental Certification process, on behalf of Olympic Pipeline Corporation.

Fatuma Yusuf

Economics/Socioeconomics

Education

Ph.D., Agricultural Economics, Washington State University
M.S., Statistics, Washington State University
M.A., Agricultural Economics, Washington State University
B.S., Range Management, University of Nairobi, Kenya

Relevant Experience

Dr. Yusuf is an economist and statistician. She has conducted economic analyses for energy, water quality, agriculture, transportation, recreation, and water projects; evaluated project feasibility; and assessed economic impacts associated with project implementation. She has experience in preparing the socioeconomic analysis for power plant permitting and other environmental documents, regional economic impact analysis, cost-benefit analysis, and rate impact analysis. She also has experience in the development of statistical predictive models for condition assessments involving pipeline deterioration and factors leading to pipeline deterioration.

Representative Projects

Chula Vista Energy Upgrade Project, MMC Energy; San Diego County, California. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification, Eastshore Energy Project, Hayward, CA. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification, South Bay Replacement Project, Chula Vista, CA. Socioeconomics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Application for Certification for a number of energy projects including the San Francisco Electric Reliability Project in San Francisco, CA, and the Walnut Energy Facility in Turlock, CA. Economics Task Lead. Prepared the socioeconomic analysis section of the AFC. Also, analyzed the regional economic impacts of the project on employment and income.

Economic Analysis for the Calpine LNG Facility and Power Plant in Eureka, CA. Project Manager. Provided screening-level economic, socioeconomic and fiscal impact analyses of the construction and operation associated with the Calpine LNG and Power Plant Projects in Eureka, CA.

Socioeconomic Study Plan for the SMUD Upper American River Project Iowa Hill Pumped Storage Development Project. Socioeconomic Task Lead. Prepared the socioeconomic study plan and evaluated the socioeconomic impacts associated with the Iowa Hill Pumped Storage Development Project as part of the SMUD Upper American

Fatuma Yusuf

River Project Hydroelectric relicensing application. Also, analyzed the regional economic impacts of the project on employment and income.

Revision of SMUD Upper American River Project Socioeconomic Impact Study Report. Socioeconomic Task Lead. Prepared Revision 1 of the SMUD UARP Socioeconomic Impact Study Report on the SMUD Upper American River Project Hydroelectric relicensing. Revision 1 involved the verification of the study conducted by CSUS. Also, analyzed the regional economic impacts of the project on employment and income.

Agricultural Impact Study of the PacifiCorp's Hydroelectric Power Project. Analyzed the socioeconomic and regional economic impacts associated with the increased energy costs faced by Klamath irrigators. Prepared the regional economic impact report.

Industrial Siting Application for a number of energy projects in Wyoming including the Medicine Bow Coal to Liquid Project, Wygen III Unit 5, Seven Mile Hill and Glenrock Wind Energy Projects. Analyzed the regional economic impacts of the projects on employment and income.

Lower Colorado River Authority (LCRA)-San Antonio Water System (SAWS) Water Project (LSWP). Regional Economics Task Lead. Ongoing project. The project aims to develop strategies that would conserve and develop water in the lower Colorado River basin for both regions (LCRA and San Antonio). Strategies include: reducing agricultural irrigation water demand, capturing and storing unused and excess river flows in off-channel storage facilities, and developing groundwater for limited use in agriculture when surface water isn't available. Task is to evaluate the economic impacts associated with changes brought about by the project to satisfy the required legislative finding that the water transfer will protect and benefit the economic well-being of the lower Colorado River watershed and the LCRA water service area. Economic analysis tools to be used include: benefit-cost analysis, input-output analysis, sector analysis, socioeconomic analysis, recreation benefit analysis, and net environmental benefit analysis.

SR 79 Realignment Project Community Impact Assessment (CIA) and EIR/EIS. Economics/Environmental Justice Task Lead. Prepared the socioeconomic and environmental justice analysis sections of the Draft CIA and EIR/EIS for the SR 79 Realignment Project Domenigoni Parkway to Gilman Springs Road.

Upper Yuba River Study Project Economic Analysis. Economics Task Lead. Prepared the Technical Memorandum on identifying the possible economic impacts from the re-introduction of Chinook salmon and steelhead trout into the Upper Yuba River system.

Natural Resources Liability and Asset Management (NRLAM). Economics task lead. Calculated the human use and ecological service value associated with the natural resource holdings of number of Air Force Bases under the Air Mobility Command (AMC). Primary goal of the valuation was to provide a strategy by which the Bases can use the valuation results to assist in prioritizing and accomplishing its environmental and natural resource goals and mission objectives (e.g., resolving a pending or potential issue with an environmental component). The bases included McChord AFB, Beale AFB, and Fairchild AFB.

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

**APPLICATION FOR CERTIFICATION FOR
THE CHULA VISTA ENERGY UPGRADE
PROJECT**

DOCKET NO. 07-AFC-4

**PROOF OF SERVICE
(Revised 7/14/08)**

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

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 07-AFC-4
1516 Ninth Street, MS-14
Sacramento, CA 95814-5512
docket@energy.state.ca.us

Harry Scarborough Vice President MMC Energy Inc. 11002 Ainswick Drive Bakersfield, CA 93311 hscarborough@mmcenergy.com	Douglas M. Davy, Ph.D. Senior Project Manager CH2M Hill 2485 Natomas Park Drive, Suite 600 Sacramento, CA 95833 ddavy@ch2m.com
Steven Blue Project Manager Worley Parsons 2330 E. Bidwell, Suite 150 Folsom, CA 95630 steven.blue@worleyparsons.com	Jane Luckhardt, Esq. Downey Brand LLP 555 Capitol Mall, 10th Floor Sacramento, CA 95814 jluckhardt@downeybrand.com
California ISO P.O. Box 639014 Folsom, CA 95763-9014 e-recipient@caiso.com	

California Unions for Reliable Energy (CURE) c/o Marc D. Joseph Gloria Smith Suma Peesapati Adams, Broadwell, Joseph & Cardozo 601 Gateway Blvd., Suite 1000 South San Francisco, CA 94080 mdjoseph@adamsbroadwell.com gsmith@adamsbroadwell.com speesapati@adamsbroadwell.com	City of Chula Vista, California c/o Charles H. Pomeroy Caren J. Dawson McKenna, Long & Aldridge, LLP 444 South Flower Street Los Angeles, CA 90071 cpomeroy@mckennalong.com cdawson@mckennalong.com
Environmental Health Coalition Diane Takvorian & Leo Miras 401 Mile of Cars Way, Suite 310 National City, CA 91950 DianeT@environmentalhealth.org LeoM@environmentalhealth.org	
<u>ENERGY COMMISSION</u> Jackalyne Pfannenstiel, Chair Presiding Committee Member jpfannen@energy.state.ca.us James D. Boyd, Vice Chair Associate Committee Member jboyd@energy.state.ca.us Raoul Renaud Hearing Officer rrenaud@energy.state.ca.us	Chris Meyer Project Manager cmeyer@energy.state.ca.us Kevin Bell Staff Counsel kbell@energy.state.ca.us Public Adviser's Office pao@energy.state.ca.us


DECLARATION OF SERVICE

I, Lois Navarrot, declare that on September 10, 2008, I deposited copies of the attached **MMC's Testimony and Witness Resumes for the Evidentiary Hearing** in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

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

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

A handwritten signature in dark ink, appearing to read "Lois Navarrot", is written over a horizontal line.

Lois Navarrot