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<b>DOCKET</b>	
<b>01-AFC-21</b>	
DATE	AUG 29 2003
REC'D	AUG 29 2003

August 29, 2003

Ms. Theresa Epps  
Dockets Unit  
California Energy Commission  
1516 9<sup>th</sup> Street  
Sacramento, CA 95814

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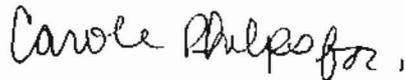
OFFICES ALSO IN  
GLENDALE, CA

**RE: The Tesla Power Project (01-AFC-21)**

Dear Ms. Epps:

Enclosed for filing with the California Energy Commission are one original and 12 (Twelve) copies of the **Applicant's Testimony for the Tesla Power Project (01-AFC-21)**.

Sincerely,



Scott A. Galati  
on behalf of  
Midway Power, LLC

SAG/cp  
Enclosures

. Admin\Tesla\Dockets\Cover 08-29-03

STATE OF CALIFORNIA

State Energy Resources  
Conservation and Development Commission

In the Matter of:

Docket No. 01-AFC-21

Application for Certification for the  
Tesla Power Project  
By Midway Power LLC

PROOF OF SERVICE

I, Carole Phelps, declare that on August 29, 2003, I deposited copies of the attached Applicant's Testimony for the Tesla Power Project with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

I have sent the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION  
DOCKET UNIT, MS-4  
ATTN: Docket No. 01-AFC-21  
1516 Ninth Street  
Sacramento, CA 95814-5512

\*\*\*\*\*

I have also sent individual copies to:

APPLICANT

Midway Power, LLC.  
Attn: Derrel A. Grant, Jr.  
Attn: Scott Busa  
700 Universe Blvd.  
Juno Beach, FL. 33408-2683

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San Joaquin Valley APCD  
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Californians for Renewable Energy  
(CARE)  
Attn: Michael Boyd  
5439 Soquel Drive  
Soquel, CA 95073

INTERESTED AGENCIES

Central Valley Regional Water Quality  
Control Board  
Attn: Ann Olson  
3443 Routier Road, Suite A  
Sacramento, CA 95827

OTHER INTERESTED PARTIES

Bay Area Air Quality Management District  
Attn: Dennis Jang  
939 Ellis Street  
San Francisco, CA 94109

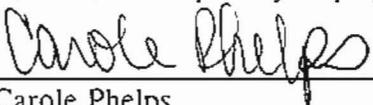
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Agency, Planning Department  
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399 Elmhurst Street, Room 136  
Hayward, CA 94544

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2485 Natomas Park Drive, Suite 600  
Sacramento, CA 95833-2937

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

  
\_\_\_\_\_  
Carole Phelps

**TESLA POWER PROJECT (01-AFC-21)  
TESTIMONY OF APPLICANTS  
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**TOPIC: PROJECT PURPOSE AND DESCRIPTION**

**WITNESSES: SCOTT BUSA, DUANE MCCLOUD**

## PROJECT PURPOSE AND DESCRIPTION

I. Name: Scott A. Busa and Duane McCloud

II. Purpose:

Our testimony addresses the Project Purpose and Description associated with the construction and operation of the Tesla Power Project.

III. Qualifications:

**Scott A. Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Executive Summary, Project Objectives and Need, and Facility Description and Location sections of the AFC and reviewed all of the compliance measures summarized in AFC LORS Table 6.1-1 (Summary of LORS and Compliance). A detailed description of my qualifications is contained in the attached resume.

**Duane McCloud:** I have worked for FPL Energy for over five years and am presently a Project Manager in their Construction and Engineering Division supporting the development of new power plant projects. I have a BS in Chemical Engineering and over 21 years of experience in the power generation industry including the areas of technical service, operations, design, project management, and project development. I have been involved with the development of the Tesla project from its initial conception, development, and through the entire CEC process to date.

I prepared portions of the Project Description section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with the Hazardous Materials, Facility Design, Reliability and Efficiency. A detailed description of my qualifications is contained in the attached resume.

#### IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, Application for Certification, Sections 1, 2 and 3 ,Appendices A-F

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

#### V. Project Description

The Tesla Power Project (TPP) will be a nominally rated 1,120 megawatts (MW), combined Cycle power plant with "four" natural gas-fired turbine generators using heat recovery steam generators (HRSG), providing steam for "two" steam turbine generators. Midway Power, LLC, a wholly owned subsidiary of FPL Energy, is project applicant.

The site for the proposed TPP is located 0.5 miles north of the PG&E Tesla transmission substation, located on the northern portion of a 60-acre site, in Alameda County.

Associated equipment for the proposed project would include emission control systems necessary to meet the proposed emission limits. NOx emissions will be controlled using a combination of low NOx combustors in the CTGs and selective catalytic reduction (SCR) systems in the HRSGs. A carbon monoxide catalyst would be installed in the HRSGs to limit CO emissions from the CTGs. Other major components of the project will include water treatment, hazardous waste storage area, cooling towers, containment area, fire water supply, and switchyard. Generator out-puts from all six units will be connected to step-up transformers and the plant switchyard. The power generation facility includes a parking area, administration building, control and maintenance buildings, and a storm water runoff pond.

The power plant turbines will operate on natural gas as a fuel source. The natural gas will be delivered to the power plant via a new 2.8-mile supply line. The gas supply will be provided by the PG&E backbone pipeline south of the intersection of I-205 and Patterson Pass Road, in San Joaquin County.

About 0.8 miles of 230 kV electrical conductors consisting of two single circuits will be installed from the new generation equipment to the existing

PG&E Tesla substation. Some Tesla substation conductors will require relocation. The Tesla-Ravenswood 230 kV line will have to be relocated within and adjacent to the substation and the Tesla-Newark 230 kV line will require re-terminating.

The project will be located within the service area of Alameda County Flood Control and Water Conservation District ("Zone 7"). The water will be provided via an exchange agreement with the Rosedale-Rio Bravo Water Storage District (Rosedale) and Buena Vista Water Storage District (BV) in order to provide water for this project. Rosedale and BV will provide Zone 7 with an exchange of State Water Project water to which Rosedale and BV are entitled in an amount equivalent to an annual supply of 5,900 acre-feet. Zone 7 will deliver the water via a new turnout facility constructed on the California Aqueduct along Midway Road and a new 1.7-mile pipeline. The plan requires that no additional annual diversion into the California Aqueduct will occur and no state water project entitlements will be transferred.

The project as proposed will have two separate wastewater collection systems. First is a plant wastewater system that collects all of the power plant's equipment wastewater including the cooling towers, plant drains and heat recovery steam generator water discharge. The second is the sanitary system that collects wastewater from sinks, toilets, and other sanitary facilities, this is discharged into an on-site septic system. The sanitary system is based on gravity flow but may include lift stations if required when final designs are complete.

The plant equipment wastewater will be sent to a ZLD system. This system consists of a vapor compression evaporator that concentrates the plant wastewater and recovers low TDS distillate for reuse as makeup water. Any remaining distillate is reused as makeup water for the cooling tower.

The construction work is expected to take a total of 23 months and is expected to have a peak manning level of about 974 workers for approximately 2 months, with an average of 485 construction workers. The project is expected to have between 600 and 700 million dollars in capital expenditures. While Midway Power, LLC expected to begin construction in summer of 2003, due to substantial delays in permitting the project and market demand, it is difficult to estimate the actual start date of construction and commercial operation.

When the proposed project is completed, it is estimated that approximately 36 staff will be permanently employed at the site.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
Scott A. Busa – Project Purpose and  
Description**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Project Purpose and Description for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on August 26, 2003.

  
\_\_\_\_\_



## Appendix A

### Resume of Scott A. Busa

FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

***Tesla Power Project*** – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

***Altamont Pass Wind Generation Optimization Projects*** – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

***Rio Linda / Elverta Power Project*** – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

***Mergers and Acquisition Due Diligence*** – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

***Environmental Auditing*** – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

***Clean Air Act*** – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NOx, SO2, CO2, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

## Appendix A

### Resume of Duane McCloud

FPL Energy – Project Manager

#### EXPERIENCE SUMMARY

Mr. McCloud has over 21 years of experience in all aspects of power generation. He has held positions of increasing responsibility in the areas of technical services, operations, project design, and project management of power generating facilities of a variety of technologies, including coal fired, gas fired, and geothermal. Mr. McCloud has been employed by FPL Energy for over five years in a variety of project management and engineering positions focused on operations support and corporate expansion. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Manager in the Construction and Engineering Division at FPL Energy, Mr. McCloud is responsible for piecing together the technical aspects of power generation development for projects throughout the US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy growth plans. His previous work, with CalEnergy and American Electric Power, has included engineering manager for new plant design, plant operations management, and project management for sites in California, throughout the United States, and in Asia. He has significant experience and background in the specific areas of water treatment and controls systems.

#### EDUCATION

B.S.Ch.E, Chemical Engineering, University of Akron, 1982.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Engineering/Management (1997 - Present)**

***Tesla Power Project*** – Project Engineer providing technical support of the development logistics and site selection, and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 1120 MW power plant in east Alameda County.

***Rio Linda / Elverta Power Project*** – Project Engineer for the technical support of the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead due diligence role and major contribution to the construction development for a 500 MW power plant near Blythe, CA. Has played an

integral role in coordination of Owner's home office support functions for this project in the construction phase.

***Project Development Technical Support*** – Lead project engineering role for support of over 7000 MW in project development throughout US, including site evaluation, contract development support, and umbilical development for projects in California, Arizona, Nevada, Colorado, New York, and North Carolina,

***Mergers and Acquisition Due Diligence*** – Technical leader for asset definition and evaluation for projects located throughout the United States, including opportunities in coal, oil, gas, geothermal, and hydroelectric technologies. Evaluations of over 10,000 MW in generation have included operating projects, projects under construction, and projects previously developed by others.

**Kiewit/CalEnergy/Magma Power - Project Management; Plant Engineer/ Plant Management (1990 – 1997)**

***CalEnergy, Ben Holt Company (now Kiewit-Bibb California) – Engineering Project Manager*** – Administrative, technical, and project lead for all engineering and design efforts for the Patuha geothermal project in Java, Indonesia as part of a Joint Venture partnership for a programmatic development.

***CalEnergy, Ben Holt Company – Assistant Project Manager*** – Technical project lead for all engineering and design efforts for the Dieng Unit 1 geothermal project in Java, Indonesia.

***Magma Power Company – Assistant Plant Manager Vulcan/Hoch*** – Plant management, including operations administration, maintenance coordination, cost control, and project direction for two geothermal power facilities near Calipatria, California.

***Magma Power Company – Plant Engineer*** – Lead technical role, including equipment performance evaluation, control systems improvements, and maintenance planning for the Hoch geothermal power facility near Calipatria, California.

**American Electric Power Service Corporation - Project Engineer (1982 - 1990)**

***Project Engineer, Zimmer Conversion*** – System responsibility for all water treatment, cooling, and laboratory systems for the conversion of a 98% complete nuclear facility to a 1300 MW coal-fired supercritical power plant in southwest Ohio.

***Project Engineer, Operating Plant Support*** – Corporate level oversight and responsibility for compliance, audits, capital improvements, and operations guidelines for all chemical systems, including makeup water treatment, ultrapure water treatment, wastewater treatment, coal sampling, laboratory systems, chemical feed and storage systems, chemical cleaning systems, and cooling water systems for a total of nine power facilities located in Ohio, Indiana, West Virginia, and Virginia.

**TOPIC: FACILITY DESIGN – POWER PLANT  
RELIABILITY AND EFFICIENCY**

**WITNESSES: ZORAN RAUSAVLJEVICH,  
DUANE MCCLOUD**

## FACILITY DESIGN, RELIABILITY and EFFICIENCY

I. Name: Zoran Rausavljevich and Duane McCloud

II. Purpose:

Our testimony addresses the AFC sections related to Facility Design, Reliability and Efficiency associated with the construction and proposed operation of the Tesla Power Project

III. Qualifications:

**Duane McCloud:** I have worked for FPL Energy for over five years and am presently a Project Manager in their Construction and Engineering Division supporting the development of new power plant projects. I have a BS in Chemical Engineering and over 21 years of experience in the power generation industry including the areas of technical service, operations, design, project management, and project development. I have been involved with the development of the Tesla project from its initial conception, development, and through the entire CEC process to date.

I prepared portions of the Project Description section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with the Facility Design, Reliability and Efficiency. A detailed description of my qualifications is contained in the attached resume.

**Zoran Rausavljevich:** I have been employed by Fluor Corporation for 30 years of which the last six I have worked for Duke/Fluor Daniel where I am a Project Manager. As a graduate Mechanical Engineer I have held positions of increasing responsibilities in the areas of engineering and design on a variety of the energy related projects including combined cycle power generation facilities, commercial application of fuel cells, oil and gas processing facilities; and others. I am familiar with all phases of the CEC's power plant siting process and I have previously testified before the Commission on behalf of an applicant for the High Desert Power Project. A more detailed description of my qualifications is contained in the attached resume.

On the Tesla Project I have been responsible for preliminary engineering and design activities during the AFC's preparation and through the entire CEC's process to date. I prepared the AFC sections related to the Facility Design, Reliability and Efficiency, and the post-filing responses for Data Adequacy and Discovery phases, including supplemental filings as described in Exhibits of this testimony.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Section 1; Sections 3.1 through 3.5 and Sections 3.7 through 3.12; Sections 4.1 through 4.5; and Section 6
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 111, 139 through 174, and 239 through 253
- Exhibit 4, Responses to Second Set of CEC Data Requests, Response Numbers 260 and 268.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusions regarding project facilities described in the following Final Staff Assessment sections: Facilities Design, Power Plant Efficiency, Power Plant Reliability, and General Conditions Including Compliance Monitoring and Facility Closure Plan. We agree that the Tesla Power Project will not result in significant environmental impacts and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

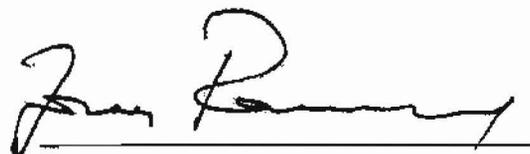
Application for Certification for the  
Tesla Power Project

**DECLARATION OF ZORAN  
RAUSAVLJEVICH – Facility Design,  
Reliability and Efficiency**

I, Zoran Rausavljevich, declare as follows:

1. I am presently employed by Fluor Corporation where I have been assigned to Duke/Fluor Daniel, as a Project Manager.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Facility Design, Reliability and Efficiency for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Aliso Viejo, CA on August 19, 2003.



Zoran Rausavljevich



## Appendix A

### Resume of Zoran Rausavljevic Duke/Fluor Daniel - Project Manager

#### EXPERIENCE SUMMARY

Mr. Rausavljevic's professional career includes 34 years of diversified technical and project management experience directly related to the engineering and design of power generation plants, and oil and gas processing facilities. He has been with Fluor Corporation for 30 years of which the last six have been with Duke/Fluor Daniel (D/FD). As a Project Manager in D/FD, Mr. Rausavljevic has been responsible for conducting and managing multidisciplinary engineering activities associated with the preparation of permit applications for power plant siting and environmental impact assessments. His project management experience also includes the projects for renewable energy (fuel cell and geothermal), design of a nuclear waste processing facility for DOE, technical and cost feasibility studies, and acquisition due diligence. Prior to moving into Project Management, Mr. Rausavljevic held a position of the Supervisor in Mechanical Engineering Department. He has significant experience in the design area of process heat transfer equipment, including waste heat recovery steam generators (HRSGs), cooling towers and steam condensers.

#### EDUCATION

Business Management Program, UCLA, 1984  
B.S.M.E, Mechanical Engineering, University of Belgrade, 1966.

#### SIGNIFICANT EXPERIENCE

##### Fluor - Project Management (1992 - Present)

Project Manager assigned to D/FD with responsibility for preliminary engineering in support of the development of new power plant projects and preparation of Application for Certifications (AFC) for submission to the California Energy Commission, CA for the following projects:

- *Tesla Power Project, a 1120 MW combined cycle facility proposed by FPL Energy for Alameda County, California.*
- *Colusa Power Plant Project, a 500 MW combined cycle facility proposed (but withdrawn) by Reliant Energy for Colusa County, California.*
- *Rio Linda/Elverta Power Project, a 560 MW power plant proposed (but withdrawn) by FPL Energy for Sacramento, California.*
- *High Desert Power Project, a 720 MW combined cycle facility licensed by CEC and built by Constellation Power in Victorville, California.*
- *Western MSCC Power Project, a 500 MW combined cycle facility licensed by CEC and proposed by Edison Mission Energy for western Kern County, California.*

***AES Southland Expansion Projects at Redondo Beach, Los Alamitos and Huntington Beach generating stations.*** Project Manager for feasibility studies and preliminary engineering to replace the existing power generation steam units with combined cycle power plants.

***Fuel Cell Commercialization Program for FuelCell Energy, Inc.*** Project Manager with responsibility for home office engineering activities for development of a commercial version of the 3 MW Direct Fuel Cell power plant.

Project Manager for Fluor's Advance Technology Division and Power Generation business units from 1992 to 1997 with responsibility for the following projects:

***Molten Metal Technology Demonstration Plant for DOE.*** Engineering Manager with responsibility for a conceptual design of the MMT's Catalytic Extraction Process Facility proposed for the treatment of nuclear hazardous waste.

***Kalina Cycle Demonstration Plant Project for GE/SMUD.*** Project Engineer responsible for the design and cost estimate of shell and tube heat exchangers proposed for bottoming cycle of the Kalina Cycle Demonstration Plant.

***Hanford Waste Vitrification Project for DOE.*** Area/Account Manager responsible for design of the third and fourth floor of the Vitrification Building proposed to process nuclear hazardous waste.

#### **Fluor - Mechanical Engineering (1973 - 1992)**

Supervisor of Heat Transfer Engineering from 1981 to 1992. In this capacity, the major responsibilities included development and maintenance of design standards for heat transfer equipment; staff training and project staffing; and employees' career counseling. From 1973 to 1981 held positions of increasing responsibility in the areas of heat exchanger design and as a lead mechanical engineer. The major projects included: Midland Cogeneration Venture - a conversion of CMS Energy's unfinished nuclear power plant into a gas fired 1385 MW cogeneration facility in Midland, Michigan; Lisburne Facilities Project - an oil and gas production facility for ARCO in Prudhoe Bay, Alaska; refinery expansion projects for Pertamina, Texaco, Unocal, Exxon, and Lagoven; a grass-root petrochemical complex for Saudi Petrochemical Company; and an oil from coal complex for Sasol Ltd. in South Africa.

#### **Ralph M. Parsons Co. (1969 - 1973)**

As a Mechanical Engineer responsible for the design and procurement of process heat transfer equipment used in the oil and gas processing facilities. The activities included writing narrative specifications, preparing requests for quotations, analyzing bids and selecting vendors, preparing purchase requests, reviewing drawings, and following up on fabrication and inspection requirements.

## Appendix A

### Resume of Duane McCloud

FPL Energy – Project Manager

#### EXPERIENCE SUMMARY

Mr. McCloud has over 21 years of experience in all aspects of power generation. He has held positions of increasing responsibility in the areas of technical services, operations, project design, and project management of power generating facilities of a variety of technologies, including coal fired, gas fired, and geothermal. Mr. McCloud has been employed by FPL Energy for over five years in a variety of project management and engineering positions focused on operations support and corporate expansion. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Manager in the Construction and Engineering Division at FPL Energy, Mr. McCloud is responsible for piecing together the technical aspects of power generation development for projects throughout the US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy growth plans. His previous work, with CalEnergy and American Electric Power, has included engineering manager for new plant design, plant operations management, and project management for sites in California, throughout the United States, and in Asia. He has significant experience and background in the specific areas of water treatment and controls systems.

#### EDUCATION

B.S.Ch.E, Chemical Engineering, University of Akron, 1982.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Engineering/Management (1997 - Present)**

***Tesla Power Project*** – Project Engineer providing technical support of the development logistics and site selection, and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 1120 MW power plant in east Alameda County.

***Rio Linda / Elverta Power Project*** – Project Engineer for the technical support of the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead due diligence role and major contribution to the construction development for a 500 MW power plant near Blythe, CA. Has played an integral role in coordination of Owner's home office support functions for this project in the construction phase.

***Project Development Technical Support*** – Lead project engineering role for support of over 7000 MW in project development throughout US, including site evaluation, contract development support, and umbilical development for projects in California, Arizona, Nevada, Colorado, New York, and North Carolina,

***Mergers and Acquisition Due Diligence*** – Technical leader for asset definition and evaluation for projects located throughout the United States, including opportunities in coal, oil, gas, geothermal, and hydroelectric technologies. Evaluations of over 10,000 MW in generation have included operating projects, projects under construction, and projects previously developed by others.

**Kiewit/CalEnergy/Magma Power - Project Management; Plant Engineer/ Plant Management (1990 – 1997)**

***CalEnergy, Ben Holt Company (now Kiewit-Bibb California) – Engineering Project Manager*** – Administrative, technical, and project lead for all engineering and design efforts for the Patuha geothermal project in Java, Indonesia as part of a Joint Venture partnership for a programmatic development.

***CalEnergy, Ben Holt Company – Assistant Project Manager*** – Technical project lead for all engineering and design efforts for the Dieng Unit 1 geothermal project in Java, Indonesia.

***Magma Power Company – Assistant Plant Manager Vulcan/Hoch*** – Plant management, including operations administration, maintenance coordination, cost control, and project direction for two geothermal power facilities near Calipatria, California.

***Magma Power Company – Plant Engineer*** – Lead technical role, including equipment performance evaluation, control systems improvements, and maintenance planning for the Hoch geothermal power facility near Calipatria, California.

**American Electric Power Service Corporation - Project Engineer (1982 - 1990)**

***Project Engineer, Zimmer Conversion*** – System responsibility for all water treatment, cooling, and laboratory systems for the conversion of a 98% complete nuclear facility to a 1300 MW coal-fired supercritical power plant in southwest Ohio.

***Project Engineer, Operating Plant Support*** – Corporate level oversight and responsibility for compliance, audits, capital improvements, and operations guidelines for all chemical systems, including makeup water treatment, ultrapure water treatment, wastewater treatment, coal sampling, laboratory systems, chemical feed and storage systems, chemical cleaning systems, and cooling water systems for a total of nine power facilities located in Ohio, Indiana, West Virginia, and Virginia.

**TOPIC: TRANSMISSION SYSTEM ENGINEERING**

**WITNESSES: STEVE MAVIS**

## TRANSMISSION SYSTEM ENGINEERING

I. Name: Steven E. Mavis

II. Purpose:

My testimony addresses the Transmission System Engineering associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for FPL Energy for the past 1 year and nine months as a Transmission Manager. I received a Bachelor of Science in Electrical and Computer Engineering degree from the University of Wisconsin in 1976 and over 27 years of experience in the transmission planning and operating areas of the electric power industry. As the Regional Transmission Manager of the California ISO between 1997 and 2001, planning engineers under my supervision prepared written and oral testimony before the California Energy Commission related to new generation project proposals.

I prepared portions of the Transmission Facilities section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Transmission Facilities. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 3.6 and Appendix I
- Exhibit 2, Responses to CEC Data Adequacy Requests TRANS-1 through TRANS-5.
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 113 through 116.
- Exhibit 7, System Impact/Facilities Study, 11/1/2001
- Exhibit 8, Supplemental System Impact Study, 5/10/2002
- Exhibit 9, Supplemental System Impact Study, 6/20/2002
- Exhibit 10, Supplemental System Impact Study, 8/30/2002
- Exhibit 11, Supplemental System Impact Study, 10/4/2002
- Exhibit 12, Supplemental System Impact Study, 12/6/2002

- Exhibit 13, Cal-ISO Final Interconnection Approval Letter

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusions regarding Transmission System Engineering. I agree that the Tesla Power Project assures conformance with NERC/WECC, NERC and Cal-ISO planning standards and reliability criteria.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

**DOCKET NO. 01-AFC-21**

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
STEVEN E. MAVIS**

I, Steven E. Mavis, declare as follows:

1. I am presently employed by FPL Energy, as a Transmission Manager.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Transmission Facilities for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on June 2, 2003.

  
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## Appendix A

### Resume of Steven E. Mavis

FPL Energy – Transmission Manager

#### EXPERIENCE SUMMARY

Mr. Mavis has over 27 years of experience in the electric power industry, primarily in the areas of transmission planning and operations. Over the years, Mr. Mavis has been involved in conceptual planning studies, various technical analyses, and regional reliability and regulatory compliance issues related to major transmission projects and assessments. Mr. Mavis has also contributed to the development of policies, standards, criteria, and procedures related to the planning and operation of the transmission grid in national and regional forums. Currently, Mr. Mavis is responsible for managing all transmission-related activities associated with interconnecting and delivering power from new, acquired or upgraded generation projects to the transmission grid.

#### EDUCATION

B.S., Electrical and Computer Engineering, University of Wisconsin at Madison, 1976

#### REPRESENTATIVE TRANSMISSION PLANNING EXPERIENCE

2 years - FPL Energy

Juno Beach, FL

2001 – 2003 Transmission Manager

**Job Description:** manage all transmission-related activities related to interconnecting and delivering power from new, acquired or upgraded generation projects to the transmission grid. Activities include performing screening studies; submitting interconnection requests and data packages; reviewing results of interconnection and transmission service studies; ensuring compliance with local reliability and interconnection processes; negotiating study plans, and interconnection, construction and power purchase agreements with transmission owners; performing operational analyses in support of FPLE's assets.

**Key Activities and Responsibilities Included:**

- Supported successful completion of 9 thermal and wind generation projects in the Northeast and Western US.
- Provided technical support to market, commercial and operating assessments.
- Supported FPLE interests in regional ISO planning and operating forums.

4 years – California Independent System Operator

Folsom, CA

1997 – 2001 Regional Transmission Manager

**Job Description:** manage the development of competitive assessments, strategies and policies associated with the planning, utilization and operation of the California ISO grid.

**Key Activities and Responsibilities Included:**

- Developed Reliability Must-Run (RMR) generation assessment process.
- Managed long-term RMR assessments.
- Managed long-term transmission expansion and reliability assessments.

- Provided support to policy, contract and RFP development.
- Chaired WSCC Reliability Subcommittee (2001).
- NERC Planning Standards Subcommittee member
- SWRTA Planning Committee member.
- Chaired WSCC Technical Studies Subcommittee (1999-2000).
- Managed 6 planning engineers.

**16 years – Southern California Edison Company**

**Rosemead, CA**

**1996 – 1997 Manager, Project/Product 2**

**1995 – 1996 Planning Supervisor**

**Job Description:** manage transmission project plan of service, rating and reliability studies; provide direction and make strategic decisions regarding transmission policy and criteria; represent the company in regional reliability forums and regulatory bodies.

**Key Activities and Responsibilities Included:**

- Managed transmission expansion and reliability assessments.
- Managed RMR assessment.
- Provided testimony on proposed shutdown of San Onofre Nuclear Generation Plant.
- Bonneville Power Administration's Blue Ribbon Panel member.
- Chaired WSCC Underfrequency Issues Work Group (1997).
- Vice-Chaired WSCC Technical Studies Subcommittee (1997-1998).
- WSCC Reliability Subcommittee member.
- Managed 5 planning engineers.

**1992 – 1995 Senior Planning Engineer 1**

**Job Description:** lead on transmission project plan of service, rating and reliability studies; support management in formulating transmission policy and criteria; represent the company in regional reliability forums and regulatory bodies.

**Key Activities and Responsibilities Included:**

- Performed studies for the Devers-Palo Verde #2 500 kV Line Project.
- Performed studies for Arizona-California Transfer Path Upgrade Project.
- Performed rating studies for West of the Colorado River (WOR) Transmission Path.
- Evaluated technical viability of San Onofre Nuclear Generation Plant shutdown.

**1988 – 1992 Senior Operating Engineer 2**

**Job Description:** lead on performing operating studies; formulate operating guidelines and criteria; develop procedures for the Energy Control Center to ensure safe and reliable operation of the transmission system.

**Key Activities and Responsibilities Included:**

- Developed the first Southern California Import Transmission (SCIT) Nomogram.
- Performed studies for the LA Basin Generation Operability Evaluation.

- Developed new and revised System Operating Bulletins.
- Chaired the West of the Colorado River (WOR) Study Group.

### **1985 – 1988 Senior Planning Engineer 2**

**Job Description:** lead on transmission project plan of service, rating and reliability (power flow and stability) studies; support management in formulating transmission policy and criteria; represent the company in regional reliability forums and regulatory bodies.

#### **Key Activities and Responsibilities Included:**

- Developed quarterly California-Arizona Simultaneous Import (CASI) Nomograms.
- Performed studies for the System Operability Assessment.
- Performed studies for the Big Creek Hydro Expansion Project.
- Led the Right of Way Held for Future Use Assessment.
- WSCC Reliability Subcommittee member.
- WSCC Pacific and Southwest Transfer Capability (PAST) Subcommittee member.

### **1982 – 1985 Planning Engineer 1**

**Job Description:** perform power flow and dynamic stability studies of the transmission system; perform economic evaluations of transmission expansion and upgrade proposals; assist in formulating planning policy and criteria; monitor and evaluate electric system reliability performance.

#### **Key Activities and Responsibilities Included:**

- Simulated the December 22, 1982 Disturbance to calibrate stability models and data.
- Performed studies for the Back-to-Back DC Tie Project.
- Performed studies for the California Power Pool (CPP) Voltage Collapse Assessment.
- Chaired the CPP Transmission Studies Task Group.
- WSCC System Review Work Group (SRWG) member.

2.5 years – ENERSUL

Campo Grande, MS Brazil

### **1979 – 1981 Planning Supervisor**

**Job Description:** supervise short and long-term transmission planning studies; assess new and non-conventional technologies and simulation tools for application on the electric system.

#### **Key Activities and Responsibilities Included:**

- Supervised preparation of 5-year transmission expansion plans for annual plant expenditure programs directed to Brazilian federal agencies and the World Bank.
- Evaluated application of SVC equipment to mitigate voltage collapse.
- Reviewed attributes of National Grid's probabilistic power flow program.

**TOPIC: TRANSMISSION LINE SAFETY  
AND NUISANCE**

**WITNESSES: DWIGHT MUDRY**

## TRANSMISSION LINE SAFETY AND NUISANCE

I. Name: Dwight R. Mudry, Ph.D.

II. Purpose:

My testimony addresses the Transmission Line Safety and Nuisance issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Transmission Line Safety and Nuisance section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Transmission Line Safety and Nuisance. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following document submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 4.2

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant impacts associated with Transmission Line Safety and Nuisance and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
DWIGHT R. MUDRY

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Transmission Line Safety and Nuisance for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.



Dwight R. Mudry

## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

**Modesto Irrigation District, Power Plant EIR** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

**Northern California Power Agency, Environmental Assessments for Five Power Plants** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

**Corn Products Corporation, Coal Fired Cogeneration Project EIR** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

**Los Angeles Harbor Department, Environmental Impact Report** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

**Rio Linda Water District, Initial Study and Negative Declaration** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

**Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

**Government of Nepal, Hydroelectric Project Environmental Assessment** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

#### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

**TOPIC: GEOLOGICAL/PALEONTOLOGICAL  
RESOURCES**

**WITNESSES: TOM STEWART, DAVID DIRKIN**

## GEOLOGICAL RESOURCES AND PALEONTOLOGICAL RESOURCES

I. Name: David Dirkin and Tom Stewart

II. Purpose:

Our testimony addresses the Geological Resources and Paleontological Resources associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**David Dirkin:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 5 years and I am presently a geologist with that organization. I have a B.Sc. Degree in Geology and I have 8 years of experience in geophysical surveys, drilling operations, groundwater well installations and abandonment's, groundwater sampling programs and environmental site assessments, and preparation of documentation and reports for CEQA and NEPA compliance.

I prepared the Geological Resources and Hazards section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Geologic Resources and Hazards. A detailed description of my qualifications is contained in the attached resume.

**Tom Stewart :** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 13 years and I am presently a Consulting Scientist with that organization. I have a Ph.D Degree in Geography and I have 20 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, and mitigation and monitoring relative to paleontologic resources. I have provided testimony before the California Energy Commission (CEC) on one previous case: Russell City Energy Center.

I prepared the Paleontological Resources section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Paleontological Resources. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Sections 5.5 and 5.17, Appendices G and O
- Exhibit 2, Responses to CEC Data Adequacy Request No. PALEO-1.
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 86 through 92.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant geological resources or paleontological resources impacts and will comply with all applicable laws, ordinances, regulations and standards.

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DAVID DIRKIN-Geological  
Resources**

I, David Dirkin, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Geologist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Geological Resources and Hazards for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.



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STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
TOM STEWART

I, Tom Stewart, declare as follows:

6. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
7. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
8. I prepared the attached testimony relating to Paleontological Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
9. It is my professional opinion that the attached prepared testimony is valid 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 Santa Ana, CA on August 26, 2003.

  
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## Appendix A

### Resume of David Dirkin

Tetra Tech FW, Inc. – Geologist

#### EXPERIENCE SUMMARY

Mr. Dirkin has 8 years of experience in site characterization studies, soil and groundwater contamination trend analysis, and the preparation of CEQA and NEPA compliant geological assessments to support data adequacy requirements for the California Energy Commission AFC process for proposed power plants. He has successfully managed a variety of projects that include geophysical surveys, drilling operations, groundwater well installations and abandonment's, groundwater sampling programs and environmental site assessments, preparation of various energy permitting elements for CEQA and NEPA compliance.

#### EDUCATION

BS / Geology / UCLA / 1995

#### REPRESENTATIVE PROJECT EXPERIENCE

***SWDIV, Remedial Action Contract, MCB Camp Pendleton, Site Assessment and Remedial Action; 10/98 – Present*** – Project geologist for several Contract Task Orders for multiple former gasoline and diesel underground storage tank sites regulated by the San Diego RWQCB and Department of Environmental Health. Activities include performing additional site characterization activities, which require the collection of soil and groundwater samples to evaluate the effectiveness and feasibility of potential remedial alternatives, conducting quarterly groundwater sampling using standard and low-flow sampling techniques in accordance with San Diego Site Assessment and Mitigation Manual (2002), and overseeing the removal of TPH-impacted soils via excavation to support site closure. Responsibilities included the preparation of quarterly and annual groundwater monitoring reports, interim-remedial action work plans and reports, and site closure reports.

***Santa Ana Unified School District, Regulatory Management and Site Assessment, Santa Ana, CA; Project Manager; 01/98 - Present*** - Project manager responsible for the regulatory management and assessment of soil and groundwater impacts associated with an existing school site. Activities include the interaction/negotiation with the DTSC (Cal EPA) under both the RCRA Corrective Action and the Site Mitigation, Preliminary Endangerment Assessment process, the preparation of numerous work plans and reports to support various site assessment activities involving the collection of soil, soil vapor, and groundwater samples, implementation of a quarterly and semi-annual groundwater sampling program to evaluate potential remedial alternatives.

***Various Merchant Power Plants Application for Certification, Ca; Section Author, 04/99 –Present*** – Authored several geologic and agricultural and soils sections for application for certification to be submitted to the California Energy Commission, which required CEQA and NEPA compliance. Task required a technical knowledge regarding collection, interpretation and implications of geologic information, specifically geologic

hazards, and the potential impacts to power plants and associated pipeline design. In addition, responsible for preparing site evaluations with respect to the Alquist-Priolo Earthquake Fault Zoning Act.

***Pacific Gas and Electric: North Baja Natural Gas Pipeline, Southern California and Western Arizona; Geological Task Manager;*** Authored geological resource section to comply with NEPA, CEQA, and FERC data adequacy requirements for Certificate of Public Convenience and Necessity for the North Baja Pipeline. The section described the existing geological resources in the vicinity of the pipeline route and compressor station to assess the potential impacts to these resources resulting from construction and operation of the pipeline. Task required a technical knowledge regarding the collection, interpretation and implications of geologic information, specifically geologic hazards and the potential impacts to pipeline design.

***Naval Weapons Station Seal Beach, Non-Time Critical Removal Action for Installation restoration Site 1, Seal Beach, CA;*** Navy Southwest Division; Installation Restoration (IR) Site 1, Naval Weapons Station (WPNSTA); Seal Beach, CA; Contractor quality control representative, responsible for the implementation of the Remedial Action Work Plan for the remediation of soils contaminated with PCBs, dieldrin, and metals. The remediation involved the excavation and off-site disposal of approximately 35,000 tons of impacted soils. Activities included stockpile sampling, waste characterization, verification sampling, surveying to ensure compliance with the workplan's remedial objectives, and assistance in closeout report write-up.

***Operating Industries Inc.; Environmental Site Assessments, Various, Project Manager/Environmental Assessor-*** Project manager for conducting environmental site assessments (ESA) for various properties throughout Los Angeles County. Scope requires and awareness and familiarity of environmental issues that can be present in various industrial and commercial settings. Completion of each ESA involved a site inspection, research and review of environmental agency databases, review and interpretation of aerial photographs and report generation.

***Operating Industries Inc.; Environmental and Geo-technical Investigation, Various, Field Supervisor;*** Supervised drilling operations for the collection of environmental and geo-technical samples to be used to screen potential borrow sites for the Oil landfill in Monterey Park, CA. Provided health and safety oversight for all field personnel and assured environmental compliance in regards to methodology used in the collection, storage and transportation of samples.

## Appendix A

### Resume of Tom Stewart

Tetra Tech FW, Inc. – Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Stewart is a Consulting Scientist who has been responsible for numerous environmental projects and technical tasks particularly with respect to paleontology, geomorphology, sedimentology, Quaternary stratigraphy, and geology. Prior to entering the environmental consulting field he was an academic researcher, Lecturer, and Assistant Professor in geology, geomorphology, Quaternary stratigraphy, sedimentology, and paleoenvironmental studies. He has several publications in refereed scientific journals addressing fossils and paleoenvironments.

#### EDUCATION

PhD, Geography, University of Alberta  
MS, Geography, University of Alberta  
BA, Geography, University of California, Davis

#### REPRESENTATIVE PROJECT EXPERIENCE

**Pico Power Project, Silicon Valley Power** - Responsible for preparing paleontology section for of the California Energy Commission Application for Certification for the proposed Pico Power Project in Santa Clara, Santa Clara County.

**King City Energy Center, Calpine Corporation** - Responsible for preparing paleontology section for of the California Energy Commission Application for Certification for the King City Energy Center in King City, Monterey County.

**Gilroy Energy Center, Calpine Corporation** - Responsible for preparing paleontology section for of the California Energy Commission Application for Certification for the Gilroy Energy Center in Gilroy, Santa Clara County.

**Russell City Energy Project, Calpine-Bechtel Joint Venture** - Responsible for preparing paleontology section for of the California Energy Commission Application for Certification for the Russell City Energy Center in Hayward, Alameda County.

**Warnerville Power Project, c\* Corporation** - Responsible for geology and paleontology sections of the California Energy Commission Application for Certification for the Warnerville Power Project in the San Joaquin Valley, eastern San Joaquin County.

**Inland Empire Energy Center, Calpine Corporation** - Responsible for preparing paleontology section for of the California Energy Commission Application for Certification for the Inland Empire Energy Center in western Riverside County.

**TOPIC: CULTURAL RESOURCES**

**WITNESSES: ANDREW GORMAN, STUART REEVE**

## CULTURAL RESOURCES

I. Name: Andrew Gorman and Stuart Reeve

II. Purpose:

Our testimony addresses the Cultural Resources associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Andrew Gorman:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 3 years and I am presently a Social Scientist with that organization. I have a B.A. Degree in Anthropology/Archaeology and I have 15 years of experience in all phases of cultural resource investigations and mitigation planning. I prepared the Cultural Resources section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Cultural Resources. A detailed description of my qualifications is contained in the attached resume.

**Stuart Reeves:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 2 years and I am presently a Social Scientist Archeologist with that organization. I have a Ph.D. Degree in Anthropology/Archeology and I have 25 years of experience in all phases of cultural resource investigations and mitigation planning. I prepared portions of the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Cultural Resources. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Sections 5.16 and Appendix L
- Exhibit 2, Responses to CEC Data Adequacy Request No. CULT-1 through CULT-12.
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 48 through 85
- Exhibit 4, Responses to Second Set of CEC Data Requests, Response Numbers 226 through 238.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant cultural resources impacts and will comply with all applicable laws, ordinances, regulations and standards. However, we do not believe the additional Staff proposed Conditions of Certification contained in the Addendum to the Staff Assessment are necessary for the reasons detailed in Midway Power, LLC's testimony for the topic area of Soil and Water Resources.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
ANDREW GORMAN-Cultural  
Resources**

I, Andrew Gorman, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Social Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Cultural Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.



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STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

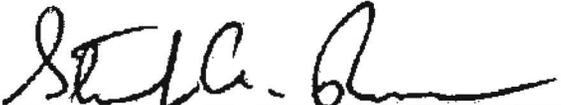
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
STUART REEVE-Cultural Resources**

I, Stuart Reeve, declare as follows:

6. I am presently employed by Tetra Tech FW, Inc., as a Social Scientist-Archeologist.
7. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
8. I prepared the attached testimony relating to Cultural Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
9. It is my professional opinion that the attached prepared testimony is valid 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 Santa Ana, CA on August 26, 2003.

  
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## Appendix A

### Resume of Andrew Gorman

Tetra Tech FW, Inc. – Social Scientist

#### EXPERIENCE SUMMARY

Mr. Gorman is an environmental consultant with 15 years of professional and field experience in cultural resources management, including archaeology, Native American consultation, and historic buildings and structures inventory and evaluation. Mr. Gorman is experienced with the California Environmental Quality Act (CEQA) process and is familiar with state and federal regulations pertaining to cultural resource management.

#### EDUCATION

B.A., Anthropology/Archaeology, Grinnell College, Grinnell, Iowa, 1985

#### REPRESENTATIVE PROJECT EXPERIENCE

**Cultural Resource Specialist, Tomen Power Umatilla County Windfarm Project, Umatilla County, Oregon.** Conducted archival research and prepared written report and “fatal flaw” analysis for proposed wind power project.

**Cultural Resource Specialist, Energy Northwest Bateman Windfarm Expansion, Kennewick, WA.** Performed cultural resource survey in the field for proposed construction of 6 miles of wind turbines and associated powerlines and ancillary facilities. Prepared written report for client and SHPO review

**Archaeology Monitor, Calpine California Peakers Gilroy Powerplant Construction, Gilroy, CA.** Acted as archaeological monitor on politically sensitive powerplant construction project. Observed excavation activities for impacts to cultural materials. Acted as liason between construction workers and Native American Monitors. Excavated human remains for reburial.

**Cultural Resource Specialist, 360networks Off-Right-of-Way Fiber Optic Facilities Installation Program, CA.** Prepared Cultural resource sections for Proponent’s Environmental Assessment for California Public Utilities Commission (PUC) and responded to PUC data requests. Conducted field and archive investigations for fiber optic signal regeneration sites at Modesto and Stockton. Archaeological Monitor and Environmental Inspector for fiber optic conduit installation in the San Bernardino National Forest in southern California. Coordinated communications between construction and USDA Forest Service personnel and worked with crew to ensure compliance with all permits and regulations.

**Heritage Resource Specialist, Environmental Assessments, Plumas National Forest, CA.** Coordinated with Forest Service Heritage Resource Specialists to develop heritage

resource sections of Environmental Assessment for a Defensible Fuel Profile Zone program implemented under the Quincy Library Group and Herger-Feinstein legislation.

**Heritage Resource Specialist, Storrie Post-Fire Restoration Environmental Impact Statement, Lassen National Forest, CA.** Developed Heritage Resources section for Environmental Assessment for a project to restore land and biotic resources in the aftermath of a major forest fire.

**Cultural Resource Specialist, Russell City Energy Center Application for Certification, CA.** Prepared cultural resources section for Application for Certification before the California Energy Commission for a 600 MW natural gas-fired combined-cycle merchant power plant. Conducted archaeological field investigations for the proposed site, gas pipeline, and transmission line. Prepared cultural resources inventory and historical background.

**Cultural Resource Specialist, Inland Empire Energy Center, Application for Certification, CA.** Prepared cultural resources section for Application for Certification before the California Energy Commission for a 600 MW natural gas-fired combined-cycle merchant power plant. Conducted archaeological field investigations for the proposed site, gas pipeline, and transmission line. Prepared cultural resources inventory and historical background.

**Cultural Resource Specialist, Bay Area Fiber Optic Conduit Installation Project, Santa Clara County, CA.** Prepared cultural resources inventory for urban fiber optic installation project located in Santa Clara County, California. Conducted literature search, field reconnaissance, and cultural resources sensitivity assessment.

**Repair Coordinator, Historic Ferryboat Restoration Project, Seattle, WA.** Planned and prioritized restoration work for historic ferryboat in Seattle, Washington. Conducted periodic inspections of the boat and below-deck spaces to meeting U.S. Coast Guard standards. Planned and supervised restoration work parties.

**Archaeological Technician, Office of the Iowa State Archaeologist, Transportation Corridor Studies, IA.** Conducted historic and prehistoric site assessments of transportation construction corridors for transportation improvement programs. Evaluated architecture within project areas for significance and assessed potential project effects. Surveyed, identified, and recorded historic and prehistoric archaeological sites. Monitored construction for buried archaeological components. Conducted archival background research for projects and assembled project reports for the State Historic Preservation Office.

## Appendix A

### Resume of Stuart Reeve

Tetra Tech FW, Inc. – Social Scientist Archeologist

#### EXPERIENCE SUMMARY

Stuart A. Reeve, Ph.D., has more than 25 years experience in professional archeology, including prehistoric and historic archeological studies with federal and state agencies, and cultural resources consulting throughout the United States. Dr. Reeve has been responsible for all aspects of cultural resource management plans, cultural resources sensitivity analyses, archeological field investigations, collection analyses and curation, technical and scientific report preparation, and coordination of multi-disciplinary environmental teams.

#### EDUCATION

Ph.D. (Doctor of Philosophy), Anthropology/Archeology, State University of New York , Albany, NY, 1986

B.A. (Bachelor of Arts), Anthropology, State University of New York, Binghamton, NY, 1971

#### REPRESENTATIVE PROJECT EXPERIENCE

**Archeologist/Cultural Resources Specialist, Northeast, Jamaica Island Landfill, Portsmouth Naval Shipyard, Kittery, Maine.** Compiled environmental, archeological and historic data for an archeological sensitivity model of pre-landfill landforms and conducted archeological testing at sensitive areas.

**Archeologist/Cultural Resources, Bay Energy LLC, Generating Station, Gowanus Canal, Brooklyn, New York.** Compiled a cultural resources sensitivity model and report for a draft EIS for a proposed generating station, submitted to the New York State Department of Environmental Conservation.

**Archeologist/Cultural Resources Specialist, , Rockaway Borough Wellfield Superfund Site, Rockaway Borough, Morris County, New Jersey.** Compiled historic and land-use data for 62 properties within Rockaway Borough Wellfield Superfund Site, including industrial sites and portion of the Morris Canal. Completed a cultural resources report detailing historic and archeological sensitivity of an urban community.

**Archeologist/Cultural Resources Specialist, Valley Forge National Park, Pennsylvania.** Conducted archeological monitoring for environmental testing in historic industrial areas of Valley Forge National Park.

**Archeologist/Cultural Resources Specialist, Royal D'Iberville Casino and Marina, Draft EIS, Cultural Resources. Biloxi and D'Iberville, Mississippi.** Conducted background research and prepared a technical cultural resources report describing sensitivity for prehistoric and historic archeological sites, and architectural resources at three alternative development sites along the Mississippi Gulf Coast.

**Archeologist/Cultural Resources Specialist, Department of the Navy Engineering Field Activities-Northeast, Naval Weapons Industrial Reserve Plant.** Conducted Phase 1 archeological testing and monitoring of machine access and debris storage area, and conducted monitoring for buried archeological sites for land fill remediation. Completed a technical archeological survey report.

**Archeologist/Cultural Resources Specialist. Calpine, Chippokes Energy Center, Surry County, Virginia.** Conducted background research and archeological sensitivity modeling for prehistoric Native American sites, 17<sup>th</sup>-Century English settlements, and historic Euro-American and African American sites for a project area along the lower James River in Virginia. Completed a technical cultural resources report.

**Archeologist/Cultural Resources Specialist, Niagara Mohawk. Gravestone Documentation Johnstown Colonial Cemetery, Johnstown, New York.** Photographed and analyzed 359 historic gravestones for effects from remediation activities planned at the adjacent Niagara Mohawk property. Prepared a preliminary technical report and protection plan for historic Johnstown Colonial Cemetery listed on the National Register of Historic Places.

**Archeologist/Cultural Resources Specialist, Texas Eastern Transmission LP., Hunterdon County, New Jersey.** Conducted archeological and historical investigations for proposed natural gas compressor upgrades. Prepared a final cultural resources technical report.

**Archeologist/Cultural Resources Specialist, Stone Retaining Wall Documentation, Niagara Mohawk Johnstown (N. Market Street) Site, Johnstown, New York.** Photo-documented a stone retaining wall before and after interim remedial measures at a former manufactured gas plant. Prepared a final cultural resources technical report.

**Archeologist/Cultural Resources Specialist, NASA, Marshall Space Flight Center. Environmental Resource Document, Huntsville, Alabama.** Assembled archeological, architectural, historical and environmental information about Marshall Space Flight Center. Developed a predictive archeological model for prehistoric and prehistoric sites. Prepared a final cultural resources technical report.

**Archeologist/Cultural Resources Specialist, Airport Apron Environmental Assessment; Cultural Resources, Fort Dix, New Jersey September 2001.** Reviewed archeological, historical and environmental information for Fort Dix, New Jersey. Prepared the final cultural resources technical report.

**Consultant, Trunkline LNG Company. Lake Charles Terminal, Calcasieu Parish, Louisiana.** Conducted consultations for a FERC application, including SHPO consultations, Native American consultations, and reviews of archeological reports. Prepared Resource Report 4 and an Unanticipated Discovery Plan for the FERC application.

**Archeological Consultant, Town of Redding Board of Selectmen and Redding Planning Commission, Redding, Connecticut.** Major tasks included conducting a town-wide historical and archeological survey documenting 106 archeological sites, 852 historic structures, and archeological sensitivity modeling for more than 20,000 acres. Conducted Phase 1-3 excavations at archeological sites on town lands, including preparing 13 cultural resources reports. Procured funding for compiling a town history in cooperation with the Redding Historical Society. Developed a town-wide volunteer archeology program. Reviewed all subdivision applications for impacts of historic and archeological sites for the Redding Planning Commission. Developing a National Register Nomination for the Poverty Hollow Historic District.

**Archeological Consultant, Friends and Neighbors of Putnam Memorial State Park, Redding, Connecticut.** Nominated Putnam State Park as Connecticut's First State Archeological Preserve for the protection of 1778-1779 Revolutionary War encampments.

**Archeological Consultant, June 1998 - Florence Griswold Museum and Connecticut College.** Conducted an archeological field school for Phase 1-3 excavations at the Lyme Art Colony, Old Lyme, Connecticut, including specialized analyses of 18,000 historic artifacts from studios and other features, prepared a detailed archeological report and museum cultural resources management plan.

**Assistant Administer of Research, Maryland Historical Trust, Jefferson Patterson Park and Museum, St. Leonard, Maryland.** Museum duties included conducting archeological surveys and excavations at prehistoric and Colonial archeological sites in Southern Maryland, exhibit development and Maryland Archeological Curation and Conservation Laboratory design, reviewed development projects and CRM reports for compliance with federal and state regulations, conducted volunteer training and education programs, compiled 7 technical reports, presented 3 professional papers and 2 publications, series editor for Jefferson Patterson Park and Museum Occasional Papers No 1-5.

**Archeologist, National Park Service, Midwest Archeological Center, Lincoln, Nebraska.** Environmental modeling and Phase 1-3 archeological investigations in Grand Teton and Yellowstone National Parks, Wyoming, and Glen Canyon National Recreation Area, Utah, authored or co-authored 19 technical cultural resources reports, professional papers and publications.

## PUBLICATIONS & PRESENTATIONS

Reeve, S.A. 1999. An Historical and Archeological Assessment Survey of Redding, Connecticut. Office of the First Selectman, Town of Redding, Connecticut.

Reeve, S.A. 1992. Changes in Time: A Seriation Chronology for Southern Maryland Projectile Points. *Journal of Middle Atlantic Archaeology*. 8:107-138.

Reeve, S.A. 1986. Root Crops and Prehistoric Social Process in the Snake River Headwaters, Northwestern Wyoming. Ph.D. dissertation. SUNY Albany, University Microfilms, Ann Arbor.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. In: Proceedings of the Conference on Scientific Research in the National Parks (2<sup>nd</sup>). 1:362-380. National Technical Information Service, Springfield, Ohio.

Reeve, S.A., L. Bradt, H.D. Juli and R. Gradie. 2000. The Archeology of the Lyme Art Colony, Florence Griswold Museum, Old Lyme, Connecticut. Connecticut College Archaeology Laboratory Report No. 11, New London, Connecticut.

Reeve, S.A. and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronologies and Population Trends. *Bulletin of the Archaeological Society of Connecticut*. 62:19-66.

Reeve, S.A., J.C. Russo, D.J. Pogue and J.M. Herbert. 1991. Myrtle Point: The Changing Land and People of a Lower Patuxent River Community. Jefferson Patterson Park and Museum, Occasional Papers 3, St. Leonard, Maryland.

Reeve, S.A., and P. Siegel. 1996. Phase III Data Recovery at the Aud Site (Site 18ST634), St. Mary's County, Maryland. Maryland State Highway Administration Archeological Report 111. John Milner Associates, Inc., West Chester, New York.

Wright, G.A., S.J. Bender and S.A. Reeve. 1980. High Country Adaptations. *Plains Anthropologist*. 25:191-207.

Wright, G.A and S.A. Reeve. 1981. Prehistoric Resource Procurement and Climatic Change in Northwestern Wyoming, pp. 423-448. In: Quaternary Paleoclimate, W.C. Mahaney (ed.). Geo Abstracts Ltd. Norwich, UK.

Reeve, S.A. 1997. Redding Archeology, New Appreciation for Old Places. Lecture presented at the Institute for American Indian Studies, Washington, Connecticut.

Reeve, S.A. 1997. Mitigating Environmental Disaster: Archeological Investigations at the Flat Swamp Cemeteries, Newtown. Presented to the Archaeological Society of Connecticut Meeting, Connecticut River Museum, Essex, Connecticut.

Reeve, S.A. 1997. Connecticut Radiocarbon Dates: Compilation and Comparisons. Presented to the Archeological Society of Connecticut Meeting, Fairfield Historical Society, Fairfield, Connecticut.

Reeve, S.A. 1991. The Material Relationships of Prehistoric Territoriality: PIXE Trace-Element Characterizations of Middle Woodland Rhyolite in Southern Maryland. Presented to the Conference of Middle Atlantic Archeology, Ocean City, Maryland.

Reeve, S.A. 1989. New Data on the Prehistoric Cultural Sequence for Southern Maryland. Presented to the Conference for Middle Atlantic Archeology, Rehoboth Beach, Delaware.

Reeve, S.A. 1988. A Middle Woodland Shell-Pit Burial along the Patuxent River, Maryland. Presented to the Archeology Society of Maryland Annual Meeting, Elkton, Maryland.

Reeve, S.A. 1978. Ethnobotany and Archeology in Yellowstone and Grand Teton National Parks. Presented to the Conference on Scientific Research in the National Parks (2<sup>nd</sup>), San Francisco, California.

Reeve, S.A. 1976. Plant Resources and Prehistoric Transhumance in Jackson Hole, Wyoming. Presented to the 23<sup>rd</sup> Plains Conference, Minneapolis, Minnesota.

Reeve, S.A., and A. Burger. 1998. Redding: Archeological Modeling and Historic Preservation in an Old Connecticut Town. Presented to the Archeological Society of Connecticut Meeting, Central Connecticut State University, Bristol, Connecticut.

Reeve, S.A., and K. Forgacs. 1999. Connecticut Radiocarbon Dates: A Study of Prehistoric Cultural Chronology and Population Trends. Presented to the Archeological Society of Connecticut Meeting for *Connecticut Archeology Today*, Peabody Museum of Natural History, Yale University, New Haven, Connecticut.

Reeve, S.A., and P. Siegel. 1996. Estuarine Habitats and Plant Gathering During the Woodland Period in Southern Maryland. Presented to the Conference on Archeobotany in the Northeast, New York State Museum, Albany, New York.

Reeve, S.A., and P. Siegel. 1995. Woodland Period Activity Organization in Southern Maryland: A View from the Aud Site. Presented to the 62<sup>nd</sup> Annual Meeting of the Eastern States Archeological Federation, Wilmington, Delaware.

**TOPIC: HAZARDOUS MATERIALS**

**WITNESSES: LIDA MOUSSAVIAN, DUANE MCCLOUD**

## HAZARDOUS MATERIALS

I. Name: Lida Moussavian and Duane McCloud

II. Purpose:

Our testimony addresses the Hazardous Materials issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Duane McCloud:** I have worked for FPL Energy for over five years and am presently a Project Manager in their Construction and Engineering Division supporting the development of new power plant projects. I have a BS in Chemical Engineering and over 21 years of experience in the power generation industry including the areas of technical service, operations, design, project management, and project development. I have been involved with the development of the Tesla project from its initial conception, development, and through the entire CEC process to date.

I prepared portions of the Project Description section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with the Hazardous Materials, Facility Design, Reliability and Efficiency. A detailed description of my qualifications is contained in the attached resume.

**Lida Moussavian:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 17 years and am presently a Principal Engineer with that organization. I have a B.S. Degree in Chemical Engineering and I have 19 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance.

I supervised the preparation of the Hazardous Materials Handling section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Hazardous Materials Handling. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Sections 5.12, Table 6.1-1, Section 6.5.12
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Number 93.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant Hazardous Materials Handling impacts and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
LIDA MOUSSAVIAN-Hazardous  
Materials Management**

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I, Lida Moussavian, declare as follows:

6. I am presently employed by Tetra Tech FW, Inc., as a Principal Engineer.
7. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
8. I prepared the attached testimony relating to Hazardous Materials Handling for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
9. It is my professional opinion that the attached prepared testimony is valid 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 Santa Ana, CA on August 26, 2003.



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## Appendix A

### Resume of Lida Moussavian

Tetra Tech FW, Inc. -- Principal Engineer

#### EXPERIENCE SUMMARY

Ms. Moussavian has over 19 years of experience in the field of environmental and air quality consulting and engineering. Responsible for managing and conducting multidisciplinary environmental studies. Her experience includes managing, consulting, engineering and technical support in the areas of permitting, regulatory and compliance assessment, agency coordination, negotiations, emissions inventory, offset evaluation, air pollution control technology assessment, air emissions estimation, licensing of power plants, environmental auditing, air toxic emissions, and environmental impact reports.

#### EDUCATION

BS, Chemical Engineering, University of California, Berkeley, 1983

#### TRAINING/CERTIFICATIONS

American Institute of Chemical Engineers Certified Engineer in Training (EIT)

Registered Environmental Assessor (REA): California, 1992

Certified in Hazardous Materials Management (CHMM), University of California, Irvine

#### REPRESENTATIVE PROJECT EXPERIENCE

*California Institute of Technology (CALTECH); Pasadena, CA* - Project Manager responsible for preparation and submission of air permit application for a 14-MW cogeneration facility to be located on campus. The application was submitted to the South Coast Air Quality Management District (SCAQMD) and is currently in the review process.

*Calpine C\* Power; CA* - Air Quality Manager responsible for the development and preparation of AFCs for submittal to the CEC for two proposed peaking power plants in the Bay Area and northern San Joaquin Valley. Air quality permitting documentation includes emission estimates, health risk assessment, best available control technology (BACT), offset analysis and a comprehensive evaluation of the projects compliance with the local, state, federal, and the CEC regulations and requirements. Air permit applications are submitted to the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Unified Air Pollution Control District for these projects.

*Pacific Gas & Electric (PG&E); North Baja Project, CA* - Air Quality Engineer responsible for analysis and project impact evaluation for the North Baja gas pipeline and compressor station construction. A Resource Report 9 was prepared to include applicability and/or compliance analysis of the project against the federal, state, and local requirements.

**360 Network; CA** – Air Quality Manager responsible for air permit document preparation and obtaining permit approval for emergency generators throughout California. The generators would be installed in association with the fiber optic lines, and the permits were applied from 12 different air quality agencies.

**Navy Southwest Division; CA** – Air Quality Manager responsible for coordination of air quality monitoring activities related to various remediations at Navy sites. The projects include ambient air quality and meteorological monitoring of various air pollutants at the site boundaries in Alameda, San Diego, and Long Beach, California.

**Hamakua Energy Partners; HI** – Project Manager responsible for a Prevention of Significant Deterioration (PSD) and a Title V air permit application providing consulting services and compliance strategy assistance for a 58-MW triple fuel fired combined cycle cogeneration facility. The work included air emission estimation, air quality modeling analysis, emission offset evaluation, BACT assessment, applicable regulatory requirements determination, and air quality regulation compliance analysis. She prepared and submitted the air permit applications to the State of Hawaii and U.S. Environmental Protection Agency (EPA) Region IX. Her work included many ongoing negotiations prior to obtaining final approval and permits from the agencies.

**Harbor Cogeneration Company; CA** – Project Manager providing air quality consulting services for coordination and development of a Clean Air Act Title V air permit. The facility consisted of a GE Frame 7 combustion turbine, air pollution control system, and appurtenant equipment. The project includes air emission estimates evaluation, regulatory compliance analysis, and providing support during the permit application review process.

**National Aeronautics and Space Administration (NASA)-Jet Propulsion Laboratory (JPL); CA** – Task Manager responsible for coordinating and conducting air quality engineering consulting for the facility. The project consisted of site visits, air emission inventory, and a study of federal, state and district regulations; control technology evaluation; as well as compliance determination. The project included an assessment of the applicable regulations and requirements.

**Elk Hills Power Project; CA** – Developed and prepared the air quality analysis for a 500-MW combined cycle power plant. The project required a PSD air permit application as well as an AFC. Performed a detailed BACT, air emission estimate, offset and regulatory compliance analysis. Project proponents were Sempra Energy Resources (SER) and Occidental Energy Ventures Corporation (OEVC).

**Saguaro Power Company; NV** – Responsible for a Title V air permit application. Responsible for determining applicable air quality rules, regulations and requirements, performing regulatory compliance assessment of a cogeneration plant located within Clark County Health District, Nevada, jurisdiction. The project consisted of Title V operating permit preparation for the cogeneration facility consisting of two Frame 6 combustion turbines and a Selective Catalytic Reduction (SCR) system.

**IBM; VT** – Performed a top-down BACT analyses for emissions of NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>10</sub> on a fossil fuel fired boiler plant. The analyses were used in a PSD application that was submitted to the State of Vermont, Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division.

**San Diego Naval Station; CA** – Prepared an air permit application for a remediation, soil vapor extraction system/thermal oxidation unit. The project included air emission estimates, health risk assessment, BACT, and offset and regulatory compliance analyses.

**JPL; CA** – Project Manager responsible for preparing an air permit application for a soil vapor extraction carbon adsorber unit. The project included air emission calculations, health risk assessment, BACT, and offset and regulatory compliance analyses.

**Navy Southwest Division; Fire Fighter Training Facility, Naval Station; CA** – Prepared and submitted an air permit application for construction and operation of a soil and water treatment system consisting of a thermal oxidizer and a carbon adsorption. The application was prepared in compliance with San Diego Air Pollution Control District rules and regulations.

**Teledyne Cast Products; San Gabriel Basin Assessment; CA** – Responsible for the evaluation of an existing screening health risk assessment and developing a modified, more representative health risk analysis for a metal casting company. The facility produces metallic products used in medical and automotive applications.

**NASA - Dryden Flight Research Center (DFRC); CA** – Conducted an air pollution compliance assessment for DFRC. Responsible for reviewing and determining the facility's compliance status in regard to existing and future applicable local, state, and federal air quality regulations and requirements. This project consisted of a review and study of applicability and requirements of the Clean Air Act Amendments (CAAA).

**Inland Container Corporation; CA** – Managed and provided technical directions for preparation of a Risk Management Prevention Program (RMPP) and the Continuous Emissions Monitoring System (CEMS) certification process of a cogeneration facility pursuant to Regional Clean Air Incentives Market (RECLAIM) requirements. The project consists of the addition of the SCR system as a control technology for nitrogen oxide emissions and utilization of anhydrous ammonia in the SCR.

**Rhône-Poulenc Basic Chemicals Company; CA** – As part of the SCAQMD RECLAIM Compliance program, a CEMS was installed on an existing sulfuric acid plant. Responsible for permitting document preparation, installation, testing and certification of the CEMS in compliance with RECLAIM.

## **ADDITIONAL EXPERIENCE**

Served as air quality consultant on behalf of CEC for evaluation and review of the Santa Maria Aggregate proposed 50-MW bituminous diatomite and petroleum coke-fired cogeneration project. The project comprised of a circulating fluidized bed combustor

(CFBC) to drive a steam turbine and generate electricity for sale to PG&E. Provided detailed evaluation and compliance analysis of the project with respect to all applicable federal, state, and local rules and requirements. Coordinated the review process and evaluation efforts with Santa Barbara County Air Pollution Control District.

As a consultant to CEC, prepared written expert testimony on potential air quality impacts and mitigation measures for a 99-MW cogeneration facility to be located at the Richmond refinery in California. Coordinated closely with BAAQMD to evaluate compliance with the requirements of New Source Review Rule, such as BACT and offsets, as well as compliance with all other applicable air pollution rules and regulations.

Prepared written expert testimony on potential air quality impacts and mitigation measures for a 90-MW cogeneration facility located at the American I, vegetable processing Plant in King City, Monterey County, California; and an 81-MW cogeneration facility located at the Champlin (now called Harbor Cogeneration facility) Petroleum Company, Wilmington, California.

Prepared Application for Authority to Construct permit application for O'Brien Energy for a 48-MW natural gas-fired cogeneration facility to be located within the jurisdiction of the Santa Barbara County Air Pollution Control District.

Conducted a BACT analysis and summarized findings in a PSD permit application of EPA Region VI for a 210-MW cogeneration facility to be located in Sweetwater, Texas (U.S. Gypsum).

Prepared a technical work plan in the areas of air pollution control assessment and laboratory scale test program for a hazardous waste incinerator to be located at Rocky Mountain Arsenal, Colorado.

Served as Air Quality Engineer for the 48-MW cogeneration project at the Wilmington refinery. Prepared the Application for Authority to Construct for submittal to the SCAQMD. Also, prepared an AFC for Qualifying Status for submittal to the Federal Energy Regulatory Commission; and a Petition for Permanent Exemption, which was submitted to the U.S. Department of Energy, Economic Regulatory Administration (Unocal).

Served as Air Quality Engineer for the landfill gas recovery unit and the landfill gas-fired steam electric generating plant in Coyote Canyon, California. Prepared the Application for Authority to Construct for submittal to the SCAQMD.

**Resume of Duane McCloud**  
FPL Energy – Project Manager

**EXPERIENCE SUMMARY**

Mr. McCloud has over 21 years of experience in all aspects of power generation. He has held positions of increasing responsibility in the areas of technical services, operations, project design, and project management of power generating facilities of a variety of technologies, including coal fired, gas fired, and geothermal. Mr. McCloud has been employed by FPL Energy for over five years in a variety of project management and engineering positions focused on operations support and corporate expansion. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Manager in the Construction and Engineering Division at FPL Energy, Mr. McCloud is responsible for piecing together the technical aspects of power generation development for projects throughout the US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy growth plans. His previous work, with CalEnergy and American Electric Power, has included engineering manager for new plant design, plant operations management, and project management for sites in California, throughout the United States, and in Asia. He has significant experience and background in the specific areas of water treatment and controls systems.

**EDUCATION**

B.S.Ch.E, Chemical Engineering, University of Akron, 1982.

**REPRESENTATIVE PROJECT EXPERIENCE**

**FPL Energy - Project Engineering/Management (1997 - Present)**

*Tesla Power Project* – Project Engineer providing technical support of the development logistics and site selection, and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 1120 MW power plant in east Alameda County.

*Rio Linda / Elverta Power Project* – Project Engineer for the technical support of the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

*Blythe Power Project* - Lead due diligence role and major contribution to the construction development for a 500 MW power plant near Blythe, CA. Has played an

integral role in coordination of Owner's home office support functions for this project in the construction phase.

***Project Development Technical Support*** – Lead project engineering role for support of over 7000 MW in project development throughout US, including site evaluation, contract development support, and umbilical development for projects in California, Arizona, Nevada, Colorado, New York, and North Carolina,

***Mergers and Acquisition Due Diligence*** – Technical leader for asset definition and evaluation for projects located throughout the United States, including opportunities in coal, oil, gas, geothermal, and hydroelectric technologies. Evaluations of over 10,000 MW in generation have included operating projects, projects under construction, and projects previously developed by others.

**Kiewit/CalEnergy/Magma Power - Project Management; Plant Engineer/ Plant Management (1990 – 1997)**

***CalEnergy, Ben Holt Company (now Kiewit-Bibb California) – Engineering Project Manager*** – Administrative, technical, and project lead for all engineering and design efforts for the Patuha geothermal project in Java, Indonesia as part of a Joint Venture partnership for a programmatic development.

***CalEnergy, Ben Holt Company – Assistant Project Manager*** – Technical project lead for all engineering and design efforts for the Dieng Unit 1 geothermal project in Java, Indonesia.

***Magma Power Company – Assistant Plant Manager Vulcan/Hoch*** – Plant management, including operations administration, maintenance coordination, cost control, and project direction for two geothermal power facilities near Calipatria, California.

***Magma Power Company – Plant Engineer*** – Lead technical role, including equipment performance evaluation, control systems improvements, and maintenance planning for the Hoch geothermal power facility near Calipatria, California.

**American Electric Power Service Corporation - Project Engineer (1982 - 1990)**

***Project Engineer, Zimmer Conversion*** – System responsibility for all water treatment, cooling, and laboratory systems for the conversion of a 98% complete nuclear facility to a 1300 MW coal-fired supercritical power plant in southwest Ohio.

***Project Engineer, Operating Plant Support*** – Corporate level oversight and responsibility for compliance, audits, capital improvements, and operations guidelines for all chemical systems, including makeup water treatment, ultrapure water treatment, wastewater treatment, coal sampling, laboratory systems, chemical feed and storage systems, chemical cleaning systems, and cooling water systems for a total of nine power facilities located in Ohio, Indiana, West Virginia, and Virginia.

**TOPIC: WASTE MANAGEMENT**

**WITNESSES: LIDA MOUSSAVIAN**

## WASTE MANAGEMENT

I. Name: Lida Moussavian

II. Purpose:

My testimony addresses the Waste Management issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for 17 years and am presently a Principal Engineer with that organization. I have a B.S. Degree in Chemical Engineering and I have 19 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance.

I supervised the preparation of the Waste Management section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Waste Management. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Sections 5.13, Table 6.1-1, Section 6.5.12
- Responses to First Set of CEC Data Requests, Response Number 138.

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant waste management impacts and will comply with all applicable laws, ordinances, regulations and

standards. However, I do not believe the additional Staff proposed Conditions of Certification contained in the Addendum to the Staff Assessment are necessary for the reasons detailed in Midway Power, LLC's testimony for the topic area of Soil and Water Resources.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
LIDA MOUSSAVIAN-Waste  
Management**

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I, Lida Moussavian, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Principal Engineer.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Waste Management for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 27, 2003.



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## **Appendix A**

### **Resume of Lida Moussavian**

Tetra Tech FW, Inc. – Principal Engineer

#### **EXPERIENCE SUMMARY**

Ms. Moussavian has over 19 years of experience in the field of environmental and air quality consulting and engineering. Responsible for managing and conducting multidisciplinary environmental studies. Her experience includes managing, consulting, engineering and technical support in the areas of permitting, regulatory and compliance assessment, agency coordination, negotiations, emissions inventory, offset evaluation, air pollution control technology assessment, air emissions estimation, licensing of power plants, environmental auditing, air toxic emissions, and environmental impact reports.

#### **EDUCATION**

BS, Chemical Engineering, University of California, Berkeley, 1983

#### **TRAINING/CERTIFICATIONS**

American Institute of Chemical Engineers Certified Engineer in Training (EIT)

Registered Environmental Assessor (REA): California, 1992

Certified in Hazardous Materials Management (CHMM), University of California, Irvine

#### **REPRESENTATIVE PROJECT EXPERIENCE**

*California Institute of Technology (CALTECH); Pasadena, CA* – Project Manager responsible for preparation and submission of air permit application for a 14-MW cogeneration facility to be located on campus. The application was submitted to the South Coast Air Quality Management District (SCAQMD) and is currently in the review process.

*Calpine C\* Power; CA* - Air Quality Manager responsible for the development and preparation of AFCs for submittal to the CEC for two proposed peaking power plants in the Bay Area and northern San Joaquin Valley. Air quality permitting documentation includes emission estimates, health risk assessment, best available control technology (BACT), offset analysis and a comprehensive evaluation of the projects compliance with the local, state, federal, and the CEC regulations and requirements. Air permit applications are submitted to the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Unified Air Pollution Control District for these projects.

*Pacific Gas & Electric (PG&E); North Baja Project, CA* - Air Quality Engineer responsible for analysis and project impact evaluation for the North Baja gas pipeline and compressor station construction. A Resource Report 9 was prepared to include applicability and/or compliance analysis of the project against the federal, state, and local requirements.

**360 Network; CA** – Air Quality Manager responsible for air permit document preparation and obtaining permit approval for emergency generators throughout California. The generators would be installed in association with the fiber optic lines, and the permits were applied from 12 different air quality agencies.

**Navy Southwest Division; CA** – Air Quality Manager responsible for coordination of air quality monitoring activities related to various remediations at Navy sites. The projects include ambient air quality and meteorological monitoring of various air pollutants at the site boundaries in Alameda, San Diego, and Long Beach, California.

**Hamakua Energy Partners; HI** – Project Manager responsible for a Prevention of Significant Deterioration (PSD) and a Title V air permit application providing consulting services and compliance strategy assistance for a 58-MW triple fuel fired combined cycle cogeneration facility. The work included air emission estimation, air quality modeling analysis, emission offset evaluation, BACT assessment, applicable regulatory requirements determination, and air quality regulation compliance analysis. She prepared and submitted the air permit applications to the State of Hawaii and U.S. Environmental Protection Agency (EPA) Region IX. Her work included many ongoing negotiations prior to obtaining final approval and permits from the agencies.

**Harbor Cogeneration Company; CA** – Project Manager providing air quality consulting services for coordination and development of a Clean Air Act Title V air permit. The facility consisted of a GE Frame 7 combustion turbine, air pollution control system, and appurtenant equipment. The project includes air emission estimates evaluation, regulatory compliance analysis, and providing support during the permit application review process.

**National Aeronautics and Space Administration (NASA)-Jet Propulsion Laboratory (JPL); CA** – Task Manager responsible for coordinating and conducting air quality engineering consulting for the facility. The project consisted of site visits, air emission inventory, and a study of federal, state and district regulations; control technology evaluation; as well as compliance determination. The project included an assessment of the applicable regulations and requirements.

**Elk Hills Power Project; CA** – Developed and prepared the air quality analysis for a 500-MW combined cycle power plant. The project required a PSD air permit application as well as an AFC. Performed a detailed BACT, air emission estimate, offset and regulatory compliance analysis. Project proponents were Sempra Energy Resources (SER) and Occidental Energy Ventures Corporation (OEVC).

**Saguaro Power Company; NV** – Responsible for a Title V air permit application. Responsible for determining applicable air quality rules, regulations and requirements, performing regulatory compliance assessment of a cogeneration plant located within Clark County Health District, Nevada, jurisdiction. The project consisted of Title V operating permit preparation for the cogeneration facility consisting of two Frame 6 combustion turbines and a Selective Catalytic Reduction (SCR) system.

**IBM; VT** – Performed a top-down BACT analyses for emissions of NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>10</sub> on a fossil fuel fired boiler plant. The analyses were used in a PSD application that was submitted to the State of Vermont, Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division.

**San Diego Naval Station; CA** – Prepared an air permit application for a remediation, soil vapor extraction system/thermal oxidation unit. The project included air emission estimates, health risk assessment, BACT, and offset and regulatory compliance analyses.

**JPL; CA** – Project Manager responsible for preparing an air permit application for a soil vapor extraction carbon adsorber unit. The project included air emission calculations, health risk assessment, BACT, and offset and regulatory compliance analyses.

**Navy Southwest Division; Fire Fighter Training Facility, Naval Station; CA** – Prepared and submitted an air permit application for construction and operation of a soil and water treatment system consisting of a thermal oxidizer and a carbon adsorption. The application was prepared in compliance with San Diego Air Pollution Control District rules and regulations.

**Teledyne Cast Products; San Gabriel Basin Assessment; CA** – Responsible for the evaluation of an existing screening health risk assessment and developing a modified, more representative health risk analysis for a metal casting company. The facility produces metallic products used in medical and automotive applications.

**NASA - Dryden Flight Research Center (DFRC); CA** – Conducted an air pollution compliance assessment for DFRC. Responsible for reviewing and determining the facility's compliance status in regard to existing and future applicable local, state, and federal air quality regulations and requirements. This project consisted of a review and study of applicability and requirements of the Clean Air Act Amendments (CAAA).

**Inland Container Corporation; CA** – Managed and provided technical directions for preparation of a Risk Management Prevention Program (RMPP) and the Continuous Emissions Monitoring System (CEMS) certification process of a cogeneration facility pursuant to Regional Clean Air Incentives Market (RECLAIM) requirements. The project consists of the addition of the SCR system as a control technology for nitrogen oxide emissions and utilization of anhydrous ammonia in the SCR.

**Rhône-Poulenc Basic Chemicals Company; CA** – As part of the SCAQMD RECLAIM Compliance program, a CEMS was installed on an existing sulfuric acid plant. Responsible for permitting document preparation, installation, testing and certification of the CEMS in compliance with RECLAIM.

## **ADDITIONAL EXPERIENCE**

Served as air quality consultant on behalf of CEC for evaluation and review of the Santa Maria Aggregate proposed 50-MW bituminous diatomite and petroleum coke-fired cogeneration project. The project comprised of a circulating fluidized bed combustor

(CFBC) to drive a steam turbine and generate electricity for sale to PG&E. Provided detailed evaluation and compliance analysis of the project with respect to all applicable federal, state, and local rules and requirements. Coordinated the review process and evaluation efforts with Santa Barbara County Air Pollution Control District.

As a consultant to CEC, prepared written expert testimony on potential air quality impacts and mitigation measures for a 99-MW cogeneration facility to be located at the Richmond refinery in California. Coordinated closely with BAAQMD to evaluate compliance with the requirements of New Source Review Rule, such as BACT and offsets, as well as compliance with all other applicable air pollution rules and regulations.

Prepared written expert testimony on potential air quality impacts and mitigation measures for a 90-MW cogeneration facility located at the American I, vegetable processing Plant in King City, Monterey County, California; and an 81-MW cogeneration facility located at the Champlin (now called Harbor Cogeneration facility) Petroleum Company, Wilmington, California.

Prepared Application for Authority to Construct permit application for O'Brien Energy for a 48-MW natural gas-fired cogeneration facility to be located within the jurisdiction of the Santa Barbara County Air Pollution Control District.

Conducted a BACT analysis and summarized findings in a PSD permit application of EPA Region VI for a 210-MW cogeneration facility to be located in Sweetwater, Texas (U.S. Gypsum).

Prepared a technical work plan in the areas of air pollution control assessment and laboratory scale test program for a hazardous waste incinerator to be located at Rocky Mountain Arsenal, Colorado.

Served as Air Quality Engineer for the 48-MW cogeneration project at the Wilmington refinery. Prepared the Application for Authority to Construct for submittal to the SCAQMD. Also, prepared an AFC for Qualifying Status for submittal to the Federal Energy Regulatory Commission; and a Petition for Permanent Exemption, which was submitted to the U.S. Department of Energy, Economic Regulatory Administration (Unocal).

Served as Air Quality Engineer for the landfill gas recovery unit and the landfill gas-fired steam electric generating plant in Coyote Canyon, California. Prepared the Application for Authority to Construct for submittal to the SCAQMD.

**TOPIC: VISUAL RESOURCES**

**WITNESSES: DWIGHT MUDRY**

## VISUAL RESOURCES

I. Name: Dwight R. Mudry, Ph.D.

II. Purpose:

My testimony addresses the Visual Resources issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Visual Resources section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Visual Resources. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Section 5.10, Table 6.1-1, Section 6.5.10
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. VIS-1 through VIS-4
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 117 through 130
- Exhibit 4, Responses to Second Set of CEC Data Requests, Response Numbers 283 through 288.

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the conclusion that the Tesla Power Project will not result in significant visual resources impacts and will comply with all applicable laws, ordinances, regulations and standards. I agree with the Conditions of Certification contained in the Final Staff Assessment with one minor clarification to Condition of Certification **VIS-5**. I request that the word "automated" be stricken to allow a manual control system to be employed as there are inherent technical and reliability problems associated with automated plume abatement control systems.

Additionally, I do not believe the additional Staff proposed Conditions of Certification contained in the Addendum to the Staff Assessment are necessary for the reasons detailed in Midway Power, LLC's testimony for the topic area of Soil and Water Resources.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
DWIGHT R. MUDRY

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Visual Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.

  
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## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

**Modesto Irrigation District, Power Plant EIR** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

**Northern California Power Agency, Environmental Assessments for Five Power Plants** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

**Corn Products Corporation, Coal Fired Cogeneration Project EIR** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

**Los Angeles Harbor Department, Environmental Impact Report** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

**Rio Linda Water District, Initial Study and Negative Declaration** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

**Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

**Government of Nepal, Hydroelectric Project Environmental Assessment** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

**TOPIC: NOISE AND VIBRATION**

**WITNESSES: THOMAS ADAMS**

## NOISE

I. Name: Tom Adams

II. Purpose:

My testimony addresses the Noise issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 26 years and I am presently a Supervising Noise Control Engineer with that organization. I have a M.S. Degree in Physics and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on two previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); and Sacramento Ethanol and Power Project (on behalf of an applicant). A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 5.9, Table 6.1-1, Section 6.5.9
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. NOISE-1 through NOISE-3.
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 106 through 110.

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant noise impacts and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
THOMAS S. ADAMS-Noise

I, Tom Adams, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Supervising Noise Control Engineer.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Noise for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Norcross, GA on August 26, 2003.

  
Thomas S. Adams

## Appendix A

### Resume of Tom Adams

Tetra Tech FW, Inc. – Supervising Noise Control Engineer

#### EXPERIENCE SUMMARY

Thirty years experience performing environmental noise assessments and noise control engineering for major industrial facilities. Responsible for designing and implementing noise studies for assessing environmental noise impacts associated with major industrial facilities and governmental actions. Tasks include designing and conducting ambient noise surveys, obtaining or developing source level information, predicting noise levels resulting from construction and operation of proposed facilities or governmental actions using computer models, plotting noise contours, determining noise-sensitive locations where significant impacts may occur, assessing impacts, developing and recommending appropriate mitigating measures, and preparing and presenting expert testimony in evidentiary hearings. In addition, duties include providing noise control engineering services to electric utilities and other industrial clients. Mr. Adams has performed these tasks on over 100 gas turbine power plant projects.

Mr. Adams makes frequent use of computer noise models including the state-of-the-art CadnaA model developed by DataKustik in Germany. Other models used less frequently include New York State Department of Public Service NOISECALC for modeling fixed industrial facilities, the Federal Highway Administration "Traffic Noise Prediction Model" for traffic generated noise, STAMINA and OPTIMA models for designing and optimizing roadside noise barriers, and the U.S. Army "MicroB Noise" model for blast noise.

#### EDUCATION/CERTIFICATION

M.S. (Master of Science), Physics, Valdosta State University, Valdosta, GA, 1973  
B.S. (Bachelor of Science), Physics, Valdosta State University, Valdosta, GA, 1971  
Institute of Noise Control Engineering, Board Certified

#### REPRESENTATIVE PROJECT EXPERIENCE

**Energy Development Group, Payette and American Falls Energy Centers, Idaho.**  
Responsible for assessing existing noise levels, predicting future levels and developing mitigating measures to reduce noise impacts to insignificant levels and meet county requirements. Each combined-cycle project contained GE Frame 7 gas turbines, steam turbines, heat recovery boilers and associated equipment.

**Pennsylvania Power and Light, Lower Mt. Bethel Energy Center, Pennsylvania.**  
Assisted Foster Wheeler Power Group in identifying and designing significant noise control measures for the combined-cycle project to meet a very stringent noise limit at the site boundary. Numerous options were investigated before selecting the final design

features.

**Silicon Valley Power Company, Pico Energy Center, Santa Clara, CA.** Responsible for all portions of the noise assessment required for the Application for Certification required by the California Energy Commission. Tasks included monitoring, modeling, assessment of impacts, development of mitigation measures, and preparation of the report for the application.

**Bayshore Power Company, Circulating Fluidized Bed Boiler Repowering Project, Oregon and Ohio.** Responsible for assisting Foster Wheeler USA in resolving several noise concerns related to the new CFB boiler, which is part of the repowering efforts at the Bayshore Power Plant. Developed and installed noise mitigation measures.

**Calpine Corporation, Three Peaking Projects and One Combined Cycle Project, Northern California and San Francisco Bay Area.** Projects consisted of LM5000 and LM6000 simple-cycle gas turbines located at existing substations near load centers. The fourth project (Russell City Energy Center) is a combined-cycle project with 3 Frame 7 gas turbines and a steam turbine located in the east San Francisco Bay area.

**Florida Power and Light, FPL Rio Linda Project, Rio Linda, CA.** Performed noise assessments and prepared an Application for Certification for the California Energy Commission for a project consisting of two Frame 7 gas turbines and a steam turbine. Because of the small size of the site and the presence of nearby residences, a building was required to contain noise produced by the three turbines.

**Florida Power and Light, FPL Linfield Project, Linfield, PA.** Assisted FPL with permitting a proposed combined-cycle power plant consisting of 2 Frame 7 gas turbines and one steam turbine at a site near the PP&L Limerick Nuclear Power Plant in Pennsylvania. FWUSA is the EPC contractor on this project and FWENC is working closely with FWUSA in assessing noise levels and developing mitigation measures to minimize impacts.

**Calpine Corporation, Summer Reliability Program for CAISO, San Jose, CA.** Performed site investigations and impact assessments for three sites in central California for the proposed installation of several TM2500 and LM6000 gas turbine/generator peaking units. Also developed conceptual noise control measures that allowed units to meet applicable noise limits and prepared noise portions of the Application for Certification.

**LG&E Power, Inc., Peaking Plant, Costa Mesa, CA and Washington County, GA.** Performed all aspects of the noise studies required to permit a four-unit simple-cycle peaking station in rural Georgia.

**U.S. Army Corps of Engineers, New England District, Total Environmental Restoration Contract (TERC), Raymark Remediation, Stratford, CT.** Designed, implemented and managed a noise monitoring program to check demolition and

construction noise continuously at the site boundary and at residential receptors in the nearby community. Changed out monitors, downloaded and graphed data, and installed replacement monitors on a weekly basis during the nine-month monitoring program. The project at the 30-acre site involved demolition of a factory complex that had manufactured asbestos-related auto parts, and restoration of the site for shopping center development.

**National Aeronautics and Space Administration (NASA), Langley Research Center, Hampton, VA.** Responsible for investigating a facility-wide noise study to assess noise impacts due to wind tunnel operations. Assessed fourteen wind tunnels and aircraft operations from the NASA hangar.

**National Aeronautics and Space Administration, Space Transportation Main Engine Environmental Assessment (EA), California, Florida, Alabama, and Mississippi.** Responsible for noise portions of the EA evaluating potential impacts of manufacturing and testing of the new, larger space shuttle main engine.

**Florida Power Corporation, Polk County Site Project, Polk County, FL** Responsible for noise portions of a comprehensive environmental permitting effort for 3,000-MW integrated coal gasification combined cycle facility that would contain up to 12 combustion turbine units and four coal gasification plants.

**Florida Power and Light Company, Martin Site, Indiantown, FL** Responsible for noise portion of the Site Certification Application Study for adding a two-unit 760-MW integrated coal gasification/combined cycle power plant to an existing gas-fired power plant. Prepared and presented expert noise testimony at the state site certification hearings.

**Cobb County Department of Transportation, East-West Connector Project, Cobb County, GA.** Responsible for performing environmental assessments of air and performing noise and visual impact studies associated with the proposed new four-lane limited access highway that would pass through an historic district.

**Teledyne Brown Engineering, National Aeronautics and Space Administration, Marshall Space Flight Center, Huntsville, AL.** Responsible for preparing an Environmental Resource Document for the Marshall Space Flight Center. Assessed all aspects of NASA operations having the potential to produce noise.

**Sithe Energies, Oxnard Cogeneration Project, Oxnard, CA.** Provided remedial noise control after plant start-up to reduce plant-generated noise levels to levels specified in the application and to eliminate complaints of nearby neighbors. Successfully implemented additional noise control measures on turbine and generator cabinet ventilation exhausts for the LM5000 combustion turbine package, gas compressors, the steam blowdown system, high pressure steam valves, boiler feed pump motors, and the gas compressor purge vent. Ensured that specified noise limits were met, and worked to eliminate noise complaints.

**Florida Power and Light Company, Cutler Plant, Miami, FL.** Conducted a study of stack noise produced by the induced draft fans of Unit 6. Collected measurements at several locations inside the duct and at the top of the stack using a specially designed sample probe and microphone. Tape-recorded and analyzed all measurements using a 1/24-octave spectrum analyzer. Proposed the installation of a dissipative silencer in the stack breech to eliminate the stack as a source of community noise complaints.

**National Aeronautics and Space Administration, Stennis Space Center, Mississippi.** Responsible for a study to determine the overall sound power level and directivity pattern of a space shuttle solid rocket booster motor. Used nine precision sound level meters, two audio spectrum analyzers and two video cameras to obtain data during a test firing at the Morton Thiokol Facility in Utah. Collected data was used in preparing the Environmental Impact Statement for a proposed new rocket motor test facility at Stennis.

**U.S. Army Corps of Engineers, Huntsville, AL.** Conducted a study to assess the noise impacts of exploding obsolete ordnance in the Army's stockpile at 11 Army depots and ammunition plants across the country. Modeled resulting noise levels using the Micro B Noise computer model developed by the USACE Construction Engineering Research laboratory in Champaign, Illinois.

**TOPIC: TRAFFIC AND TRANSPORTATION**

**WITNESSES: DWIGHT MUDRY, SCOTT BUSA,  
ZORAN RAUSAVLJEVICH**

## TRAFFIC AND TRANSPORTATION

I. Name: Dwight R. Mudry, Ph.D., Zoran Rausavljevic and Scott A Busa

II. Purpose:

Our testimony addresses the Traffic and Transportation issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Dwight Mudry:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Traffic and Transportation section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Traffic and Transportation. A detailed description of my qualifications is contained in the attached resume.

**Zoran Rausavljevic:** I have been employed by Fluor Corporation for 30 years of which the last six I have worked for Duke/Fluor Daniel where I am a Project Manager. As a graduate Mechanical Engineer I have held positions of increasing responsibilities in the areas of engineering and design on a variety of the energy related projects including combined cycle power generation facilities, commercial application of fuel cells, oil and gas processing facilities; and others. I am familiar with all phases of the CEC's power plant siting process and I have previously testified before the Commission on behalf of an applicant for the High Desert Power Project. A more detailed description of my qualifications is contained in the attached resume.

I have been responsible for preliminary engineering and design activities for the Tesla Power Project from the AFC's preparation phase to date. I prepared portions of the Traffic and Transportation Section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with this testimony.

**Scott Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power

plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Traffic and Transportation section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Traffic and Transportation. A detailed description of my qualifications is contained in the attached resume.

#### IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Section 5.11, Table 6.1-1, Section 6.5.11
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. TRAFFIC-1 through TRAFFIC-13.
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Number 112.

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

#### V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant traffic and transportation impacts and will comply with all applicable laws, ordinances, regulations and standards. However, we understand that CEC Staff will be substantially rewriting the Conditions of Certification in its supplemental testimony for this topic area and we will comment on whether we agree with them as re-written in our Rebuttal Testimony.

STATE OF CALIFORNIA  
Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
DWIGHT R. MUDRY – Traffic and  
Transportation

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.

  
\_\_\_\_\_

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

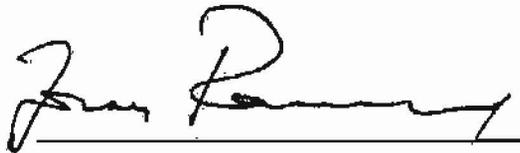
Application for Certification for the  
Tesla Power Project

**DECLARATION OF ZORAN  
RAUSAVLJEVICH – Traffic and  
Transportation**

I, Zoran Rausavljevich, declare as follows:

1. I am presently employed by Fluor Corporation where I have been assigned to Duke/Fluor Daniel, as a Project Manager.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Aliso Viejo, CA on August 26, 2003.

  
\_\_\_\_\_

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

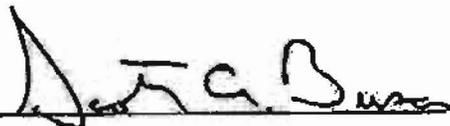
Application for Certification for the  
Tesla Power Project

**DECLARATION OF SCOTT A. BUSA**  
**- Traffic and Transportation**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on August 26, 2003.

  
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## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

**Modesto Irrigation District, Power Plant EIR** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

**Northern California Power Agency, Environmental Assessments for Five Power Plants** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

**Corn Products Corporation, Coal Fired Cogeneration Project EIR** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

**Los Angeles Harbor Department, Environmental Impact Report** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

**Rio Linda Water District, Initial Study and Negative Declaration** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

**Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

**Government of Nepal, Hydroelectric Project Environmental Assessment** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

## Appendix A

### Resume of Zoran Rausavljevič

Duke/Fluor Daniel - Project Manager

#### EXPERIENCE SUMMARY

Mr. Rausavljevič's professional career includes 34 years of diversified technical and project management experience directly related to the engineering and design of power generation plants, and oil and gas processing facilities. He has been with Fluor Corporation for 30 years of which the last six have been with Duke/Fluor Daniel (D/FD). As a Project Manager in D/FD, Mr. Rausavljevič has been responsible for conducting and managing multidisciplinary engineering activities associated with the preparation of permit applications for power plant siting and environmental impact assessments. His project management experience also includes the projects for renewable energy (fuel cell and geothermal), design of a nuclear waste processing facility for DOE, technical and cost feasibility studies, and acquisition due diligence. Prior to moving into Project Management, Mr. Rausavljevič held a position of the Supervisor in Mechanical Engineering Department. He has significant experience in the design area of process heat transfer equipment, including waste heat recovery steam generators (HRSGs), cooling towers and steam condensers.

#### EDUCATION

Business Management Program, UCLA, 1984

B.S.M.E, Mechanical Engineering, University of Belgrade, 1966.

#### SIGNIFICANT EXPERIENCE

##### Fluor - Project Management (1992 - Present)

Project Manager assigned to D/FD with responsibility for preliminary engineering in support of the development of new power plant projects and preparation of Application for Certifications (AFC) for submission to the California Energy Commission, CA for the following projects:

- *Tesla Power Project, a 1120 MW combined cycle facility proposed by FPL Energy for Alameda County, California.*
- *Colusa Power Plant Project, a 500 MW combined cycle facility proposed (but withdrawn) by Reliant Energy for Colusa County, California.*
- *Rio Linda/Elverta Power Project, a 560 MW power plant proposed (but withdrawn) by FPL Energy for Sacramento, California.*
- *High Desert Power Project, a 720 MW combined cycle facility licensed by CEC and built by Constellation Power in Victorville, California.*
- *Western MSCC Power Project, a 500 MW combined cycle facility licensed by CEC and proposed by Edison Mission Energy for western Kern County, California.*

***AES Southland Expansion Projects at Redondo Beach, Los Alamitos and Huntington Beach generating stations.*** Project Manager for feasibility studies and preliminary engineering to replace the existing power generation steam units with combined cycle power plants.

***Fuel Cell Commercialization Program for FuelCell Energy, Inc.*** Project Manager with responsibility for home office engineering activities for development of a commercial version of the 3 MW Direct Fuel Cell power plant.

Project Manager for Fluor's Advance Technology Division and Power Generation business units from 1992 to 1997 with responsibility for the following projects:

***Molten Metal Technology Demonstration Plant for DOE.*** Engineering Manager with responsibility for a conceptual design of the MMT's Catalytic Extraction Process Facility proposed for the treatment of nuclear hazardous waste.

***Kalina Cycle Demonstration Plant Project for GE/SMUD.*** Project Engineer responsible for the design and cost estimate of shell and tube heat exchangers proposed for bottoming cycle of the Kalina Cycle Demonstration Plant.

***Hanford Waste Vitrification Project for DOE.*** Area/Account Manager responsible for design of the third and fourth floor of the Vitrification Building proposed to process nuclear hazardous waste.

#### **Fluor - Mechanical Engineering (1973 - 1992)**

Supervisor of Heat Transfer Engineering from 1981 to 1992. In this capacity, the major responsibilities included development and maintenance of design standards for heat transfer equipment; staff training and project staffing; and employees' career counseling. From 1973 to 1981 held positions of increasing responsibility in the areas of heat exchanger design and as a lead mechanical engineer. The major projects included: Midland Cogeneration Venture - a conversion of CMS Energy's unfinished nuclear power plant into a gas fired 1385 MW cogeneration facility in Midland, Michigan; Lisburne Facilities Project - an oil and gas production facility for ARCO in Prudhoe Bay, Alaska; refinery expansion projects for Pertamina, Texaco, Unocal, Exxon, and Lagoven; a grass-root petrochemical complex for Saudi Petrochemical Company; and an oil from coal complex for Sasol Ltd. in South Africa.

#### **Ralph M. Parsons Co. (1969 - 1973)**

As a Mechanical Engineer responsible for the design and procurement of process heat transfer equipment used in the oil and gas processing facilities. The activities included writing narrative specifications, preparing requests for quotations, analyzing bids and selecting vendors, preparing purchase requests, reviewing drawings, and following up on fabrication and inspection requirements.

## Appendix A

### Resume of Scott A. Busa FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

***Tesla Power Project*** – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

***Altamont Pass Wind Generation Optimization Projects*** – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

*Rio Linda / Elverta Power Project* – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

*Blythe Power Project* - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

*Mergers and Acquisition Due Diligence* – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

*Environmental Auditing* – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

*Clean Air Act* – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

**TOPIC: COMPLIANCE**

**WITNESSES: SCOTT BUSA**

## COMPLIANCE MONITORING AND CLOSURE PLAN

I. Name: Scott A. Busa

II. Purpose:

My testimony addresses the Compliance Monitoring and Closure Plan associated with the construction and operation of the Tesla Power Project.

III. Qualifications:

**Scott A. Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Project Description section of the AFC and reviewed all of the compliance measures summarized in AFC LORS Table 6.1-1 (Summary of LORS and Compliance). A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC LORS Table 6.1-1

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusions regarding General Conditions including Compliance Monitoring and Closure Plan described in the Section 7 of the Final Staff Assessment. I agree that the

Tesla Power Project will not result in significant environmental impacts and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
Scott A. Busa – Compliance  
Monitoring and Closure Plan**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Compliance for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on August 26, 2003.

  
\_\_\_\_\_

## Appendix A

### Resume of Scott A. Busa FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

*Tesla Power Project* – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

*Altamont Pass Wind Generation Optimization Projects* – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

***Rio Linda / Elverta Power Project*** – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

***Mergers and Acquisition Due Diligence*** – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

***Environmental Auditing*** – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

***Clean Air Act*** – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NOx, SO2, CO2, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

**TOPIC: ALTERNATIVES**

**WITNESSES: DWIGHT MUDRY, SCOTT BUSA,  
ZORAN RAUSAVLJEVICH**

## ALTERNATIVES

I. Name: Dwight R. Mudry, Ph.D., Zoran Rausavljevic, and Scott A Busa

II. Purpose:

Our testimony addresses the Alternatives issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Dwight R. Mudry:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant). I prepared portions of the Alternatives section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Alternatives. A detailed description of my qualifications is contained in the attached resume.

**Zoran Rausavljevic:** I have been employed by Fluor Corporation for 30 years of which the last six I have worked for Duke/Fluor Daniel where I am a Project Manager. As a graduate Mechanical Engineer I have held positions of increasing responsibilities in the areas of engineering and design on a variety of the energy related projects including combined cycle power generation facilities, commercial application of fuel cells, oil and gas processing facilities; and others. I am familiar with all phases of the CEC's power plant siting process and I have previously testified before the Commission on behalf of an applicant for the High Desert Power Project. A more detailed description of my qualifications is contained in the attached resume.

I have been responsible for preliminary engineering and design activities for the Tesla Power Project from the AFC's preparation phase to date. I prepared portions of the Alternatives Section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with this testimony.

**Scott Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting,

technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Alternatives section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Alternatives. A detailed description of my qualifications is contained in the attached resume.

#### IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Section 3.10
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 14 through 22
- Exhibit 4, Response to Second Set of CEC Data Requests, Response Number 267

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

#### V. Opinion and Conclusions

We have reviewed Alternatives of the Final Staff Assessment and we concur with the conclusions that there are no alternative technologies or alternative sites that would reduce or eliminate the potential environmental impacts of the Tesla Power Project. Overall, the Tesla Power Project will not result in significant impacts and will comply with all applicable laws, ordinances, regulations and standards. While the FSA analyzed alternative sites different from the those analyzed by the TPP team, both our analysis and Staff's analysis demonstrate that alternative siting of the TPP would not substantially lessen any significant environmental impacts over development at the TPP preferred site. As demonstrated by Midway Power, LLC's testimony all impacts associated with development, construction and operation of the TPP at the preferred site are mitigated to less than significant levels.

STATE OF CALIFORNIA  
Energy Resources  
Conservation and Development Commission

In the Matter of:

**DOCKET NO. 01-AFC-21**

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DWIGHT R. MUDRY - Alternatives**

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Alternatives for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.

  
\_\_\_\_\_

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

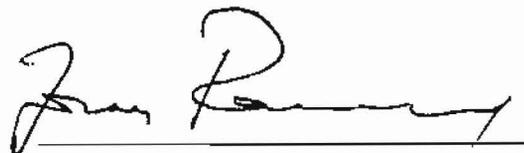
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
ZORAN RAUSAVLJEVICH -  
Alternatives**

I, Zoran Rausavljevich, declare as follows:

1. I am presently employed by Fluor Corporation where I have been assigned to Duke/Fluor Daniel, as a Project Manager.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Alternatives for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Aliso Viejo, CA on August 26, 2003.



*Zoran Rausavljevich*

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
SCOTT A. BUSA - Alternatives**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Alternatives for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on August 26, 2003.

  
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## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

***Modesto Irrigation District, Power Plant EIR*** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

***Northern California Power Agency, Environmental Assessments for Five Power Plants*** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

***Corn Products Corporation, Coal Fired Cogeneration Project EIR*** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

***Los Angeles Harbor Department, Environmental Impact Report*** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

***Rio Linda Water District, Initial Study and Negative Declaration*** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

***Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan*** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

***Government of Nepal, Hydroelectric Project Environmental Assessment*** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

#### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

## Appendix A

### Resume of Zoran Rausavljevič Duke/Fluor Daniel - Project Manager

#### EXPERIENCE SUMMARY

Mr. Rausavljevič's professional career includes 34 years of diversified technical and project management experience directly related to the engineering and design of power generation plants, and oil and gas processing facilities. He has been with Fluor Corporation for 30 years of which the last six have been with Duke/Fluor Daniel (D/FD). As a Project Manager in D/FD, Mr. Rausavljevič has been responsible for conducting and managing multidisciplinary engineering activities associated with the preparation of permit applications for power plant siting and environmental impact assessments. His project management experience also includes the projects for renewable energy (fuel cell and geothermal), design of a nuclear waste processing facility for DOE, technical and cost feasibility studies, and acquisition due diligence. Prior to moving into Project Management, Mr. Rausavljevič held a position of the Supervisor in Mechanical Engineering Department. He has significant experience in the design area of process heat transfer equipment, including waste heat recovery steam generators (HRSGs), cooling towers and steam condensers.

#### EDUCATION

Business Management Program, UCLA, 1984  
B.S.M.E, Mechanical Engineering, University of Belgrade, 1966.

#### SIGNIFICANT EXPERIENCE

##### **Fluor - Project Management (1992 - Present)**

Project Manager assigned to D/FD with responsibility for preliminary engineering in support of the development of new power plant projects and preparation of Application for Certifications (AFC) for submission to the California Energy Commission, CA for the following projects:

- *Tesla Power Project, a 1120 MW combined cycle facility proposed by FPL Energy for Alameda County, California.*
- *Colusa Power Plant Project, a 500 MW combined cycle facility proposed (but withdrawn) by Reliant Energy for Colusa County, California.*
- *Rio Linda/Elverta Power Project, a 560 MW power plant proposed (but withdrawn) by FPL Energy for Sacramento, California.*
- *High Desert Power Project, a 720 MW combined cycle facility licensed by CEC and built by Constellation Power in Victorville, California.*
- *Western MSCC Power Project, a 500 MW combined cycle facility licensed by CEC and proposed by Edison Mission Energy for western Kern County, California.*

***AES Southland Expansion Projects at Redondo Beach, Los Alamitos and Huntington Beach generating stations.*** Project Manager for feasibility studies and preliminary engineering to replace the existing power generation steam units with combined cycle power plants.

***Fuel Cell Commercialization Program for FuelCell Energy, Inc.*** Project Manager with responsibility for home office engineering activities for development of a commercial version of the 3 MW Direct Fuel Cell power plant.

Project Manager for Fluor's Advance Technology Division and Power Generation business units from 1992 to 1997 with responsibility for the following projects:

***Molten Metal Technology Demonstration Plant for DOE.*** Engineering Manager with responsibility for a conceptual design of the MMT's Catalytic Extraction Process Facility proposed for the treatment of nuclear hazardous waste.

***Kalina Cycle Demonstration Plant Project for GE/SMUD.*** Project Engineer responsible for the design and cost estimate of shell and tube heat exchangers proposed for bottoming cycle of the Kalina Cycle Demonstration Plant.

***Hanford Waste Vitrification Project for DOE.*** Area/Account Manager responsible for design of the third and fourth floor of the Vitrification Building proposed to process nuclear hazardous waste.

#### **Fluor - Mechanical Engineering (1973 - 1992)**

Supervisor of Heat Transfer Engineering from 1981 to 1992. In this capacity, the major responsibilities included development and maintenance of design standards for heat transfer equipment; staff training and project staffing; and employees' career counseling. From 1973 to 1981 held positions of increasing responsibility in the areas of heat exchanger design and as a lead mechanical engineer. The major projects included: Midland Cogeneration Venture - a conversion of CMS Energy's unfinished nuclear power plant into a gas fired 1385 MW cogeneration facility in Midland, Michigan; Lisburne Facilities Project - an oil and gas production facility for ARCO in Prudhoe Bay, Alaska; refinery expansion projects for Pertamina, Texaco, Unocal, Exxon, and Lagoven; a grass-root petrochemical complex for Saudi Petrochemical Company; and an oil from coal complex for Sasol Ltd. in South Africa.

#### **Ralph M. Parsons Co. (1969 - 1973)**

As a Mechanical Engineer responsible for the design and procurement of process heat transfer equipment used in the oil and gas processing facilities. The activities included writing narrative specifications, preparing requests for quotations, analyzing bids and selecting vendors, preparing purchase requests, reviewing drawings, and following up on fabrication and inspection requirements.

## Appendix A

### Resume of Scott A. Busa

FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

***Tesla Power Project*** – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

***Altamont Pass Wind Generation Optimization Projects*** – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

*Rio Linda / Elverta Power Project* – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

*Blythe Power Project* - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

*Mergers and Acquisition Due Diligence* – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

*Environmental Auditing* – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

*Clean Air Act* – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

**TOPIC: WORKER SAFETY AND FIRE PROTECTION**

**WITNESSES: LIDA MOUSSAVIAN, SCOTT BUSA**

## WORKER SAFETY

I. Name: Lida Moussavian and Scott A. Busa

II. Purpose:

Our testimony addresses the Worker Safety issues associated with the construction and operation of the Tesla Power Project.

III. Qualifications:

**Lida Moussavian:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for 17 years and am presently a Principal Engineer with that organization. I have a B.S. Degree in Chemical Engineering and I have 19 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance.

I supervised the preparation of the Worker Safety section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Worker Safety. A detailed description of my qualifications is contained in the attached resume.

**Scott Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Worker Safety section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Worker Safety. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 5.14
- Exhibit 3, Responses to CEC First Set of Data Requests, Response Number 205.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant Worker Safety impacts and will comply with all applicable laws, ordinances, regulations and standards.

Further, Midway Power, LLC has agreed to give Alameda County the sum of \$500,000 to be used to enhance fire protection in the Eastern portion of Alameda County. It is important to note that Alameda County could share this sum with other fire protection agencies including the City of Tracy Fire Department. While the City of Tracy Fire Department has contended that it will be the first responder, we disagree. The relationship between Alameda County and the City of Tracy is extremely strained. In fact, statements made in the East Altamont proceeding indicate that there is some question of whether the two fire departments will continue to render mutual aid under the existing mutual aid agreement between the two agencies. Without a mutual aid agreement, the City of Tracy Fire Chief has stated that he will not respond and we believe he would be under not legal obligation to do so.

However, we agree with the Staff Assessment analysis and conclusion, that without the City of Tracy Fire Department responding to the TPP, Alameda County Fire Department could provide adequate response and with the measures incorporated into the project, the TPP would not have any significant incremental burden on Alameda County's ability to respond to a fire or medical emergency.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

**DOCKET NO. 01-AFC-21**

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
LIDA MOUSSAVIAN – Worker Safety**

I, Lida Moussavian, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Principal Engineer.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Worker Safety for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.



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STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
SCOTT A. BUSA – Worker Safety**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Worker Safety for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Juno Beach, FL on August 26, 2003.

  
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## Appendix A

### Resume of Lida Moussavian

Tetra Tech FW, Inc. – Principal Engineer

#### EXPERIENCE SUMMARY

Ms. Moussavian has over 19 years of experience in the field of environmental and air quality consulting and engineering. Responsible for managing and conducting multidisciplinary environmental studies. Her experience includes managing, consulting, engineering and technical support in the areas of permitting, regulatory and compliance assessment, agency coordination, negotiations, emissions inventory, offset evaluation, air pollution control technology assessment, air emissions estimation, licensing of power plants, environmental auditing, air toxic emissions, and environmental impact reports.

#### EDUCATION

BS, Chemical Engineering, University of California, Berkeley, 1983

#### TRAINING/CERTIFICATIONS

American Institute of Chemical Engineers Certified Engineer in Training (EIT)

Registered Environmental Assessor (REA): California, 1992

Certified in Hazardous Materials Management (CHMM), University of California, Irvine

#### REPRESENTATIVE PROJECT EXPERIENCE

*California Institute of Technology (CALTECH); Pasadena, CA* – Project Manager responsible for preparation and submission of air permit application for a 14-MW cogeneration facility to be located on campus. The application was submitted to the South Coast Air Quality Management District (SCAQMD) and is currently in the review process.

*Calpine C\* Power; CA* - Air Quality Manager responsible for the development and preparation of AFCs for submittal to the CEC for two proposed peaking power plants in the Bay Area and northern San Joaquin Valley. Air quality permitting documentation includes emission estimates, health risk assessment, best available control technology (BACT), offset analysis and a comprehensive evaluation of the projects compliance with the local, state, federal, and the CEC regulations and requirements. Air permit applications are submitted to the Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Unified Air Pollution Control District for these projects.

*Pacific Gas & Electric (PG&E); North Baja Project, CA* - Air Quality Engineer responsible for analysis and project impact evaluation for the North Baja gas pipeline and compressor station construction. A Resource Report 9 was prepared to include applicability and/or compliance analysis of the project against the federal, state, and local requirements.

**360 Network; CA** – Air Quality Manager responsible for air permit document preparation and obtaining permit approval for emergency generators throughout California. The generators would be installed in association with the fiber optic lines, and the permits were applied from 12 different air quality agencies.

**Navy Southwest Division; CA** – Air Quality Manager responsible for coordination of air quality monitoring activities related to various remediations at Navy sites. The projects include ambient air quality and meteorological monitoring of various air pollutants at the site boundaries in Alameda, San Diego, and Long Beach, California.

**Hamakua Energy Partners; HI** – Project Manager responsible for a Prevention of Significant Deterioration (PSD) and a Title V air permit application providing consulting services and compliance strategy assistance for a 58-MW triple fuel fired combined cycle cogeneration facility. The work included air emission estimation, air quality modeling analysis, emission offset evaluation, BACT assessment, applicable regulatory requirements determination, and air quality regulation compliance analysis. She prepared and submitted the air permit applications to the State of Hawaii and U.S. Environmental Protection Agency (EPA) Region IX. Her work included many ongoing negotiations prior to obtaining final approval and permits from the agencies.

**Harbor Cogeneration Company; CA** – Project Manager providing air quality consulting services for coordination and development of a Clean Air Act Title V air permit. The facility consisted of a GE Frame 7 combustion turbine, air pollution control system, and appurtenant equipment. The project includes air emission estimates evaluation, regulatory compliance analysis, and providing support during the permit application review process.

**National Aeronautics and Space Administration (NASA)-Jet Propulsion Laboratory (JPL); CA** – Task Manager responsible for coordinating and conducting air quality engineering consulting for the facility. The project consisted of site visits, air emission inventory, and a study of federal, state and district regulations; control technology evaluation; as well as compliance determination. The project included an assessment of the applicable regulations and requirements.

**Elk Hills Power Project; CA** – Developed and prepared the air quality analysis for a 500-MW combined cycle power plant. The project required a PSD air permit application as well as an AFC. Performed a detailed BACT, air emission estimate, offset and regulatory compliance analysis. Project proponents were Sempra Energy Resources (SER) and Occidental Energy Ventures Corporation (OEVC).

**Saguaro Power Company; NV** – Responsible for a Title V air permit application. Responsible for determining applicable air quality rules, regulations and requirements, performing regulatory compliance assessment of a cogeneration plant located within Clark County Health District, Nevada, jurisdiction. The project consisted of Title V operating permit preparation for the cogeneration facility consisting of two Frame 6 combustion turbines and a Selective Catalytic Reduction (SCR) system.

**IBM; VT** – Performed a top-down BACT analyses for emissions of NO<sub>x</sub>, SO<sub>2</sub>, and PM<sub>10</sub> on a fossil fuel fired boiler plant. The analyses were used in a PSD application that was submitted to the State of Vermont, Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division.

**San Diego Naval Station; CA** – Prepared an air permit application for a remediation, soil vapor extraction system/thermal oxidation unit. The project included air emission estimates, health risk assessment, BACT, and offset and regulatory compliance analyses.

**JPL; CA** – Project Manager responsible for preparing an air permit application for a soil vapor extraction carbon adsorber unit. The project included air emission calculations, health risk assessment, BACT, and offset and regulatory compliance analyses.

**Navy Southwest Division; Fire Fighter Training Facility, Naval Station; CA** – Prepared and submitted an air permit application for construction and operation of a soil and water treatment system consisting of a thermal oxidizer and a carbon adsorption. The application was prepared in compliance with San Diego Air Pollution Control District rules and regulations.

**Teledyne Cast Products; San Gabriel Basin Assessment; CA** – Responsible for the evaluation of an existing screening health risk assessment and developing a modified, more representative health risk analysis for a metal casting company. The facility produces metallic products used in medical and automotive applications.

**NASA - Dryden Flight Research Center (DFRC); CA** – Conducted an air pollution compliance assessment for DFRC. Responsible for reviewing and determining the facility's compliance status in regard to existing and future applicable local, state, and federal air quality regulations and requirements. This project consisted of a review and study of applicability and requirements of the Clean Air Act Amendments (CAAA).

**Inland Container Corporation; CA** – Managed and provided technical directions for preparation of a Risk Management Prevention Program (RMPP) and the Continuous Emissions Monitoring System (CEMS) certification process of a cogeneration facility pursuant to Regional Clean Air Incentives Market (RECLAIM) requirements. The project consists of the addition of the SCR system as a control technology for nitrogen oxide emissions and utilization of anhydrous ammonia in the SCR.

**Rhône-Poulenc Basic Chemicals Company; CA** – As part of the SCAQMD RECLAIM Compliance program, a CEMS was installed on an existing sulfuric acid plant. Responsible for permitting document preparation, installation, testing and certification of the CEMS in compliance with RECLAIM.

#### **ADDITIONAL EXPERIENCE**

Served as air quality consultant on behalf of CEC for evaluation and review of the Santa Maria Aggregate proposed 50-MW bituminous diatomite and petroleum coke-fired cogeneration project. The project comprised of a circulating fluidized bed combustor

(CFBC) to drive a steam turbine and generate electricity for sale to PG&E. Provided detailed evaluation and compliance analysis of the project with respect to all applicable federal, state, and local rules and requirements. Coordinated the review process and evaluation efforts with Santa Barbara County Air Pollution Control District.

As a consultant to CEC, prepared written expert testimony on potential air quality impacts and mitigation measures for a 99-MW cogeneration facility to be located at the Richmond refinery in California. Coordinated closely with BAAQMD to evaluate compliance with the requirements of New Source Review Rule, such as BACT and offsets, as well as compliance with all other applicable air pollution rules and regulations.

Prepared written expert testimony on potential air quality impacts and mitigation measures for a 90-MW cogeneration facility located at the American I, vegetable processing Plant in King City, Monterey County, California; and an 81-MW cogeneration facility located at the Champlin (now called Harbor Cogeneration facility) Petroleum Company, Wilmington, California.

Prepared Application for Authority to Construct permit application for O'Brien Energy for a 48-MW natural gas-fired cogeneration facility to be located within the jurisdiction of the Santa Barbara County Air Pollution Control District.

Conducted a BACT analysis and summarized findings in a PSD permit application of EPA Region VI for a 210-MW cogeneration facility to be located in Sweetwater, Texas (U.S. Gypsum).

Prepared a technical work plan in the areas of air pollution control assessment and laboratory scale test program for a hazardous waste incinerator to be located at Rocky Mountain Arsenal, Colorado.

Served as Air Quality Engineer for the 48-MW cogeneration project at the Wilmington refinery. Prepared the Application for Authority to Construct for submittal to the SCAQMD. Also, prepared an AFC for Qualifying Status for submittal to the Federal Energy Regulatory Commission; and a Petition for Permanent Exemption, which was submitted to the U.S. Department of Energy, Economic Regulatory Administration (Unocal).

Served as Air Quality Engineer for the landfill gas recovery unit and the landfill gas-fired steam electric generating plant in Coyote Canyon, California. Prepared the Application for Authority to Construct for submittal to the SCAQMD.

## Appendix A

### Resume of Scott A. Busa

FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

*Tesla Power Project* – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

*Altamont Pass Wind Generation Optimization Projects* – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

***Rio Linda / Elverta Power Project*** – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

***Mergers and Acquisition Due Diligence*** – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

***Environmental Auditing*** – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

***Clean Air Act*** – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

**TOPIC: SOIL AND WATER RESOURCES**

**WITNESSES: AMANDA JOHNSON, CHRIS  
HANSMEYER, DAVID OSIAS,  
DAVID JONES, DUANE MCCLOUD**

## SOIL AND WATER RESOURCES

I. Name: Dave Jones, Chris Hansmeyer, Amanda Johnson,  
David Osias, and Duane McCloud

II. Purpose:

Our testimony addresses the Soil and Water Resources issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Chris Hansmeyer:** Christopher B. Hansmeyer is a practicing attorney in San Diego, California. He received his Bachelor of Science degree in Natural Resource Planning and Interpretation in 1996 from Humboldt State University, where he graduated *summa cum laude*. He obtained his Juris Doctorate degree in 1999 from Boalt Hall School of Law, University of California, Berkeley, with an emphasis in environmental law.

Mr. Hansmeyer has extensive experience with surface appropriative and riparian rights, groundwater rights, Colorado River rights, entitlements under state and federal water contracts, reasonable use, waste and conservation, and the sale, lease and transfer of water and water rights. Mr. Hansmeyer has represented power-plant developers with water supply issues including water supply identification, due diligence on supply reliability, and water supply contract drafting and negotiation. Mr. Hansmeyer has also represented numerous developers regarding water supply and water acquisition matters throughout California. He has conducted numerous water rights analyses for multiple golf course developers regarding riparian water rights. He has also represented residential developers regarding water connection fees and water connection allocation programs. Prior to his legal career, Mr. Hansmeyer worked as a project designer in the fields of Architecture and Engineering. Mr. Hansmeyer conducted site analysis including identification of native plant and animal species, soil and other natural resources analysis. Mr. Hansmeyer's pre-law education was centered upon the study of natural resources from both planning and policy perspectives. His studies included significant work in the areas of hydrology, soils and range management, wildlife, and forestry.

This combination of a solid scientific background in natural resources, project design and development experience, and his current legal practice specializing in land use and water law are summarized more completely in the attached resume.

**Dave Jones:** I have worked for CH2M HILL for the past 2 years and am presently a Principal Engineer with the Water Group for that organization. Prior to CH2M HILL, I was a Managing Engineer with the consulting engineering firm of Brown and Caldwell for 17 years. I have a M.S. Degree in Civil Engineering from Stanford University, 25 years of water engineering experience and have been practicing water engineering in the State of California since 1983. I have been conducting engineering services on energy and water projects throughout my 25 years of engineering experience including, most recently, water supply and permitting services for the Russell City Energy Center, Rio Linda/Elverta Power Project, Los Esteros Critical Energy Facility, Geysers Steam Field Complex, and the initial permitting activities for the East Altamont Energy Center.

I prepared the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Water Resources. A detailed description of my qualifications is contained in the attached resume.

**Duane McCloud:** I have worked for FPL Energy for over five years and am presently a Project Manager in their Construction and Engineering Division supporting the development of new power plant projects. I have a BS in Chemical Engineering and over 21 years of experience in the power generation industry including the areas of technical service, operations, design, project management, and project development. I have been involved with the development of the Tesla project from its initial conception, development, and through the entire CEC process to date.

I prepared portions of the Project Description section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with the Soil and Water Resources. A detailed description of my qualifications is contained in the attached resume.

**David Osias:** David L. Osias is a partner in the firm's San Diego office. He received his Bachelor of Science degree in 1976 from the University of California, Davis where he graduated with honors and was elected to the Phi Kappa Phi National Honor Society. He obtained his Juris Doctorate degree in 1979 from Boalt Hall School of Law, University of California, Berkeley. Mr. Osias has extensive experience with surface appropriative and riparian rights, groundwater rights, Colorado River rights, entitlements under state and federal water contracts, reasonable use, waste and conservation, and the sale, lease and transfer of water and water rights. He taught a water law course at the University of San Diego School of Law for four years. He provides specialized counsel in transactions, financings and litigation involving water resources.

Mr. Osias has represented power-plant developers with water supply issues including water rights and acquisition analyses for a solar power plant in the Mojave basin; water rights analysis and due diligence regarding a potential hydroelectric power plant acquisition in Northern California; water supply due diligence for reclaimed tertiary-treated water in the South San Francisco Bay area for two natural gas-fueled power plants; water supply due diligence and negotiations for two natural gas-fueled power plant sites in the Northern San Joaquin Valley; and a water rights analysis for a natural gas-fueled power plant adjacent to the Colorado River. Mr. Osias has appeared on behalf of clients before state and federal courts and the California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB). Dealings with the DWR involved negotiations for State Water Project water transfers, investigations, negotiations concerning water transfers, and matters of water policy. Mr. Osias has participated in hearings before the SWRCB regarding waste and misuse of water and water rights, and has been involved in appropriative applications, permit proceedings, as well as petitions for the transfer of water. Mr. Osias has litigated water wheeling issues before the state trial and appellate courts.

Mr. Osias has also represented numerous developers regarding water supply and water acquisition matters throughout California including one involving groundwater supply issues on the Nevada state line. He has conducted numerous water rights analyses for multiple golf course developers regarding riparian water rights. Mr. Osias represents an aquaculture operation in connection with groundwater rights and transfers in the Coachella Valley. He has also represented residential developers regarding water connection fees and water connection allocation programs. Recently, Mr. Osias has committed substantial time representing an irrigation district in negotiating and documenting an agreement for a 75-year, 300,000 acre-foot per year transfer, the largest long-term transfer of conserved water in this history of California. That representation also involves transportation wheeling disputes, negotiating and drafting a comprehensive settlement agreement with three other public water districts, the U.S. Department of the Interior and the California DWR and the SWRCB. He is also coordinating the environmental compliance team for the water transfer under NEPA, CEQA and the Endangered Species Act.

**Amanda Johnson:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past two years and am presently a Senior Environmental Technician with that organization. I have a B.A. Degree in Geography and I have two years of experience in evaluation of environmental impacts to agriculture and soils.

I prepared the Agriculture and Soils section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Agriculture and Soils. A detailed description of my qualifications is contained in the attached resume

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 5.4, Table 6.1-1, Section 6.5.6
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. SOILS-1 through SOILS-3
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 175 through 204
- Exhibit 4, Responses to Second Set of CEC Data Requests, Response Numbers 254 through 259, 261 through 266, and 269 through 282
- Exhibit 26, White Paper relating to DWR reliability, dated November 15, 2002
- Exhibit 27, Engineering Report, dated March 2003
- Exhibit 28, Map of Water Conveyance Facilities
- Exhibit 29, Letter from DWR to CEC concerning White Paper, dated November 26, 2002

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and agree with the Conditions of Certification **SOIL & WATER** 1 through 10 and concur with the conclusion that the Tesla Power Project will not result in significant agriculture and soil resources impacts and will comply with all applicable laws, ordinances, regulations and standards.

We disagree with the Staff's conclusion and the Conditions of Certification contained in the Addendum to the Staff Assessment that the TPP should be required to use reclaimed water from the City of Tracy for the reasons discussed herein.

## Testimony of Dave Jones

This testimony is a summary of the "White Paper" on Water Supply Reliability, dated November 15, 2002 (Exhibit 26) and the related "Engineering Report" on North-Reach User Impacts, dated March 2003 (Exhibit 27), that I wrote on behalf of FPL Energy for the Tesla Power Project (TPP).

Before summarizing the results of my engineering analysis, I want to comment on the FSA. I agree with the CEC staff's opinion that the reliability of the applicant's proposed water supply is equivalent to the staff's desired recycled water supply. From an engineering standpoint, there is no significant difference in reliability. Where I disagree is in staff's attribution of a "loss of power revenue" figure contained in Soil and Water Analysis Table 5, as a result of potential outages on the California Aqueduct. As the following analysis will demonstrate, even if staff's estimate of 2 days of potential outages were accurate (an estimate that ignores alternative supply measures that are routinely undertaken by DWR during such outages), the TPP's on-site water storage facilities would provide the plant with the necessary water to continue operation thereby eliminating any potential losses in revenue.

### **Background on Water Supply Reliability**

Exhibit 28 presents a map depicting the water supply facilities for the TPP. This exhibit shows the proposed location of the TPP including the proposed turn-out on the State Aqueduct and relevant State Water Project (SWP) facilities including the Banks Pumping Plant (BPP). Note that the turn-out is located downstream of Bethany Reservoir in Pool 2 of the State Aqueduct between check stations 1 and 2. The South Bay Aqueduct (SBA) users and other users in the north-reach of the State Aqueduct share Pool 1 (Bethany Reservoir) and Pool 2 with the TPP.

The TPP is proposed to have an 8.3 million gallon water storage tank on-site to provide short-term water supply reliability to the plant. This tank would provide for one to two days of power plant supply, depending on ambient conditions, in the event of a total supply interruption from the State Aqueduct. This local storage was developed to provide reliability in the event of a pump failure or power interruption at the turnout location as well.

**Table WT-2** presents a comparison of the flows pumped by the South Bay Pumping Plant (SBPP), used by SBA users, and proposed to be used by the TPP. For example, flows for the Year 2000 show that the Banks PP delivered over 3.7 million AF, the SBPP delivered over 130,000 AF, and, if the TPP had been operational, it would have consumed just over 5,000 AF.

**Table WT-2  
Comparison of Flows**

	<b>Banks Pumping Plant (Banks PP)</b>	<b>South Bay Pumping Plant (SBPP)</b>	<b>Tesla Power Project (TPP)</b>
Year 2000 <sup>1</sup>	3,744,357 AF	130,314 AF	5,068 AF
Current Maximum <sup>2</sup>	6,680 cfs <sup>3</sup>	310 cfs <sup>4</sup>	12 cfs
Projected Maximum <sup>5</sup>	6,680 cfs	410 cfs <sup>6</sup>	12 cfs

<sup>1</sup>Assumes Year 2000 average for Banks PP and SBA flows. Assumes projected annual average for TPP.

<sup>2</sup> Shows maximum pumping plant capacity for Banks PP and SBPP. Shows projected peak day demand for TPP.

<sup>3</sup> Permitted Operating Capacity. Physical capacity = 10,300 cfs.

<sup>4</sup> Actual operational capacity. Rated nameplate capacity is 345 cfs.

<sup>5</sup> Shows maximum projected pumping plant capacity for Banks PP and SBPP. Shows projected peak day demand for TPP

<sup>6</sup> Projected operational capacity based on Zone 7 improvements expected by 2009.

Under existing demand and normal operating conditions , the TPP, on average, would use 0.14 percent of Banks PP flows. . Therefore, under normal operating conditions, there is ample water supply availability for the TPP from the State Aqueduct

Therefore, if there is a concern over the reliability of water supply to the TPP, it is under abnormal or worst-case conditions. The worst-case conditions that would compromise the reliability of water supply from the State Aqueduct are:

1. Severe drought in the SWP watershed
2. Flow curtailments or shutdowns in the Bay-Delta because of take concerns regarding endangered fish species
3. Banks PP shutdowns for planned maintenance
4. Unanticipated Banks PP shutdowns resulting from canal leak repairs along the State Aqueduct or other reasons

Based on the results of my engineering analysis, the condition that presents the worst-case scenario is number 4 - an unanticipated shutdown of the Banks PP. Therefore, this testimony will focus on this worst-case condition.

## **Water Supply Available to the TPP in cases of Unanticipated Outages of the BPP**

The SBA users depend on water supply from the Banks PP to fill Bethany Reservoir and the north reach of the State Aqueduct. In addition, the uppermost pool area of the Aqueduct serves as a reserve supply if pumping at Banks PP is stopped for any reason. Water stored in the Bethany Reservoir and Pool 2 of the State Aqueduct, the section between Check Stations 1 and 2, is available to the SBA users. In addition, SBA users have the Del Valle Reservoir available as a water supply that is fed by the South Bay Pumping Plant.

The most typical cause of an unanticipated shutdown of the Banks PP is a leak in the State Aqueduct that requires dewatering of the canal and, therefore, shutdown of Banks PP pumping. The Department of Water Resources (DWR) staff estimates that leaks occur in the State Aqueduct, which spans from the Clifton Court Forebay to southern California, approximately once every two to three years. The frequency of canal repairs is greatest in the southern portion of the State Aqueduct, especially the southeastern reach delivering water from the Tehachapi Mountains through Palmdale/Lancaster toward San Bernardino. Repairs in this southernmost portion of the Aqueduct would have no impact to Tesla. As shown in the "Engineering Report," in nearly all cases of leak repair, DWR is able to maintain water flow through the use of grouting techniques that enable the canal leak to be repaired while still allowing water to flow in the State Aqueduct.

The specific situation that would affect TPP water supply would be a canal failure that may occur upstream of State Aqueduct Check Station 2 (just downstream of the turnout location). According to DWR, there have been only 3 cases in the history of the SWP where a canal failure has occurred upstream of the proposed location of the TPP turnout. Two of these failures occurred over 15 years ago.

The third occurrence happened over a 20-day period from June 12 to July 1 of 2001 at mile post 4.25. This particular failure was unusually severe in that the leak occurred in a section of the canal which was constructed in a deep fill section. As a result, the repair required more elaborate construction efforts than normally required to repair a canal leak as well as complete dewatering of the canal upstream of the Bethany Reservoir. Nonetheless, DWR was able to plan and implement an emergency water supply solution by filling Bethany Reservoir and the upper pools and mobilizing temporary pumping equipment to convey water from the nearby Delta Mendota Canal (DMC) to the State Aqueduct and thereby supply sufficient water to meet the SBA and north-reach-user needs. Specifically, DWR was able to pump 114 cfs from the DMC to the State Aqueduct within 72 hours of initiating emergency response procedures. If the same situation occurred today, DWR estimates that they could mobilize similar or

greater capacity pumping equipment within 48 hours because the site work is now in place to facilitate quick mobilization of the temporary pumping equipment.

In addition to the pump-over capabilities from the DMC, DWR has the capability to pump water back up the State Aqueduct from the O'Neill Forebay to the Bethany Reservoir by mobilizing temporary pumps at the canal check stations to pump water in reverse over the check stations. They did so during the June 2001 canal outage. Therefore, DWR has the capability to supply water into the Bethany Reservoir and Pool 2 using two different methods: pump over from the DMC or pump back up the State Aqueduct from the O'Neill Forebay/San Lois Reservoir complex. DWR has stated in meetings with FPLE and local water agencies and in CEC workshops on the TPP (Attilio J. Zasso) a willingness to again engage in the DMC pump-over and O'Neill pump-back actions should emergency conditions dictate in the future.

### **Conclusion**

The findings of my engineering analysis on the water supply for the TPP show that the State Aqueduct system is a reliable source of water supply to the proposed TPP. Sufficient facilities and procedures are in place to make water available to the TPP in times of severe drought, curtailments in flow from the DWR's Banks Pumping Plant (BPP), and shutdowns of BPP due to planned or unanticipated events.

While the BPP has, and will continue to shutdown for a variety of reasons, the DWR has proven that it can anticipate and/or respond to outages to maintain sufficient flows to satisfy SBA and other upper reach users. This is true now and will be into the future even with projections of increased water demands from SWP customers and continued endangered fish species curtailments. Under the range of scenarios that I investigated, I have concluded that the TPP will not have to shutdown due to water supply reliability problems given the combination of:

- water supply contractual assurances for drought year supply,
- sufficient supply of minimum flows from the BPP year-round without adversely impacting other users,
- continued use of proven emergency response capabilities of DWR, and
- TPP on-site water storage for 1 to 2 days of water supply.

Therefore, the CEC staff is not justified in assuming any days of outage of the TPP based on water supply concerns in their economic analysis. The CEC staff's analysis fails to make the connection between the lost revenue for an estimated 2 days of potential California Aqueduct outages and the TPP's on-site water storage for up to 2 days supply. The result is an unsupported increase in the cost associated with Applicant's proposed water supply of \$21,244,279. This calculation error is substantial and should be corrected by CEC staff in order to provide a proper economic summary and although a side-by-side comparison of the costs for the Applicant's proposed supply and the Tracy supply alternative.

## Testimony of Duane McCloud - Project Engineer

This testimony is in regard to the water supply option evaluation presented by CEC Staff in the FSA Water Resources Appendix A. The specific focus of this discussion is with regards to Table 5 in this Appendix on page 4.13a-22. This testimony is being presented on behalf of FPL Energy for the Tesla Power Project (TPP).

In Table 5 an economic comparison of five different cooling options is presented with the Applicant's proposal identified as Alternative 4 and the Tracy Reclaim Water option being recommended by Staff in the FSA as Alternative 3. Other alternatives for reclaim water and dry cooling are also listed. This discussion focuses only on the economic differences between Alternatives 4 and 3 as the other alternatives were already identified in the FSA as economically disadvantaged to 4 and 3.

Table 5 is the result of an evolution of several data requests and Staff work that has been performed throughout the licensing process. Much of the information in Table 5 came from the Applicant. While the Applicant fundamentally agrees with most assumptions and costs delineated on this table, there are several that need clarification or adjustment for an accurate economic evaluation. The attached spreadsheet comparison focuses only on the Tracy reclaim and Applicant's water options. Where possible 2002 cost estimates were used to remain consistent with previously developed dollars. The following basic assumptions are used in the spreadsheet:

- Applicant concurs with Staff estimates for capital cost of water delivery systems and annual water delivery system O&M costs.
- In additional meetings with US Filter, who provided the preliminary design for the zero liquid discharge system, additional clarification was obtained beyond the level represented by Table 5. These include the need for additional structure and installation beyond the original \$14 million quote in the base case. As a result our all-inclusive estimate for the base case system is \$19,137,000. Accordingly the cost of the reclaim option system would increase as well. Since that time we have also determined that the reclaim option would provide reliably low suspended solids water, negating the need for inlet water filtration in the base ZLD design. Accordingly the inlet filtration was eliminated. This reduction approximately offsets the added structural/installation cost of the other added scope for the reclaim case. In summary the capital cost difference of \$5,500,000 expressed in Data Response 258 is being retained as an accurate estimate.
- Likewise additional discussions with US Filter also included a review of operation impacts of the additional equipment needed for reclaim water. Based on these discussions we now project that one additional staff person would be required for the larger system. Accordingly the total

loaded cost for a full time equivalent has been assessed against the Reclaim option.

- After additional review of the operational profile of the ZLD system, we also now understand that the system load electrical load demand would occur even with the plant not in service. As a result the \$32/MWh assumption in the original model, which was based on generation costs, has been increased to \$50 to reflect a blended rate of internal generation and purchase off of the PG&E system.
- While our estimate of total sludge production from ZLD operations has not changed, the price per ton for easily soluble non-hazardous waste has been changed from \$61 to \$50 based on recent CalEPA surveys.
- The cost of potable water to be hauled by truck to the site has been added to the reclaim option. This cost was based on Livermore 2002 published rates.
- As the Kern County supply cost structure has now been agreed to between the Applicant and water suppliers, the actual cost in 2002 dollars of \$360.50 per acre foot has been used.
- No allowance for lost generation has been included for either case, as it has been adequately demonstrated that the two options are essentially equivalent with regard to plant generation impact.
- An infrastructure fund payment to Zone 7 has been included in the Kern water source capital costs.
- It is assumed that the administrative costs associated with Zone 7 and the incremental treatment/administrative costs associated with Tracy Reclaim are approximately equivalent. Either are expected to be minor impacts.

Based on this update of the ongoing costs, the two options are approximately equivalent. The difference in 2002 dollars of \$29,500 per year amounts to a present value cost advantage of \$390,000. This amount is compared to a capital cost advantage of over \$21,000,000 enjoyed by the Applicant's original plan of utilizing the Kern originated supply.

## Testimony of Christopher B. Hansmeyer

Conditions of Certification Soil and Water: 11-15, as detailed in the FSA "Addendum Reclaimed Water Supply Pipeline", require the Applicant to use reclaimed water from the City of Tracy for its process and cooling water supply. The Applicant disagrees with Staff's determination that reclaimed water from the City of Tracy is "available" and/or "at a comparable cost." The Applicant's legal arguments in support of this position will be contained within the briefs. However, the following information was prepared in an effort to provide the Commissioners with complete background information on the Applicant's efforts to identify and secure a supply of water for the Tesla Power Project ("TPP").

The Applicant's efforts to identify a water supply began in September 2000. As detailed in AFC Section 5.4 and in the subsequent response to Data Request 186, the Applicant underwent a comprehensive effort to identify and secure a water supply. In particular, this effort began by contacting potential suppliers of reclaimed water, including, but not limited to, the Cities of Tracy and Livermore, and the communities of Discovery Bay and Mountainhouse.

Based upon several conversations, via telephone and in face-to-face meetings, each of these potential sources was determined to be inadequate for the reasons articulated in the Applicant's response to Date Request 186. As a result of being unable to identify a viable supply of reclaimed water, the Applicant turned its efforts to alternative sources. After several months of due diligence into the availability of alternative supplies, the Applicant selected its current preferred alternative, the BVWSD/RRB water-supply (the "District Supply").

The District Supply was selected due to several key considerations:

- Environmental review for the groundwater banking program, from which TPP would contract for a water supply had already been completed and certified in July, 2001. [Final Master Environmental Impact Report Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program ("MEIR") (SCH #2000101059)]. It should be noted that the groundwater banking program is an entirely separate project from the proposed TPP.
- Project specific environmental review for supplying the TPP with a water supply could build upon the foundation provided in the MEIR thereby allowing for comprehensive environmental review of any impacts within the expedited time-frame for the Tesla AFC process being conducted by staff. The project specific Final EIR entitled "Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program" was certified in September, 2002. (SCH #2002041044). Both the MEIR for the groundwater banking program, which included the capture of flood waters from the Kern River, and the project specific EIR complied with statutory public and agency

review and comment periods and it was determined that there were no unmitigated environmental impacts associated with the project. Since certification, there have been no legal challenges to the adequacy of the documents or the groundwater banking program.

- Because the source of the TPP water supply would be flood waters from the Kern River that had historically been lost to beneficial use and resulted in property damage along the Kern River channel, the District Supply presented a rare opportunity to draw from a supply of water that did not require a shift in use from other beneficial uses, such as agriculture. The District Supply represents a rare win-win for both the local farmers and the TPP. The funding provided through the payments to the Districts provides much needed revenue to more fully utilize the Districts' water rights through innovative groundwater banking and conservation programs while providing the TPP with a reliable supply of water without unmitigated environmental or agricultural impacts within the Districts.
- As a result of the Districts' entitlement to water from the State Water Project ("SWP"), through their membership in the Kern County Water Agency, an exchange of stored Kern River water for SWP water could be achieved. The proposed location of the TPP close to the SWP's California Aqueduct provides a highly reliable and cost effective means of transportation of the water supply to the site with minimal impacts to surrounding lands, and equally important, no new impacts to the California Delta.
- The Districts are willing to provide contractual guarantees in the areas of priority over other users within the District and continuity of delivery during periods of drought (to be achieved by creating a "start-up" account of 81,000 acre-feet which was determined to be sufficient to provide uninterrupted supply during any reoccurrence of the worst drought periods in California's recorded history).
- Through Applicant's due diligence, the District Supply was determined to be available, cost effective, reliable, free from unmitigated environmental impacts, and thus sufficient from a financing standpoint.

Based primarily upon these considerations, the District Supply was selected and the TPP moved forward with analyzing the environmental impacts and economic factors.

Using the selection criteria identified above, it is apparent that Staff's determination that a reclaimed water supply from the City of Tracy is available at a comparable cost is not supported by evidence in the record. Although Staff's efforts to identify and provide analysis of potential impacts associated with the Tracy supply should be commended, in order for a supply to be adequate from a

financing standpoint, each and every one of Staff's and the City of Tracy's assumptions would have to be realized, including, but not limited to, the timing and funding for the expansion of the Tracy wastewater treatment plant, required local and state approvals for the transfer of the interim groundwater and long-term supply of wastewater, and the City's willingness and ability to provide necessary contractual guarantees against reduction in deliveries as a result of drought conditions and/or third-party challenges. To date, the City of Tracy has not provided anything more than preliminary offers from City staff members whom do not have the legal authority to enter into contracts on behalf of the City nor have they provided the necessary supporting documentation that would allow the Applicant to accurately determine the associated risks. The following table chronicles the history of communication between the Applicant and the City of Tracy with regards to the Applicant's efforts to appropriately determine the viability of the proposal.

**Table WT 1                      Communication between Applicant and the City of Tracy.**

<b>Date</b>	<b>Form</b>	<b>Summary</b>	<b>Status</b>
11/22/2001	Telephone Call	From Christopher B. Hansmeyer to Erich Delmas and Bob Sagaser (Environmental Control Officer).  Obtained general information regarding the City's discharge of secondary treated wastewater into the Old River and table of TDS levels of said discharge. It was determined that the TDS and quantity of the discharge rendered the supply unviable for use at the TPP. At that time, the City did not have adequate information regarding the expansion of or water availability from the wastewater treatment plant.	n/a
3/27/2002	Meeting	Duane McCloud and Dave Jones met with Erich Delmas and Steve Bayley to discuss the availability of reclaimed water for use at the TPP. The City indicated that they were uncertain in predicting the amount of additional wastewater that would be available due to growth and that they were uncertain on the timing of availability of water that would meet the criteria set forth in Title 22 of the CCR. The City estimated that Title 22 water may be available sometime between 2008 and 2012.	n/a
11/16/2002	Meeting	Scott Busa, Duane McCloud, Dave Jones, and Christopher Hansmeyer, met with Nick Pinhey and Steve	n/a

		Bayley. Steve Bayley detailed the progress on the expansion of the wastewater treatment plant and the City's efforts to identify and secure new sources of water supply for the City. Issues regarding the City's willingness and ability to contract with the TPP for a treated wastewater supply were discussed.	
1/3/2003	Email	From Duane McCloud to Steve Bayley. Email contains a reference to Applicant's willingness to pursue a reclaimed water supply from the City provided certain due diligence could be conducted regarding supply availability, cost, and reliability.	n/a
1/7/2003	Meeting	Scott Busa, Duane McCloud, Scott Galati, Christopher Hansmeyer, and Dave Jones met with Fred Diaz, Nick Pinhey, Steve Bayley, and Debra Corbett. Discussion included contractual issues, Applicant's request for due diligence materials on the proposed treated and interim supply, as well as a request for the legal opinion of City legal counsel regarding the transferability of the proposed supplies.	Applicant has not received the requested information.
1/28/2003	Letter	From Fred Diaz, City of Tracy to Scott Busa, FPL outlining preliminary terms of providing reclaimed water for the Tesla Power Project.	
2/6/2003	Letter	From Christopher Hansmeyer to Fred Diaz. Letter requests that the City provide the due diligence materials requested at the 1/7/2003 meeting necessary to consider City's preliminary terms identified in 1/28/2003 letter..	Applicant has not received the requested information.
3/26/2003	Letter	From Christopher Hansmeyer to Fred Diaz. Letter requests that the City provide the due diligence materials requested at the 1/7/2003 meeting and in the 2/6/03 letter. This letter contained the proposed FPL contractual terms for further discussion toward contract.	Applicant has not received the requested information.
4/22/2003	Email	From Christopher Hansmeyer to Martha Lennihan and Debra Corbett providing a copy of the Tesla FSA.	n/a
5/13/2003	Meeting	Scott Busa, Scott Galati, David Osias met with Steve Bayley, Martha Lennihan, and Debra Corbett. Discussed issues regarding contract terms, interim and treated supply	Applicant has not received the requested information.

		reliability, transferability, and costs. Request made by Applicant for documents in support of City's proposal.	
5/21/2003	Letter	From David Osias to Martha Lennihan, Debra Corbett, and Steve Bayley. Identifies critical action items and outstanding document requests, including, but not limited to, legal opinion regarding environmental impacts associated with the City's proposal, interim groundwater supply due diligence documents, City staff determination of costs associated with the proposal, identification of any additional backup supplies that may be necessary, asks for approval of 35-year term of contract and provide City provisions re: force majeure, indemnity, and reliability assurances.	Applicant has received one document entitled "Mitigated Negative Declaration – Groundwater Management Policy. All other requests have gone unanswered including any indication that the City is willing to grant the assurances requested.

As a result of the City's inability to provide either the documentation and legal opinions necessary to provide the Applicant with enough information to adequately assess the risks associated with the City's proposal or provide real evidence of the City's willingness to provide contractual guarantees against the increased risk resulting from the Applicant's lack of access to such documentation, Applicant continues to have strong concerns regarding its ability to finance, construct, and operate the TPP in reliance upon the City's proposal and staff analysis.

### Testimony of David L. Osias

Many business and municipal projects require water in order to be viable. In order to identify potential sources of water, whether the intended water use is industrial, real-estate development or agricultural, the availability, reliability, quality, and economic attributes of the intended water supply must be analyzed to properly evaluate whether the supply is adequate to support the proposed use. Financing (whether in the form of debt or equity) for projects that require water is generally not available without the project proponent providing an analysis of these water supply attributes, often backed up by independent consultants' reports and opinions of counsel so that the financing risk can be properly evaluated. The higher the risk, the more costly the financing; although with respect to water-supply risk for projects where water is a critical component, uncertainty about availability, reliability, quality or cost attributes more often results in the loss of financing rather than just more expensive financing.

A comparison of the BVWSD/RRB water-supply with the City of Tracy water-supply evidences a substantially higher degree of uncertainty and risk for the City of Tracy supply which, in my opinion, would probably preclude or make prohibitively expensive any financing at this time. Substantial uncertainty exists regarding the date of availability of City of Tracy water and the cost of the water.

The date of availability of water from the City of Tracy is unknown. No definitive date for the availability of a sufficient supply of tertiary-treated water exists, and no commitment to provide a sufficient volume of tertiary-treated water by a definitive date has been proposed by the City of Tracy. Similarly, no definitive date for the availability of non-reclaimed, other sources of City of Tracy water is known, and no commitment to provide non-reclaimed water by a definite date has been offered. The City of Tracy has advised that the nature, extent and schedule for environmental review for transferring groundwater or other potable supplies for use outside the City of Tracy by the power plant is unknown at this time, as is the extent and cost of any environmental mitigation that might be necessary. Furthermore, the charges that the City of Tracy will demand for pumping, piping and other costs for either the reclaimed or the non-reclaimed water has been determined or disclosed by the City of Tracy. Therefore, and perhaps consequently, no price for the City of Tracy water supply has ever been provided to date. Thus, at this date it is impossible to definitely identify for a financier when and at what price City of Tracy water is available. This uncertainty will negatively impact the availability and cost of necessary power plant financing.

Update and Simplification of  
CEC FSA Appendix Table 5, from page 4.13a-22

Updated Costs and Assumptions - 2002 dollars

	"Alt 4" Kern/Zone 7 Supply	"Alt 3" Tracy Reclaim Water	Comments/Basis
<b>Capital Costs</b>			
Pipeline			
20" diameter, 1.7 miles	\$ 4,915,000	\$ -	Staff Estimate
30" diameter, 11 miles	\$ -	\$ 23,064,000	Staff Estimate
ZLD System, TIC w/ inlet filtration, sidestream softening, RO and evap/cryst	\$ 19,137,000	\$ -	US Filter Package plus installation costs
ZLD System, TIC w/o filtration, larger softener, RO, and double evap/cryst	\$ -	\$ 24,637,000	US Filter Package plus installation costs
Zone 7 Infrastructure Fund	\$ 2,500,000	\$ -	
<b>Total Capital Cost</b>	<b>\$ 26,552,000</b>	<b>\$ 47,701,000</b>	
<b>Annual Costs</b>			
Annual Pumping System Costs	\$ 223,000	\$ 491,000	Staff Estimate
Annual ZLD System Operating Costs			
			USF MW estimate @ \$50/MWh; previous estimate of \$32/MWh covered only generation costs and no allowance for buying off grid.
Energy	\$ 243,750	\$ 442,188	
Chemicals	\$ 581,000	\$ 1,232,000	USF estimate
Parts and Maintenance	\$ 140,000	\$ 180,000	Based on 1% of capital equipment costs
Sludge Disposal	\$ 341,600	\$ 858,880	Based on \$61/ton all in costs
Incremental Manpower	\$ -	\$ 115,000	All in cost w/ OT for one additional operator
Total ZLD Costs	\$ 1,306,350	\$ 2,828,068	
Annual Water Costs @5100 AF/year	\$ 1,838,550	\$ -	Current contact rate is \$360.5 in 2002 dollars Assumes water for potable use (1.0 gpm) trucked to the site from Tracy. Used Livermore rates (\$3.65/100gal + \$11.35/mo) as reference
Potable Water hauled to site	\$ -	\$ 19,321	
<b>Total Annual Costs</b>	<b>\$ 3,367,900</b>	<b>\$ 3,338,388</b>	
<b>Present Value of Difference in Annual Costs</b>	<b>\$ 349,000</b>	<b>\$ -</b>	Before tax calc based on 9.2% interest rate
<b>Total Evaluated Cost, NPV</b>	<b>\$ 26,901,000</b>	<b>\$ 47,701,000</b>	

STATE OF CALIFORNIA  
Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

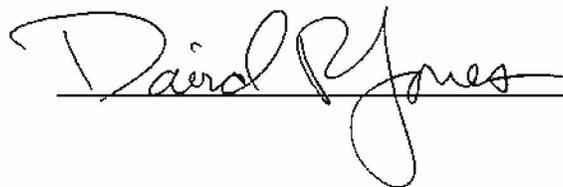
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DAVE JONES**

I, Dave Jones, declare as follows:

1. I am presently employed by CH2MHill, as a Vice President and Principal Engineer in the firm's Water Group.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Water Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on August 27, 2003.

  
\_\_\_\_\_

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

**DOCKET NO. 01-AFC-21**

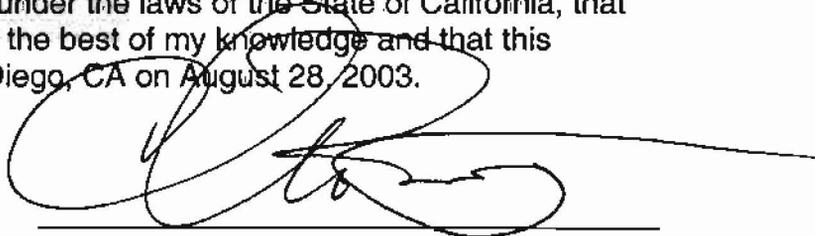
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
Christopher B. Hansmeyer-Soil and  
Water Resources**

I, Christopher B. Hansmeyer, declare as follows:

1. I am presently a practicing attorney in San Diego, California.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Water Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at San Diego, CA on August 28, 2003.



A handwritten signature in black ink, appearing to read 'C. Hansmeyer', is written over a horizontal line. The signature is stylized and cursive.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

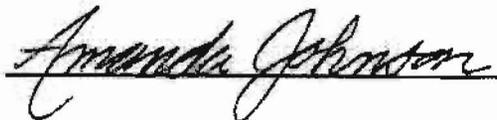
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
AMANDA JOHNSON-Soil and Water  
Resources**

I, Amanda Johnson, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Senior Environmental Technician.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Agriculture and Soils for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.



STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

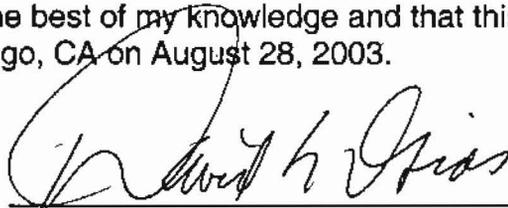
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
David Osias-Soil and Water  
Resources**

I, David Osias, declare as follows:

1. I am presently employed by Allen Matkins LLP, where I am a partner in the firm's office in San Diego, California.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Water Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at San Diego, CA on August 28, 2003.



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## Christopher B. Hansmeyer

680 West Beech Street, Suite Four, San Diego, California 92101 • (619) 865-8024 • chansmeyer@cox.net

### EDUCATION

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UNIVERSITY OF CALIFORNIA, BOALT HALL SCHOOL OF LAW, Berkeley, California J.D. May 1999

- Specialization in Environmental and Natural Resources Law
- Prosser Award for Environmental Litigation

HUMBOLDT STATE UNIVERSITY, Arcata, California B.S. May 1996

- Bachelor of Sciences in Natural Resources Planning and Interpretation
- *Summa Cum Laude* Graduate with Distinction in All Subjects, GPA 3.87
- Director, Student Legal Services Office

### LEGAL EXPERIENCE

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ALLEN MATKINS LLP, San Diego, California June 1998-Present  
Associate, Real Estate Department: Land Use, Environmental, and Natural Resources Practice Group

#### General Real Estate Practice

- Assisted clients with office, industrial and retail leasing and property acquisitions and dispositions
- Advised clients regarding compliance with private rights of access to privately owned shopping centers under the First Amendment, including preparation and defense of "time, place, and manner, regulations"

#### Land Use Practice

- Assisted clients in a broad range of land use matters, including processing government entitlements, zoning compliance, redevelopment issues, and administrative proceedings before local governing entities
- Advised clients regarding compliance with the California Environmental Quality Act ("CEQA") and the National Environmental Quality Act ("NEPA")

#### Natural Resources Practice

- Performed extensive legal analysis of surface appropriative and riparian rights, groundwater rights, Colorado River rights, entitlements under state and federal water contracts, reasonable use, waste and conservation, and the sale, lease and transfer of water and water rights
- Represented power-plant developers with water supply issues including water rights acquisitions and due diligence regarding water supply reliability; the use of reclaimed wastewater for cooling purposes; adequacy of environmental documentation under the California Energy Commission Licensing Process and CEQA
- Appeared on behalf of clients before local and state agencies, including the California Department of Water Resources, California State Water Resources Control Board, and the California Energy Commission
- Assisted developers regarding water supply and water acquisition matters throughout California including residential developments, golf courses, aquacultural operations, agricultural operations, and mixed-use commercial/industrial development
- Prepared legal memoranda and drafted argument sections of briefs filed in state and federal court
- Assisted clients regarding compliance with recently adopted state legislation including SB 221 and SB 610

SHUTE, MIHALY, & WEINBERGER, San Francisco, California January 1998-May 1998

#### Law Clerk, Land Use and Environment Group

- Performed extensive legal work on environmental and land use issues
- Prepared legal memoranda on potential arguments against development of sensitive ecological areas and nuisance actions

CALIFORNIA ATTORNEY GENERAL'S OFFICE, San Francisco, California June 1997-August 1997

#### Law Clerk, Natural Resources Division

- Performed extensive legal work on environmental law issues
- Prepared legal memoranda on issues relating to state agency actions

## PRE-LAW EXPERIENCE

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WHM INC., Moraga, California

June 1984-May 1989

Architectural/Engineering Draftsperson

January 1995-May 1996

- Design and drafting of electrical, mechanical, and structural control systems

HLA ARCHITECTS, Sacramento, California

January 1990-April 1991

CARDOZA, DILLALO, & HARRINGTON ARCHITECTS, Pleasanton, California

June 1988-December 1989

Landscape Architectural Draftsperson

- Design and drafting of structural, irrigation, and plant elements for residential, commercial, and mixed-use developments

## PUBLICATIONS

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- Co-authored "Legal Standards for Local Agency Review of Lot-line Adjustments: A Subdivider's Perspective" for the California Land Use Law & Policy Reporter (January 1999)

## **Appendix A**

### **Resume of Amanda Johnson**

Tetra Tech FW, Inc. - Senior Environmental Technician

#### **EXPERIENCE SUMMARY**

B.A. in Geography with two years experience collecting, mapping, and analyzing agriculture, soils, and biological data for proposed power plant, transmission line, and natural gas pipeline projects.

#### **EDUCATION**

B.A. (Bachelor of Arts), Geography, California State University Long Beach, Long Beach, CA

## **REPRESENTATIVE PROJECT EXPERIENCE**

### **Senior Environmental Technician, City of Santa Clara Pico Power Project**

Responsible for preparing the Agriculture and Soils Section of the AFC report, which informs the client of soil types and their descriptions, agricultural use and importance, and possible construction and operational impacts to the area where the power plant and its related facilities are proposed to be located.

### **Senior Environmental Technician, Russell City Energy Center, Hayward, California**

Responsibilities included generation of the Land Use and Agriculture & Soils sections for the supplement to the AFC.

### **Senior Environmental Technician, Inland Empire Energy Center, Riverside County, California**

Responsible for preparing the Agriculture and Soils Section of the AFC.

### **Senior Environmental Technician, Environmental Evaluation of Greenfield Sites, California**

Responsibilities included California Natural Diversity Database (CNDDDB) searches, land use and general information research for the Environmental Evaluation of Greenfield Sites in northern and central California.

### **Senior Environmental Technician, Rio Linda/Elverta Power Project, Sacramento County, California**

Responsibilities included California Natural Diversity Database (CNDDDB) searches, biological species research, conservation bank research, mapping, Data Adequacy for AFC, and generation of the Land Use and Agriculture & Soils sections for the supplement to the AFC.

### **Senior Environmental Technician, , Snow Valley Mountain Resort, Running Springs, California**

Responsibilities include California Natural Diversity Database (CNDDDB) searches, map generation, and assisting in writing the Environmental Assessment and preparing biological resource maps for this report in GIS (ArcView).

### **Senior Environmental Technician, North Baja Pipeline Project, Southern California**

Responsibilities include assisting in writing the post construction North Baja Pipeline (NBP) Final Biological Report and preparing biological resource maps for this report in GIS (ArcView). The NBP is a pipeline constructed for transport of natural gas in Arizona and California.

### **Senior Environmental Technician, Southern California Gas L1030 Pipeline Replacement, Desert Center, California**

Responsibilities include biological and water crossing surveying, assisting in the generation of the 1601 (Streambed Alteration Agreement) permit application, and generation of biological resource maps in GIS (ArcView).

**Allen Matkins Leck Gamble & Mallory LLP**

*attorneys at law*

501 West Broadway 9th Floor San Diego California 92101-3547

telephone. 619 233 1155 facsimile. 619 233 1158 www.allenmatkins.com



*David L. Osias*

David L. Osias is a partner in the firm's San Diego office. He received his Bachelor of Science degree in 1976 from the University of California, Davis where he graduated with honors and was elected to the Phi Kappa Phi National Honor Society. He obtained his Juris Doctorate degree in 1979 from Boalt Hall School of Law, University of California, Berkeley.

Mr. Osias has extensive experience with surface appropriative and riparian rights, groundwater rights, Colorado River rights, entitlements under state and federal water contracts, reasonable use, waste and conservation, and the sale, lease and transfer of water and water rights. He taught a water law course at the University of San Diego School of Law for four years. He provides specialized counsel in transactions, financings and litigation involving water resources.

Mr. Osias has represented power-plant developers with water supply issues including water rights and acquisition analyses for a solar power plant in the Mojave basin; water rights analysis and due diligence regarding a potential hydroelectric power plant acquisition in Northern California; water supply due diligence for reclaimed tertiary-treated water in the South San Francisco Bay area for two natural gas-fueled power plants; water supply due diligence and negotiations for two natural gas-fueled power plant sites in the Northern San Joaquin Valley; and a water rights analysis for a natural gas-fueled power plant adjacent to the Colorado River.

Mr. Osias has appeared on behalf of clients before state and federal courts and the California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB). Dealings with the DWR involved negotiations for State Water Project water transfers, investigations, negotiations concerning water transfers, and matters of water policy. Mr. Osias has participated in hearings before the SWRCB regarding waste and misuse of water and water rights, and has been involved in appropriative applications, permit proceedings, as well as petitions for the transfer of water. Mr. Osias has litigated water wheeling issues before the state trial and appellate courts.

Mr. Osias has also represented numerous developers regarding water supply and water acquisition matters throughout California including one

involving groundwater supply issues on the Nevada state line. He has conducted numerous water rights analyses for multiple golf course developers regarding riparian water rights. Mr. Osias represents an aquaculture operation in connection with groundwater rights and transfers in the Coachella Valley. He has also represented residential developers regarding water connection fees and water connection allocation programs. Recently, Mr. Osias has committed substantial time representing an irrigation district in negotiating and documenting an agreement for a 75-year, 300,000 acre-foot per year transfer, the largest long-term transfer of conserved water in this history of California. That representation also involves transportation wheeling disputes, negotiating and drafting a comprehensive settlement agreement with three other public water districts, the U.S. Department of the Interior and the California DWR and the SWRCB. He is also coordinating the environmental compliance team for the water transfer under NEPA, CEQA and the Endangered Species Act.

## Appendix A

### Resume of Duane McCloud FPL Energy – Project Manager

#### EXPERIENCE SUMMARY

Mr. McCloud has over 21 years of experience in all aspects of power generation. He has held positions of increasing responsibility in the areas of technical services, operations, project design, and project management of power generating facilities of a variety of technologies, including coal fired, gas fired, and geothermal. Mr. McCloud has been employed by FPL Energy for over five years in a variety of project management and engineering positions focused on operations support and corporate expansion. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Manager in the Construction and Engineering Division at FPL Energy, Mr. McCloud is responsible for piecing together the technical aspects of power generation development for projects throughout the US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy growth plans. His previous work, with CalEnergy and American Electric Power, has included engineering manager for new plant design, plant operations management, and project management for sites in California, throughout the United States, and in Asia. He has significant experience and background in the specific areas of water treatment and controls systems.

#### EDUCATION

B.S.Ch.E, Chemical Engineering, University of Akron, 1982.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Engineering/Management (1997 - Present)**

*Tesla Power Project* – Project Engineer providing technical support of the development logistics and site selection, and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 1120 MW power plant in east Alameda County.

*Rio Linda / Elverta Power Project* – Project Engineer for the technical support of the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

*Blythe Power Project* - Lead due diligence role and major contribution to the construction development for a 500 MW power plant near Blythe, CA. Has played an

integral role in coordination of Owner's home office support functions for this project in the construction phase.

***Project Development Technical Support*** – Lead project engineering role for support of over 7000 MW in project development throughout US, including site evaluation, contract development support, and umbilical development for projects in California, Arizona, Nevada, Colorado, New York, and North Carolina,

***Mergers and Acquisition Due Diligence*** – Technical leader for asset definition and evaluation for projects located throughout the United States, including opportunities in coal, oil, gas, geothermal, and hydroelectric technologies. Evaluations of over 10,000 MW in generation have included operating projects, projects under construction, and projects previously developed by others.

**Kiewit/CalEnergy/Magma Power - Project Management; Plant Engineer/ Plant Management (1990 – 1997)**

***CalEnergy, Ben Holt Company (now Kiewit-Bibb California) – Engineering Project Manager*** – Administrative, technical, and project lead for all engineering and design efforts for the Patuha geothermal project in Java, Indonesia as part of a Joint Venture partnership for a programmatic development.

***CalEnergy, Ben Holt Company – Assistant Project Manager*** – Technical project lead for all engineering and design efforts for the Dieng Unit 1 geothermal project in Java, Indonesia.

***Magma Power Company – Assistant Plant Manager Vulcan/Hoch*** – Plant management, including operations administration, maintenance coordination, cost control, and project direction for two geothermal power facilities near Calipatria, California.

***Magma Power Company – Plant Engineer*** – Lead technical role, including equipment performance evaluation, control systems improvements, and maintenance planning for the Hoch geothermal power facility near Calipatria, California.

**American Electric Power Service Corporation - Project Engineer (1982 - 1990)**

***Project Engineer, Zimmer Conversion*** – System responsibility for all water treatment, cooling, and laboratory systems for the conversion of a 98% complete nuclear facility to a 1300 MW coal-fired supercritical power plant in southwest Ohio.

***Project Engineer, Operating Plant Support*** – Corporate level oversight and responsibility for compliance, audits, capital improvements, and operations guidelines for all chemical systems, including makeup water treatment, ultrapure water treatment, wastewater treatment, coal sampling, laboratory systems, chemical feed and storage systems, chemical cleaning systems, and cooling water systems for a total of nine power facilities located in Ohio, Indiana, West Virginia, and Virginia.

**TOPIC: BIOLOGICAL RESOURCES**

**WITNESSES: DWIGHT MUDRY**

## BIOLOGICAL RESOURCES

I. Name: Dwight R. Mudry, Ph.D.

II. Purpose:

My testimony addresses the Biological Resources issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Biological Resources section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Biological Resources. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC, Section 5.3, Table 6.1-1, Section 6.5.3 and Appendix J
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. BIOL-1 through BIOL-9
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 23 through 45
- Exhibit 4, Responses to Second Set of CEC Data Requests, Response Numbers 211 through 225.
- Exhibit 14, Draft Biological Mitigation Proposal, January 30, 2003

- Exhibit 15, Final EIR Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program, September 2002

To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this

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

V. Opinion and Conclusions

I have reviewed the Final Staff Assessment and I agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant biological resources impacts and will comply with all applicable laws, ordinances, regulations and standards.

I have also reviewed the FSA Addendum submitted by CEC Staff covering their proposed reclamation water supply line. I concur with their general conclusion that the reclaimed water pipeline will not cause a significant impact to biological resources along the pipeline route. However, I do not believe the additional Staff proposed Conditions of Certification contained in the Addendum to the Staff Assessment are necessary for the reasons detailed in Midway Power, LLC's testimony for the topic area of Soil and Water Resources.

With respect to the Staff's discussion of the potential impacts to the BV lake Shrew (page 2.2-23), it is my opinion that the potential impacts have been evaluated in the EIR covering the Buena Vista/Rosedale-Rio Bravo Water Banking and Recovery Program (B&R Program) and were not found to be significant. In any case, the B&R Program will proceed with or without the Tesla Project and potential impacts to the BV Lake Shrew are not related to the Tesla Project.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

DECLARATION OF  
DWIGHT R. MUDRY

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Biological Resources for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.

  
\_\_\_\_\_

## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities: cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

**Modesto Irrigation District, Power Plant EIR** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

**Northern California Power Agency, Environmental Assessments for Five Power Plants** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

**Corn Products Corporation, Coal Fired Cogeneration Project EIR** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

**Los Angeles Harbor Department, Environmental Impact Report** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

**Rio Linda Water District, Initial Study and Negative Declaration** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

**Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

**Government of Nepal, Hydroelectric Project Environmental Assessment** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

#### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

**TOPIC: AIR QUALITY**

**WITNESSES: DAVID STEIN**

## Testimony – Air Quality

- I. Name: David Stein
- II. Purpose: My testimony addresses the air quality impacts from the construction and operation of the Tesla Power Project
- III. Qualifications: I am a Vice President with URS Corporation. I work in URS' Oakland office located at 500 12<sup>th</sup> Street, Suite 200, Oakland, CA 94607. My responsibilities include management of the air quality and public health risk assessment practices in Northern California. I hold a B.S. degree in Biological Sciences, a B.S. degree in Environmental Engineering and a M.S. in Environmental Health Engineering. I am also a registered chemical engineer in California. I have approximately 26 years of experience managing, staffing, coordinating, and conducting multidisciplinary environmental assessments for a wide range of major development projects, including extensive work in permitting, licensing and review of power projects. During the course of my professional career I have worked as an air quality regulator (both Kern County Air Pollution Control District, a predecessor to the San Joaquin Valley Air District, and the South Coast Air Quality Management District). I have also served as a consultant to industry and government on air quality and public health matters. I have previously testified at the California Energy Commission on air quality matters, having had involvement as a technical expert in air quality and public health in over a dozen siting cases before the CEC. My technical experience includes toxic and criteria pollutant emission quantification (both stationary and mobile sources), air pollution control technology evaluations, fugitive emissions studies, health risk assessments, air quality dispersion modeling, visibility impact modeling, emissions measurement and continuous emissions monitoring.
- IV. In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):
  - Exhibit 1, AFC, Section 5.2, and Appendix K-1 through K-11
  - Exhibit 2, Responses to CEC Data Adequacy Request Nos. AQ-1 through AQ-15
  - Exhibit 3, Responses to First Set of CEC Staff Data Requests, Response Numbers 1 through 13, 131 and 137
  - Exhibit 4, Responses to Second Set of CEC Staff Data Requests, Response Numbers 206 through 210
  - Exhibit 22, Air Quality Mitigation Agreement between the San Joaquin Valley Air Pollution Control District and Midway Power, LLC. Approved by Governing Board, May 16, 2002;
  - Exhibit 23, Final Determination of Compliance (FDOC) February 27, 2003, Tesla Power Project to BAAQMD, Application 3506;
  - Exhibit, 24, FDOC Errata submitted by BAAQMD, May 2, 2003.
  - Exhibit 25, BAAQMD Permit Evaluation and Emission Calculations for Altamont Landfill ERC, February 10, 2003

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

VI. Summary:

The Tesla Power Project will be a natural gas-fired combined cycle power plant and associated linear facilities. The project will have a nominal electrical output of 1,120 MW. The project will include four General Electric Frame 7FA combustion turbines and four duct-fired heat recovery steam generators that will be fueled with natural gas. The project will also include a wet cooling tower and an intermittently operated emergency diesel generator that will be emissions sources. Natural gas will be delivered to the power plant site via a new 24-inch diameter, 2.8-mile pipeline. The plant switchyard will be connected to the Pacific Gas and Electric Company (PG&E) Tesla Substation with a new 0.8 mile long transmission line.

The site includes a power generation facility, a switchyard, and a storm water sedimentation/detention pond, and will be located on a 60 acre parcel. The project site is presently undeveloped agricultural land used for grazing cattle.

Construction Impacts

- Construction Emissions

The Tesla Power Project will be constructed over an approximate 23-month period. Construction emissions are of temporary nature and will not coincide with emissions from plant operations. The primary emission sources during construction will be heavy equipment and fugitive dust from disturbed areas resulting from site construction, gas line construction, water line construction, and transmission line construction.

- Construction Impacts Analysis

The maximum air quality impacts from construction activities were predicted to occur along the northern and southern boundaries of the facility. No exceedance of any Ambient Air Quality Standards (AAQS) are predicted for NO<sub>x</sub>, CO or SO<sub>2</sub>. Daily and annual PM<sub>10</sub> background levels already exceed the applicable AAQS. Predicted impacts during construction activities, although only temporary, would add to existing background levels, and would be considered potentially significant without mitigation.

- Mitigation

Best achievable control measures (BACM) will be implemented during construction. Fugitive dust control measures include the use of water or chemicals for control of dust construction operations, and application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces that can give rise to airborne dusts.

Tesla Power Project will use a fugitive dust suppression program to reduce construction-related emissions. Fugitive dust emissions are expected to be reduced by more than ninety percent. I concur with the staff conclusion that the vigilant fugitive dust program and the provision of PM10 offsets prior to the commencement of construction, there will be no significant impacts from PM10 emissions during construction.

I recommend minor changes to proposed conditions of approval AQ-SC1 through AQ-SC3 to reflect consistency with the most recent CEC Staff versions of the corresponding conditions AQ-SC1 through AQ-SC3 in the Pico Project case and to provide administrative flexibility. In addition, with the modifications to AC-SC3 there is no need to retain AQ-SC4. These recommended conditions are provided at the end of this testimony.

#### Operation Impacts

- Project Emissions

Operational emissions for NO<sub>x</sub>, SO<sub>2</sub>, and CO from the four turbines were estimated using base emission rates and startup/shutdown emissions provided by the equipment manufacturer. PM10 emission rate limits for the project were based on expected performance based on other operating units. Cooling tower emissions were based on high efficiency drift elimination and maintenance of total dissolved solids in the circulating water. The expected project emission rates are summarized in the Bay Area Air Quality Management District (BAAQMD) Determination of Compliance (DOC), the CEC Staff Analysis and the corresponding CEC proposed conditions of approval.

- Best Available Control Technology

The project will comply with applicable Best Available Control Technology requirements. The project will use dry low-NO<sub>x</sub> (DLN) combustors and selective catalytic reduction (SCR0 with ammonia injection to achieve a NO<sub>x</sub> emission limit of 2.0 ppmvd (at 15 percent O<sub>2</sub>) for a 3-hour average. The project proposes a CO emission limit of 4.0 ppmvd (at 15 percent O<sub>2</sub>) for a 3-hour average with an oxidation catalyst as a post-combustion control technology. I note what appears to be a typographical error at the end of the 1<sup>st</sup> paragraph of the "Emission Controls" section on p. 4.1-24 of the CEC Final Staff Assessment, which

incorrectly indicates a CO level of 6.0 ppmvd (at 15 percent O<sub>2</sub>). The applicable condition of certification (AQ-24 (d)) does indicate the correct value of 4.0 ppmvd.

The BACT assessment conducted for the proposed combustion turbines considered all applicable control technologies currently proposed or in use on large natural gas-fired combustion turbines (>50 MMBtu/hr heat input). In particular, a NO<sub>x</sub> concentration of 2.0 ppmvd represents the lowest permitted level to date that has been achieved in practice for large frame-type combustion turbines. The other emission limits either match or better the levels specified as BACT by the California Air Resources Board (CARB) in their guidance to air districts. There is complete agreement among the CEC Staff, BAAQMD, and San Joaquin Valley Air Pollution Control District, that the project will comply with BACT requirements.

I would also like to note that the Tesla project has accepted an ammonia (NH<sub>3</sub>) limit of 5 ppm. While this level of ammonia slip is consistent with CARB guidelines, there are many power plant projects being licensed by the CEC at higher ammonia slip levels. For example, the East Altamont Energy Center (EAEC), has been recently licensed with an ammonia slip level of 10 ppm. There will be an unquantifiable air quality benefit associated with Tesla's voluntary acceptance of a lower ammonia slip level at ½ of the level that is routinely required. This air quality benefit is most likely to be realized with less secondary PM<sub>10</sub> creation.

- Air Quality Impacts Analysis

Maximum modeled impacts due to plant operation emissions would not cause a violation of any federal or state AAQS and would not significantly contribute to the existing violations of the PM<sub>10</sub> standards. In addition, the project impacts are below significance levels established under PSD regulations. Therefore, no PSD increment consumption analysis is required.

I am in general agreement with the CEC Staff analysis of the modeled impact levels from the project during operation as presented in Air Quality Table 15 of the Staff Analysis with the exception of the 24-hour PM<sub>10</sub> impacts. Air quality modeling that was performed under my direction (and reviewed and approved by the BAAQMD) demonstrates that the maximum 24-hour average PM<sub>10</sub> impact will be 4.97 ug/m<sup>3</sup>, below the EPA-established significance threshold of 5 ug/m<sup>3</sup>. It is also important to note that the Tesla project PM<sub>10</sub> impacts were projected to be less than 5 ug/m<sup>3</sup> for the single worst-case 24-hr period in a full three year data set. For every other 24-hour period, predicted impacts are even lower.

The CEC Staff have predicted a maximum PM<sub>10</sub> impact of 5.1 ug/m<sup>3</sup> with a notation that it reflects a 24-hour continuous wintertime operation of the power plant at 50% load. Since the power plant consists of four combustion turbines in a

4 by 2 configuration (ie. two steam turbines), it is very unlikely that the plant would operate all four units at 50% load, when two units could operate more efficiently and cost-effectively at 100% load to generate the same output level.)

In addition to the maximum PM10 impact level of 4.97 ug/m<sup>3</sup> being considered insignificant by BAAQMD and EPA, it is relevant to note that the acceptable precision level for PM10 ambient air quality monitors under the Federal reference method is 5 ug/m<sup>3</sup>. That is, an acceptable variation in the measured PM10 level of two monitors operated at the same location is 5 ug/m<sup>3</sup>. Worst-case PM10 impacts from the project will therefore be less than the accepted precision band of PM10 ambient monitoring equipment. For these reasons, I disagree with CEC staff both on the magnitude of the PM10 impact and on their characterization of the impact being considered significant. The project will not cause significant localized PM10 air quality impacts.

With respect to PM2.5 levels, I note that the California recently adopted annual PM2.5 standard of 12 ug/m<sup>3</sup>. This State standard is supplemented by Federal 24-hr average and annual PM2.5 standards of 65 ug/m<sup>3</sup> and 15 ug/m<sup>3</sup>. The implementation of these standards are in their infancy. Available air quality data for the northern San Joaquin Valley indicate that the area could ultimately be designated nonattainment. However, the rigorous process of evaluating PM2.5 air quality trends is not complete and no formal regulatory designations of attainment status have occurred. I also note that EPA has issued an Interim Policy on the Implementation of New Source Review Standards for PM2.5 (October 21, 1997). The policy indicates that "In view of the significant technical difficulties that now exist with respect to PM2.5 monitoring, emission estimation, and modeling, EPA believes that PM10 may be properly used as a surrogate for PM2.5 in meeting NSR requirements until these difficulties are resolved." Based on the above, I believe that it is premature for CEC Staff to designate the SJVAPCD as nonattainment for PM2.5 and to attempt to design a mitigation program around the preservation of ambient PM2.5 levels when the regulatory program for PM2.5 is still incomplete. I believe, as indicated by EPA, that PM10 should continue to be used a surrogate for PM2.5 until further regulatory direction is provided. As identified by Staff in its analysis, it has determined that for an impact to be significant under CEQA it must cause or contribute to violation of an air quality standard. For the reasons discussed above, this standard should be PM10 and not PM2.5.

The project impacts for the nonattainment pollutants (PM<sub>10</sub> and ozone) and their precursors (NO<sub>x</sub>, VOC, and SO<sub>2</sub>) will be mitigated by emission offsets. The offsets have not been accounted for in the modeled impacts noted above. These offsets comply with applicable BAAQMD regulations.

The project is not subject to PSD requirements for AQRVs because the nearest Class I area (Point Reyes National Seashore) is more than 100 kilometers from

the site. Air quality modeling demonstrates that the project will not cause significant visibility impairment in the nearest Class I area.

- Cumulative Air Quality Impacts

For the cumulative impacts analysis, projects within a 6-mile radius that have received construction permits but are not yet operational or that are in the permitting process at the time of filing have been considered (Tracy Peaker and East Altamont). In addition, the analysis included emissions from three major land developments proposed in the general area (Tracy Hills, South Schulte and Mountain House). In addition, the analysis conservatively assumed concurrent operation of the Tracy Biomass plant and the Owens Brockway glass plant. Results indicate that the Tesla Power Project, when combined with surrounding future projects, will not cause an exceedence of the AAQS for NO<sub>x</sub>, CO or SO<sub>2</sub>. In addition, project impacts would not significantly contribute to existing exceedences of the ambient PM<sub>10</sub> standards.

In addition to the above analysis, a cumulative impact analyses was performed by CEC Staff for the Tracy Peaker Project (01-AFC-16) that included the Tesla Power Project, East Altamont Energy Center (EAEC), and the Odessa Auto and an analysis by GWF Energy, LLC that included the Tracy Peaker Project, the East Altamont Energy Center, the Tesla Project, the Mountain House Community, the Tracy Hills Development, the Tracy Biomass Plant and the Owens-Brockway Glass Plant. That analysis found that cumulative impacts on NO<sub>2</sub>, SO<sub>2</sub> and CO levels would be insignificant. While the analyses conclude that there are no significant localized impacts, existing air quality violates both PM<sub>10</sub> and ambient ozone standards. Accordingly, offsets for PM<sub>10</sub> and ozone precursor emissions are needed to mitigate potentially significant regional impacts.

- Mitigation

The emission reduction credit (ERC) package that has been approved by the BAAQMD for the Tesla Power Project includes a combination of emission reductions from the BAAQMD ERC bank, and real-time PM<sub>10</sub> reductions from a road paving program at the Altamont Landfill near the project site. The ERC package is summarized below:

Table: ERCs Controlled by Midway Power, LLC as of January 10, 2003 (ton/yr)

Valid Emission Reduction Credits	POC	NO <sub>x</sub>	PM <sub>10</sub>
Banking Certificate #, Owner, Reduction Location			
710, Midway Power, Santa Clara <sup>a</sup>	5.140	0	0
718, Midway Power, Santa Clara <sup>b</sup>	44.995	0	0
719, Midway Power, Palo Alto <sup>c</sup>	4.990	0	0
720, Midway Power, Crockett <sup>d</sup>	0	48.962	0
721, C & H Sugar, Crockett <sup>d</sup>	2.353	0	0.094
778, Midway Power, Union City <sup>e</sup>	0.086	1.564	0.119
798, Midway Power, Fremont <sup>f</sup>	0.148	2.691	0
767, Midway Power, San Francisco <sup>g</sup>	5.862	1.300	0
762, Midway Power, San Leandro <sup>h</sup>	38.993	0	0
773, Midway Power, Hayward <sup>i</sup>	0	21.000	0
780, Midway Power, Los Gatos <sup>j</sup>	2.880	4.960	0.390
S00, Midway Power, Oakland <sup>k</sup>	0	0	1.197
S30, Midway Power, Antioch <sup>l</sup>	0	171.000	0
S31, Mirant, Antioch <sup>m</sup>	0	0	91.000
Proposed Road Paving at Altamont Landfill (App. 3421)	0	0	98.011
<b>Total ERC's Identified</b>	<b>105.447</b>	<b>251.477</b>	<b>190.811</b>
<b>Permitted Source Emission Limits</b>	<b>60.435</b>	<b>249.850</b>	<b>189.950</b>
<b>Offsets Required per BAAQMD Regulations</b>	<b>69.500</b>	<b>287.328</b>	<b>189.950</b>
<b>Outstanding Offset Balance</b>	<b>+35.947</b>	<b>-35.932</b>	<b>+0.861</b>

<sup>a</sup>original certificate #1520, application 7082, Western Spray Painting, issued 4/29/93

<sup>b</sup>original certificate #137, application 6249, National Semiconductor Corporation, issued 4/21/93

<sup>c</sup>original certificate #197, application 8342, Fairchild Advanced R&D Lab, issued 7/10/92

<sup>d</sup>original certificate #509, application 16446, C&H Sugar, issued 2/4/97; certificate 721 under option contract

<sup>e</sup>original certificate #633, application 332, Crown, Cork, & Seal Company, issued 5/16/00

<sup>f</sup>original certificates #771, 775, applications 2300, 2344, Crown, Cork, & Seal Company, issued 10/30/01

<sup>g</sup>original certificate #341, application 12726, Pacific Lithograph Company, issued 7/19/94

<sup>h</sup>original certificate #332, application 12247, Rexam Beverage Can Company, issued 8/17/94

<sup>i</sup>original certificate #16, application 30048, Hunt-Wessson Foods, Inc., issued 8/27/81

<sup>j</sup>original certificate #738, application 1728, Maxxim Medical, Inc., issued 6/6/01

<sup>k</sup>original certificate #419, application 14394, Phoenix Iron Works, issued 7/6/95

<sup>l</sup>original certificate #240, application 9651, Gaylord Container Corporation, issued 7/15/93

<sup>m</sup>original certificate #35, application 30079, Crown Zellerbach Corporation, issued 6/8/84; certificate 831 under option contract

The BAAQMD has concluded that the proposed offset package complies with all applicable laws, ordinances, regulations and standards, including its New Source Review rule. No unresolved comments on the final offset package or the project in general were received by either CARB, EPA or SJVAPCD. On this basis, the BAAQMD issued its Final Determination of Compliance for the project. These offsets fully mitigate impacts in the BAAQMD to insignificant levels.

Even though the project is located within the BAAQMD, it will be positioned near the border of the Northern Region of the San Joaquin Valley Air Basin.

Since the geophysical boundary of the airshed includes the Tesla Project, it is likely that a portion of the project's emissions will impact the San Joaquin Valley. Recognizing this issue, the applicant proactively initiated discussions with the SJVAPCD in advance of filing the AFC and was the first project proponent to enter in an agreement to address SJVAPCD concerns. SJVAPCD was provided with copies of the air quality modeling protocol and the AFC for their review and comment. SJVAPCD staff articulated their concern about the general migration of air pollutants from the BAAQMD region, about the development of two large power plants (EAEC and Tesla) just outside their border, the potential migration of emissions from the projects and the affect of general transport, on their ability to meet air quality attainment goals. The Tesla Power Project, while under no regulatory obligation to do so, continued to cooperate with the SJVAPCD to address its air quality concerns and to develop a framework for providing additional air quality benefits outside of those required under the BAAQMD jurisdiction.

In order to ensure that potential regional impacts to the San Joaquin Valley are mitigated to insignificant levels as determined by the SJVAPCD the local air quality expert, the Tesla Power Project reached an agreement with the SJVAPCD (the Air Quality Mitigation Agreement (AQMA)), which was approved by the Governing Board on May 16, 2002. The agreement determined that the Tesla Project will pay an air quality mitigation fee of \$957,751 to be used for air quality benefit programs within the San Joaquin Valley, and particularly in the Northern Region within or near the City of Tracy.

Under the terms of the Tesla AQMA, SJVAPCD would have discretion to direct the mitigation fee for purposes of generating real-time air quality benefits. This discretion is necessary in order to ensure that the SJVAPCD is able to rely on its expertise to fund cost-effective reduction projects that will maximize the air quality benefits from the program. However, the AQMA does specifically require the SJVAPCD to include one or more the following types of emission reduction programs: Bus retrofitting and/or replacement; lawnmower replacement; and replacement or retrofitting of internal combustion engines. The AQMA requires SJVAPCD to apply the funds to generate real-time air quality improvements, with a preference for projects in or near the City of Tracy, San Joaquin County and the Northern Zone of the SJVAPCD to the greatest extent possible.

The mitigation fee was calculated by assigning a monetary value of \$15,000/ton emitted, after determining a net mitigation balance. The balance was calculated by estimating the project's emissions migration into the San Joaquin Valley during non-attainment periods, and then subtracting a calculated BAAQMD ERC benefit to the San Joaquin Valley. The fee calculation methodology was developed under the direction of, and approved by, the SJVAPCD.

SJVAPCD has primary jurisdiction and expertise pertaining to the SJV airshed and the agency responsible for implementing clean air programs in the region.

Because SJVAPCD has the most significant experience in implementing emission reduction programs to achieve air quality goals, it is my opinion that the SJVAPCD analysis of mitigation requirements should be given primary consideration as the basis for determining mitigation requirements. I agree with the SJVAPCD conclusion that implementation of the AQMA, in conjunction with offset provided to the BAAQMD, will mitigate all project impacts to insignificant levels.

The following tables show the methodology that was followed to calculate the mitigation fee under the AQMA:

**Table 1 - Tesla Emissions Impact In SJV**

Pollutant	Project		% of time wind blows into San Joaquin Valley		Emissions into San Joaquin Valley During Non-Attainment Quarters, tpy	
	Emissions (tpy)		Q1/Q4	Apr/Nov	Q1/Q4	Apr/Nov
NOx	249.85			77.5%		129.01
VOC	60.44			77.5%		31.21
PM10	196.05		66.2%		64.89	

NOx and VOC emissions were calculated for the Ozone non-attainment period, from April through November (8 months).

PM10 emissions calculated for the first and fourth quarters, non-attainment period for PM10 (6 months).

To estimate emissions into the SJV, the wind vector fraction of the Tracy windrose for the calculation period was multiplied by the calculation period emissions.

**Table 2 - Tesla ERC Benefits In SJV**

Pollutant	ERCs (BAAQMD) <sup>1</sup> - tpy	SJV Contribution Factor	SJV Benefit from BAAQMD ERCs, tpy
NOx	251.5	27%	67.9
VOC	105.4	27%	28.5
PM10	196.1	66.2%	129.8

Actual ERC package to be provided to BAAQMD was used: 1.15:1 ratio for NOx and VOC, 1:1 ratio for PM10.

Fraction of ERC benefiting the SJVAPCD was calculated using a 27% factor (SJVAPCD web site) for ERCs on the BAAQMD side, or the windrose factor from previous table for ERCs on SJVAPCD side.

Benefit to SJV was calculated by multiplying BAAQMD ERCs by the contribution factor.

**Table 3 - Determination of Net Mitigation Balance**

Pollutant	Emissions into San Joaquin Valley During Non-Attainment Quarters, tpy	SJV Benefit from BAAQMD ERCs, tpy	SJV Mitigation Balance, tpy
NOx	129.01	67.9	61.1
VOC	31.21	28.5	2.7
PM10	64.9	129.8	0.0
		Total	63.9

ERCs benefiting SJV are subtracted from emission to be offset, resulting in a net mitigation balance.

**Table 4 - Determination of Net Mitigation Value**

SJV Mitigation Balance, tpy	Mitigation Value, \$/ton	Net Mitigation Value, \$
63.9	15,000	\$957,751

Subsequent to the execution of the AQMA, the emission offset package for the Tesla Project was modified to incorporate additional PM10 ERCs from the Antioch area in lieu of a portion of the PM10 emission reductions originally expected from the proposed road paving program for the Altamont Landfill. The inclusion of the revised emission offset package does not impact the calculated mitigation fee under the agreement because proposed PM10 reductions that would benefit the SJVAPCD will still exceed the portion of the project PM10 emissions determined to impact the SJVAPCD.

In response to a data request regarding the adequacy of the mitigation funding, an example mitigation program was presented that would entail the conversion of 45 agricultural internal combustion engines to electric engines at a conservatively estimated cost of \$657,000 and the replacement of 200 wood stoves with CARB PhaseII-certified wood stoves at a conservatively estimate cost of \$250,000 that would generate and Based on performance statistics published by the SJVAPCD for emission reductions associated with implementation of Carl Moyer Program Funds, SJVAPCD has been able to achieve very cost-effective emission reductions with similar programs (on the order of \$5,000/ton). Given this experience, SJVAPCD may be able to generate as much as three times the emission reductions that are reflected in the calculated SJV Mitigation Balance above (ie up to 180 ton/yr of NOx reductions). In addition, CEC Staff have provided an alternate evaluation of the example mitigation agreement with a less conservative assumption regarding baseline engine use that indicates that larger emission reductions are possible from the AQMA.

It is noteworthy that the Tesla AQMA was the first such agreement entered into by SJVAPCD, and served as a catalyst for later discussions and ultimately an agreement between EAEC and SJVAPCD. The later EAEC Mitigation Agreement with the SJVAPCD reflects a similar quantity of mitigation funding (\$1,002,480) based on a similar quantity of emissions to be mitigated under the agreement (66.8 ton/yr). While the calculation methodologies employed by the two projects are different, the total mitigation funding is comparable and appropriately reflects the comparability in the size and impacts of the two power plant facilities.

In addition to the Tesla AQMA, the Tesla project has executed a Memorandum of Understanding with the City of Tracy which commits an additional \$600,000 to the City to be used at the City's discretion to generate local air quality improvements. This additional funding to be made available to the City for its use, will provide additional local air quality benefits that are not required by regulation and have not been factored into the CEC staff analysis.

## VII. Review of CEC Staff Analysis:

I am in general agreement with the CEC Staff Analysis regarding the magnitude and nature of the impacts of the Tesla Power Plant, with the following exceptions:

- Direct PM10 Impacts

I do not agree with CEC staff assertion that there will be significant localized PM10 air quality impacts. As previously stated, impacts from the Tesla Project are expected to be less than the established significance threshold of 5 ug/m<sup>3</sup>. In addition, impacts less than 5 ug/m<sup>3</sup> are considered insignificant because this level of ambient impacts is the accepted precision band of ambient PM10 monitors under the existing Federal Reference Method. While there is the possibility of a small incremental addition to ambient PM10 levels that are already above the applicable ambient air quality standards, the relative impacts from the Tesla Power Plant project are very small and are unlikely to measurably worsen existing PM10 air quality levels. Furthermore, the Tesla Power Plant project is committed to the implementation of a local PM10 reduction program at the Altamont Landfill that will provide localized air quality benefits. In addition, the Tesla Project will fund an SJVAPCD-directed mitigation program that will create further real-time air quality reductions. With these programs in place, it is my opinion that the individual and cumulative impacts of the project will be less than significant.

- Use of PM10 Emission Reductions From Road Paving At Altamont Landfill

I disagree with the CEC Staff assertions regarding the efficacy and effectiveness of PM10 emission reductions from road paving because, contrary to Staff's opinion, the road paving emissions satisfy the requirements to be creditable emission reductions, road paving PM10 emission reductions are appropriate for offsetting the project's combustion PM10 emissions, and the PM10 impacts from the landfill are not seasonal. Each of these is discussed below.

- Road Paving Emission Reductions Satisfy the Requirements To Be Considered Creditable

PM10 emission reductions from road paving meet all of the applicable criteria of issuance of an emission reduction credit (ERC). These reductions will be real, permanent, quantifiable enforceable, and surplus. The Altamont Landfill is an active and heavily used waste disposal facility with real daily PM10 emissions that would be reduced through a road paving program. The reductions are permanent because the Altamont Landfill facility is permitted to serve as the primary disposal site for portions of Alameda and San Francisco Counties for at least the next 35 years and likely longer. Alameda County has a county ordinance

that requires a minimum landfill life of 50 years to be maintained, with Altamont as the designated facility. The reductions are quantifiable using commonly accepted emission factors that have been supplemented with site-specific information to improve their accuracy. The calculations have been reviewed and approved by BAAQMD, CARB and EPA. Comments regarding the calculations from EPA were incorporated into the final ERC approval and no unresolved issues remain with respect to the calculations from the perspective of these three agencies. The reductions are enforceable since both the BAAQMD and EPA will have enforcement authority under the facility's Title V permit to ensure that the newly paved roads are maintained. In addition, as part of the ERC approval, the facility will be obligated to maintain average silt content on paved roads below a maximum surface loading value and will be required to perform regular sampling and analysis to confirm compliance. The reductions are also surplus because the landfill road emissions are part of current baseline conditions and the reductions from the road paving project have not been included in the State Implementation Plan process. In issuing the approval for the road paving ERCs, BAAQMD also conservatively discounted the potential reductions and capped the future emissions from the landfill as a condition of the ERC approval.

- o Road Paving PM10 Emissions Reductions Are Appropriate Offsets for Tesla's PM10 Emissions

CEC Staff have indicated that they favor the location of the Altamont Landfill PM10 reductions because of their proximity to the Tesla Project site and the demonstrated local air quality benefits (a maximum reduction of approximately 7.5 ug/m<sup>3</sup> on a 24-hr basis that is greater than the maximum increase of 4.97 ug/m<sup>3</sup> and a maximum 0.4 ug/m<sup>3</sup> annual benefit that is comparable to 0.5 ug/m<sup>3</sup> maximum annual impact from the project). Staff however neglects a very important positive feature of the road paving reductions – unlike other banked ERCs, the road paving reductions would be contemporaneous with the PM10 emission increases associated with construction and operation of the project, representing substantial real-time mitigation for the project's potential PM10 impacts.

CEC Staff express concern that the PM10 emission reductions will not provide adequate mitigation for PM2.5 impacts from the project. Staff references a June 2000 memo from CARB, raising concerns about the use of road paving to offset emissions from combustion sources that emit primarily PM2.5, in support of their opinion. In addition, Staff estimates that PM2.5 represent on 13 to 15 percent of total PM10 emissions. Consequently Staff believes that the road paving emission reductions should be discounted to only reflect the PM2.5 fraction. We disagree with this assessment.

First, as previously stated, the PM2.5 regulatory program is in its infancy. While ambient measurements are currently being compiled and reported, the SJVAPCD has not been officially designated as nonattainment for either State or Federal

standards. In the interim, EPA guidance has been to continue to exercise new source review of projects using PM10 as a surrogate for PM2.5, while technical difficulties in understanding the full nature of ambient PM2.5 levels, sources and possible controls are resolved. While there is an indication that the SJVAPCD may be designated nonattainment, that determination by CEC Staff, in the absence of a full technical review by CARB and EPA and regulatory due process, is premature, and pursuant to standing EPA policy, PM10 emissions should continue to be used as a surrogate for PM2.5. Applicant has demonstrated that the PM10 emission reductions at the Altamont Landfill will provide a net PM10 air quality benefit. Therefore, impacts to PM10, and by inference PM2.5, are insignificant.

Secondly, CEC Staff reference to the June 2000 CARB memo does not reflect CARB's current position on the use of road paving reductions. On October 17, 2002, representatives of the Tesla Project met with Michael Tollstrup, Chief, Project Assessment Branch of the California Air Resources Board, the division within ARB responsible for reviewing the permitting of power plant projects. Details of the Tesla project and the road paving program at the Altamont Landfill and the CEC Staff preliminary staff assessment opposing the use of road paving PM reductions to offset the project were discussed. Mr. Tollstrup indicated that the June 2000 memo was no longer being enforced and that CARB is not opposed to the use of road paving to offset PM10/PM2.5 emissions from the Tesla Power Plant project. Subsequent to the October 17, 2002 meeting, the proposed issuance of ERCs for the Altamont Landfill road paving were publicly noticed and no adverse comments were received from CARB. Finally on August 26, 2003, I spoke again with Mr. Tollstrup via telephone and Mr. Tollstrup again confirmed that there had been no change in CARB's decision to not enforce the June 2000 memo. In addition to CARB's lack of opposition, neither BAAQMD, EPA nor SJVAPCD has expressed concern with relative particle size of road paving reductions for the Tesla Project. CARB did not comment on either the FSA or the FDOC for the TPP.

For the above reasons, it is my opinion that no discounting of the PM10 reductions is appropriate and the full quantity of PM10 emission reductions should be available for mitigation of the Tesla Power Project emissions. No similar discounting has been proposed by any other agency, including the BAAQMD during its Final Determination of Compliance review (including both EPA and CARB review) and the SJVAPCD during its review and stipulation to the Tesla Air Quality Mitigation Agreement.

- o PM10 Emission Reductions From Road Paving Are Not Seasonal

The Altamont Landfill receives routine, heavy daily use from heavy duty vehicles that generate fugitive PM10 emissions from its high silt content-laden roads. In addition, the site is subjected to high winds for a large portion of the time (as evidenced by one of the most significant wind turbine developments in the State).

Fugitive emissions are a daily event. With the exception of a very limited number of significant rainfall days, the landfill operator has indicated that it must routinely apply water for dust suppression. On the few days when rainfall is so heavy that water application for dust suppression is unnecessary, it is expected that ambient PM10 levels would also be low, due to the well-known effect of rain washout of particulate matter. Thus reductions in PM10 emissions from the landfill will provide year-round benefits.

- No SO2 Mitigation Is Required Because Potential Secondary PM10 Impacts Are Insignificant

Air quality modeling has demonstrated that the maximum air quality impacts of SO2 from routine operation of the Tesla Power Plant are extremely small, only 0.04 ug/m<sup>3</sup> and 0.72 ug/m<sup>3</sup> on an annual and 24-hour average basis respectively. Conversion of SO2 to PM10 sulfate can occur through either gas-phase or aqueous phase conversion of SO2 to sulfuric acid. Once sulfuric acid is formed it will react rapidly to form PM10 sulfate. Gas-phase conversion rates are slow, on the order of 1% per hour or less in the western United States. Aqueous phase conversion may be several times greater and typically dominates in the winter months when PM10 is elevated (CARB, 2002)<sup>1</sup>. At these low conversion rates, SO2 emissions would disperse many miles downwind, and would be at much lower concentrations before conversion was complete. Assuming that 10% of the SO2 were to convert to sulfate at the point of maximum impact (a reasonable maximum, given the short distances involved), and adjusting for the differences in molecular weight between ammonium sulfate and SO2, I estimate a maximum particulate sulfate impact of approximately 0.15 ug/m<sup>3</sup> on a 24-hour average basis. Even assuming as much as 35% of the SO2 were converted of these short distances (as has been assumed as a CEC Staff conservative upper bound in other siting cases), the maximum particulate sulfate impact would be approximately 0.5 ug/m<sup>3</sup> on a 24-hour average. This range of particulate sulfate impact represents a miniscule amount compared to background PM10 levels that is not likely to be measurable. In addition, both Applicant and Staff have provided calculations of the air quality benefits of an example mitigation program under the AQMA demonstrating that excess PM10 reductions can be generated that would offset this small impact. As a result, it is my opinion that Tesla project SO2 impacts would not measurably cause or contribute to violations of ambient PM10 standards. Project SO2 emission impacts on future PM10/PM2.5 levels are therefore insignificant and do not require further mitigation.

- CEC Proposed Mitigation Methodology Should Be Rejected

CEC staff methodology should be rejected for several important reasons:

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<sup>1</sup> California Air Resources Board, *Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates*, May 2002.

- The CEC Assertion That Additional Mitigation is Needed And The Specific Calculation Methodology Is Without Endorsement By EPA, CARB, BAAQMD or SJVAPCD

None of the special purpose air quality agencies with expertise to determine potential air quality impacts has urged that additional mitigation beyond that specified in the DOC and the AQMA should be required for the project and none have reviewed and endorsed the calculation rubric suggested by CEC Staff. BAAQMD and SJVAPCD have both affirmatively concluded that air quality impacts from the Tesla Project will be insignificant with the Applicant-proposed mitigation. Deference should be given to these agency determinations as has been historically done (most recently, in the East Altamont case).

- PM10 reductions from road paving should not be discounted as proposed by CEC Staff

The Staff discounting of PM10 emission reductions from the proposed Altamont Landfill has been previously discussed and is technically inappropriate. The proposed discounting ignores specific EPA policy direction to utilize PM10 as a surrogate for PM2.5 emissions and site-specific data that indicate a much higher portion of the emissions are PM2.5.

- Tesla Project Emissions Will Not Impact SJVAPCD All of The Time As Postulated In the CEC Staff Calculation

The Staff methodology applies the entire project emissions as a CEQA liability and does not address the fact that Tesla project emissions will not always impact the SJVAPCD. According to available windrose data, winds in the area would carry Tesla Project emissions away from the SJVAPCD airshed approximately 34% of the time during the winter quarters (quarters 1 and 4) and approximately 23% of the time in the summer (quarters 2 and 3). This has not been considered in the CEC analysis.

- CEC Staff Proposal Mitigation Is Inconsistent With SJVAPCD Air Quality Regulations and With Recent CEC Siting Decisions in the SJVAPCD

According to CEC Staff calculations, there is a residual CEQA liability that must be offset on a quarter by quarter basis. The Staff proposed requirement is not consistent with the SJVAPCD new source review rule provisions that allow for the interseasonal movement of certain NOx, VOC and PM10 reductions. For example, NOx and VOC emission

reductions in the summer months may be used to offset emissions increases during any time of the year under the SJVAPCD new source review rule. In addition, emission reductions of NOx and SO2 are allowed to offset emissions increases in PM10. Furthermore, if specific emission reduction targets are to be set, any targets should be annual targets, as was done in the EAEC case (Condition AQ-SC5 requires a NOx reduction of 66.8 tons per year under the mitigation agreement, with no requirement for a specific quarterly distribution).

### VIII. Conclusion

The Tesla Power Plant Project as proposed will comply with all applicable air quality laws, ordinances, regulations and standards with the proposed conditions of certification, as modified by the recommended condition changes articulated in XI., below. In addition, with the mitigation approved by the BAAQMD and the implementation of the terms of the Tesla AQMA, there will be no significant air quality impacts from the project.

### XI. Recommended Changes to Conditions of Certification

I am in general agreement with the Staff-proposed Conditions of Certification except for the following proposed changes.

In lieu of Staff's proposed conditions AQ-SC1 through AQ-SC4, I recommend that the more recent conditions AQ-SC1 through AQ-SC3 from the recently approved Pico Power Project be incorporated for fugitive dust mitigation. Consistent with the Pico Decision, I also recommend that condition AQ-SC4 be deleted. The proposed language is provided below:

**AQ-C1** The project owner shall designate and retain an on-site air quality construction mitigation manager (AQCMM) who shall be responsible for maintaining compliance with conditions **AQ-C2** through **AQ-C3** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities identified in Conditions **AQ-C1** through **AQ-C3** to one or more air quality construction mitigation monitors. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM may have other responsibilities in addition to those described in this condition. The on-site AQCMM shall not be terminated without written consent from the CPM.

**Verification:** At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM, for approval, the name, contact information and qualifications for the on-site AQCMM and air quality construction mitigation monitors.

**AQ-C2** The project owner shall provide a construction mitigation plan, for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions **AQ-C3**.

**Verification:** At least 30 days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt. Otherwise, the plan shall be deemed approved.

**AQ-C3** The on-site AQCM shall submit to the CPM, in the monthly compliance report, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of preventing fugitive dust plumes from leaving the project site and controlling other construction-related emissions:

- a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered every four hours of construction activities, or as necessary to prevent fugitive dust plumes from leaving the project site. The frequency of watering can be reduced or eliminated during periods of precipitation.
- b) No vehicle shall exceed 10 miles per hour within the construction site.
- c) The construction site entrances shall be posted with visible speed limit signs.
- d) All vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- f) All unpaved entrances to the construction site shall be graveled or treated with dust soil stabilization compounds.
- g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan, to prevent run-off to roadways.
- i) All paved roads within the construction site shall be swept as necessary to prevent the accumulation of dirt and debris.
- j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily or as necessary to prevent the accumulation of dirt and debris.
- k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.

- l) All vehicles that are used to transport solid bulk material and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- m) Wind erosion control techniques, such as wind breaks, water, chemical dust suppressants and vegetation, shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.
- n) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.
- o) All large construction diesel engines, which have a rating of 50 hp or more, shall meet, at a minimum, the Tier 1 ARB/U.S. EPA certified standards for off-road equipment.
- p) All large construction diesel engines, which have a rating of 50 hp or more that do not have an U.S. EPA Tier 1 particulate standard (50 to 175 hp engines) and do not meet Tier 2 particulate standards, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types.
- q) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions AQ-C3(o) and AQ-C3(p) above.

Observations of visible dust plumes would indicate that the existing mitigation measures are not resulting in effective mitigation. The AQCMM shall implement the following procedures for additional mitigation measures if the AQCMM determines that the existing mitigation measures are not resulting in effective mitigation:

- r) The AQCMM shall direct more aggressive application of the existing mitigation methods within 15 minutes of making such a determination.
- s) The AQCMM shall direct implementation of additional methods of dust suppression if step a) specified above, fails to result in adequate mitigation within 30 minutes of the original determination.
- t) The AQCMM shall direct a temporary shutdown of the source of the emissions if step b) specified above fails to result in adequate mitigation within one hour of the original determination. The activity shall not restart until one full hour after the shutdown. The owner/operator may appeal to the CPM any directive from the AQCMM to shutdown a source, provided that the shutdown shall go into effect within one hour of the original determination unless overruled by the CPM before that time.

**Verification:** In the MCR, the project owner shall provide the CPM a copy of the construction mitigation report and any diesel fuel purchased records, which clearly demonstrates compliance with condition **AQ-C3**.

I also recommend that in order to be consistent with the recent decision in the East Altamont case, that an appropriately modified form of AQ-SC5 from the East Altamont final decision be adopted in lieu of Staff's proposed condition AQ-SC7 with the emission reduction targets identified in the AQMA.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

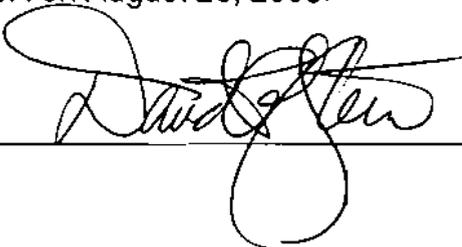
Application for Certification for the  
Tesla Power Project

DECLARATION OF  
DAVID A. STEIN, P.E.

I, David Stein, declare as follows:

1. I am presently employed by URS Corporation, as Vice President, Environmental and Energy Services.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Air Quality for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Oakland, CA on August 26, 2003.



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## AREAS OF EXPERTISE

- Power Plant Licensing
- Controversial Industrial Development
- Compliance/Due Diligence
- Expert Testimony

## EDUCATION

University of Texas: M.S.,  
Environmental Health  
Engineering, 1981

University of California:  
B.S., Environmental  
Engineering, 1977

University of California:  
B.S. Biological Sciences,  
1977

## REGISTRATIONS

Registered Professional  
Engineer, Chemical,  
California, CH004285,  
1984

## PROFESSIONAL HISTORY

URS, Senior Project  
Manager, 2000-Present

Radian, Senior Program  
Manager, 1996-2000

CARNOT, General  
Manager, 1992-1996

Ebasco Environmental,  
Manager, Environmental  
Services, 1990-1992,

Dames and Moore,  
Manager, Air Resources,  
1988-1990,

Energy Systems

## REPRESENTATIVE EXPERIENCE

Mr. Stein has 23 years experience managing, staffing, coordinating, and conducting multidisciplinary compliance/due diligence audits and environmental assessments for a wide range of industrial projects. He also has extensive experience in the permitting of major/controversial projects and a focus in the power, petroleum and chemical market sectors. Mr. Stein's technical expertise is in air quality matters including toxic and criteria pollutant emission quantification (both stationary and mobile sources), air pollution control technology evaluations, fugitive emissions studies, regulatory compliance audits and analyses, health risk assessments, air quality dispersion modeling, visibility impact modeling, emissions measurement, continuous emissions monitor and litigation support/expert witness testimony.

### Air Quality Permitting

- Managed the preparation of air permit applications (local and/or PSD review) for over twenty individual projects involving the installation of natural gas and oil-fired peak power plants, merchant power plants or cogeneration plants across California using gas turbine technologies (General Electric Frame 5, Frame 6, Frame 7EA, Frame 7FA, LM2500, LM5000, LM6000, Allison 501, Solar Mars, Solar Centaur, Pratt-Whitney JT4, and Siemens V84.2). These applications covered a number of control technologies including water injection, steam injection, selective catalytic reduction and oxidation catalysts. Recent projects include 320 MW Sunrise Cogeneration and Power Project, 500 MW Southern Energy Contra Costa Power Plant Unit 8 Project, 500 MW Southern Energy Potrero Power Plant Unit 7 Project, GWF 98.7 MW Hanford Energy Park Project, 160 MW SEPCO Project, and 160 MW Campbell Soup Cogeneration Project.
- Managed permitting of three 22-MW coal-fired circulating fluidized bed cogeneration plants in The San Joaquin Valley including oversight and technical input for of a number of critical tasks: CEQA compliance, air quality permitting, emission offset procurement, health risk assessment and solid waste disposal/recycling evaluations. Prepared the air quality and public health sections of the EIR. Prepared the air quality permit application, including emissions characterization, BACT analysis, dispersion modeling, regulatory compliance

Associates, Manager of  
Regulatory Affairs, 1986-  
1988

EBASCO Services,  
Principal Air Quality  
Engineer, 1981-1986

South Coast Air Quality  
Management District, Air  
Quality Engineer, 1981-  
1981

Kern County Air Pollution  
Control District, Air  
Quality Engineer II, 1977-  
1980

## TRAINING

California Air Resources  
Board, Visible Emissions  
Evaluation, 1980

assessment and led subsequent negotiations with the air district regarding conditions of approval. Managed the preparation of a comprehensive multipathway health risk assessments. Provided technical and strategic support through extended litigation, including negotiations with the State Attorney General's Office and the California Air Resources Board. Participated in extensive community outreach program including several public speaking engagements and presentations to community groups, planning commissions and council meetings. Provided expert witness testimony in landmark California Environmental Quality Act (CEQA) case (Kings County Farm Bureau vs. City of Hanford). Provided technical and strategic support to settlement negotiations as a member of the settlement team. Served as liaison to the air district and the Environmental Oversight Committee during startup. Prepared AB2588 air toxics inventory plan and report. Prepared application for experimental research to evaluate and test alternate petroleum coke fuels and varying natural gas/petroleum coke proportions. Prepared synthetic minor permit application for avoidance of Title V requirements.

- Managed permitting effort for five 20-MW petroleum coke-fired circulating fluidized bed power plants in the Bay Area including all air permit applications and technical responses, air quality dispersion modeling and health risk analyses. Managed the implementation of a comprehensive semi-volatile organic measurement program on a pilot scale circulating fluidized bed combustor to support emission estimates for the air permit and health risk assessment. Prepared a detailed analysis of the potential effects of fine particle enrichment of trace metals on baghouse penetration. Prepared a comprehensive assessment of startup and shutdown emissions. Provided technical support to the EIR contractor. Participated in extensive community outreach program including several public speaking engagements and presentations to community groups, planning commissions and council meetings. Provided strategic planning and permitting for several permit amendments following startup. Supervised preparation of AB2588 air toxics inventory plan and report. Provided expert witness testimony for variance proceedings. Prepared synthetic minor application for avoidance of Title V requirements.
- Managed permitting effort for 49-MW coal and petroleum

coke-fired circulated fluidized bed cogeneration plant in San Joaquin Valley including local air permit application and PSD permit to EPA Region IX. Application included detailed emissions characterization, BACT analysis, and dispersion modeling. Prepared technical support for banking of emission reduction credits for existing boiler displaced by cogeneration plant. Prepared air quality and noise portions of documented initial study used by Lead Agency to issue a Negative Declaration.

- Provided strategic support and air quality permitting for the potential conversion of a 49-MW coal-fired power plant to petroleum coke. Support included agency liaison, technical review of air quality permit application and preparation of a comprehensive health risk assessment for several alternate fuels using the ISCST and ACE2588 programs.

#### Waste Incineration

- Performed air quality permitting, health risk assessment and AB2588 air toxics inventory for controversial hazardous waste incineration project at a dry process Portland cement plant in Kern County. Provided extensive coordination with Department of Health Services on health risk assessment methodology and results. Project included ground breaking emissions characterization studies including the design and implementation of a trace metals balance investigation for the cement kiln which served as the basis for a state-of-the-art health risk assessment. Served as principal liaison with CDHS and Kern County APCD. This facility is the only California facility permitted to generate liquid hazardous wastes which are generated offsite.
- Performed emissions characterization study and health risk assessment for open burning/open detonation of explosive hazardous waste generated by a West Coast manufacturer of energetic devices. INPUFF model was used in conjunction with proprietary spreadsheet-based risk assessment model developed for the project. HRA was submitted to both the Department of Health Services and Monterey Unified Air Quality Management District.
- Supported the air quality and conditional use permitting of tire-derived fuel (TDF) and mixed waste paper (MWP) as supplemental fuel options for a 10-MW woodwaste-fired power plant. Assisted in developing MWP supply and

delivery options, performing economic feasibility analysis for MWP, preparing documented Initial Study (environmental assessment) and conditional use permit application, characterizing criteria and toxic air emissions, and quantifying ash production rates. Prepared health risk assessment of base case, TDF/wood case and MWP/wood case using ISCST3 dispersion model in conjunction with ACE2588 health risk assessment model. Prepared and presented results at several public hearings on the project. Served as technical resource for a variety of CEQA-related issues including process, time line, and potential environmental impacts. Provided strategic planning and community outreach support with business leaders, decision makers and residents.

- Prepared the combustion and air pollution control systems component of a detailed final design specifications document required by South Coast Air Quality Management District for the 400 ton/day Southeast Resource Recovery Facility (SERRF) project in Long Beach. Project included a detailed description of the Steinmuller mass burn boiler, Thermal DeNOx system, dry scrubber/baghouse acid gas and particulate controls. Detailed combustion calculations were performed to address flue gas composition and component residence times.

#### NOx Control Evaluations

- Evaluated reasonable available control technology (RACT) for a 60,000 lb/hr sanderdust/natural gas cofired boiler. The evaluation addressed the feasibility of a range of combustion and post-combustion control options including staged combustion, low excess air, burners-out-of-service, overfire air, flue gas recirculation, selective noncatalytic reduction and selective catalytic reduction. Performed a comprehensive baseline emissions characterization including sanderdust fuel analysis, sanderdust screw feeder calibration and parametric boiler and emissions performance for varying excess oxygen, load and sanderdust feed rate. Planning level cost estimates and cost-effectiveness were provided for feasible/practical control options. Study was used as a basis for air district development of an exemption from the existing retrofit rule and a site-specific RACT requirement.
- Evaluated the feasibility of selective catalytic reduction (SCR) for control of emissions from an 49- MW biomass-

fired boiler. Performed a detailed assessment of the expected flue gas characteristics of the boiler based upon multiple biomass feedstocks (orchard prunings, cotton stalks, Douglas fir, Lodgepole pine, and grapevine prunings). Prepared a comprehensive survey and budgetary request for SCR and solicited/compiled responses from several domestic and international SCR vendors. Report was used a basis for air district finding that SCR was not demonstrated or technologically feasible for this category of source.

- Prepared an internal combustion engine inventory and NOx control plan for a petroleum refinery in Kern County. The control plan assessed efficiency and cost of a number of control options including: pre-stratified charge, retarded injection timing, derating, selective noncatalytic reduction and electrification. A sensitivity analysis for electrification was also performed based on changes in fuel and electricity costs. The refinery submitted a control plan to the air district based on the outcome of the study.

#### Environmental Impact Analysis

- Managed preparation of an Application for Certification (AFC) to the California Energy Commission (CEC) for a 320 MW cogeneration facility serving thermally enhanced oil recovery operations in Kern County, CA. Coordinated detailed studies in the areas of facility design, air quality, biological resources, cultural resources, land use, public health, noise, worker health & safety, socioeconomics, agriculture & soils, traffic & transportation, visual resources, hazardous materials management, waste management, water resources, geologic resources & hazards, and paleontologic resources.
- Managed preparation of an Application for Certification (AFC) to the California Energy Commission (CEC) for a controversial 12 million gallon/year ethanol facility and associated 150-MW combined cycle cogeneration facility. Prepared and directed toxic and criteria pollutant emissions inventory, dispersion modeling, health risk assessment, analysis of occupational safety from benzene exposure associated with ethanol denaturing, emission offset search/procurement, participation in several rule promulgation proceedings, numerous community outreach sessions, public workshops, evidentiary hearings and expert testimony. Prepared a comprehensive emission offset quantification protocol to address the displacement of a wide variety of agricultural residue open burning in

seven Sacramento Valley counties.

- Managed environmental assessment (pursuant to CEQA) and air quality permitting (both local and EPA PSD permits) and of a comprehensive integrated pulp mill modernization program of the integrated pulp mill in Northern California. Project involved a new recovery boiler, black liquor multiple effect evaporation system upgrades, bleach plant improvements, lime kiln improvements, condensate stripper with dedicated thermal oxidizer and modifications to power boiler. Included comprehensive inventory for both and noncriteria pollutant, detailed regulatory compliance assessment, extensive dispersion modeling, a health risk assessment, and community outreach.
- Managed a comprehensive environmental and siting review for the California Energy Commission (CEC) of a controversial 3100 ton/day waste-to-energy plant in Southern California. Coordinated the efforts of over 20 environmental scientists and engineers assigned to individual task areas to review an Application For Certification (AFC) for data adequacy, prepare data requests, conduct public workshops and site visits/surveys, determine compliance with applicable laws, ordinances, regulations and standards, and perform a CEQA-equivalent analysis of environmental impacts. Provided peer review for all preliminary staff assessments, as well as, technical quality assurance in the areas of air quality, public health, noise, waste and safety. Key participant in multiple agency coordination/policy meetings involving South Coast AQMD, California Air Resources Board and CEC staff.
- Managed preparation of an Environmental Impact Report for a 49-MW natural gas-fired cogeneration plant in the San Joaquin Valley. The project included a General Electric LM-5000 gas turbine equipped with selective catalytic reduction (SCR). The potential release of anhydrous ammonia was a specific concern for the Lead Agency. Dense gas modeling indicated the potential for hazardous ammonia concentrations during a worst-case accident. Based on these findings, the project converted to an aqueous ammonia injection system to mitigate this potential risk.
- Managed the preparation of a documented Initial Study and Conditional Use Permit application for a 49-MW

natural gas-fired cogeneration plant to be located in the Bay Area adjacent to a major chemical manufacturer. Major issues in the project were the potential release of ammonia from the SCR system and the availability of a water supply. Use of aqueous ammonia for the SCR system and implementation of process water recycling were identified as important mitigation measures to resolve these concerns.

- Prepared the air quality portion of a controversial EIR for a major coal transshipment facility to be located in Long Beach. The project included a detailed characterization of fugitive dust emissions from coal handling and storage, ship transport and hoteling emissions within continental waters and railroad emissions within the air basin. A number of controversial mitigation measures were conceived and investigated including: enclosed coal storage, enclosed railcars, electrification of rail transport, implementation of NOx controls on locomotives and cold-ironing (electrification) of ships during hoteling. Many of these measures were later adapted by the South Coast AQMD as long term control strategies in the basin's air quality management plan.

#### International Air Quality Regulation Development

- Managed the preparation of a comprehensive summary and critical analysis of the strengths and weaknesses of U.S. air quality regulations with special emphasis on emissions trading for potential implementation in Holland; coordinated and moderated intensive two week series of meetings with Dutch officials from Ministry of Environment and Ministry of Economic Affairs and industrial, environmental, and government agencies throughout the U.S.

#### Due Diligence and Compliance Auditing

- Completed an environmental due diligence review for acquisition by a major midwestern utility of four PG&E power plants proposed for divestiture. The due diligence effort included facility visits, collection of data from the central data room, detailed review and analysis of permits and regulations, and preparation of a report summarizing key environmental liabilities and operating constraints for the future. In addition to the written report, briefings were provided in progress.

- Staffed and managed a multidisciplinary team of engineers and scientists for a fast-track due diligence review of domestic petroleum refineries for two major oil companies engaged in a proposed (and ultimately successful) joint venture involving all domestic downstream operations. Significant environmental, health and safety (EH&S) liabilities were identified in real-time, including regulatory background and estimated capital and operating cost of compliance. Liability estimates were rolled-up into a merger-wide summary that served as a basis for negotiation. In addition to real-time, individual facility reports (summarizing existing, pending and proposed regulatory constraints, significant liabilities and cost projections), interim and final management reports were prepared to keep the corporate due diligence team appraised of ongoing findings. Finally, at the request of the newly formed joint venture, input was provided on the quality of their respective EH&S organizations and industry best practices.
- Served as the air quality expert for due diligence review to support the purchase of all downstream operations of a major west coast oil company by a large independent. The due diligence review included 4 petroleum refineries, 12 terminals, 14 pipeline pump stations and over 100 bulk plants in the states of California, Oregon, Washington, Alaska and Hawaii. Significant environmental liabilities and operating limitations were reported to the management team in near real-time.
- Performed a due diligence assessment the North County Resource Recovery Facility waste-to-energy project for financing. Ability to comply with air quality permit conditions and solid waste restrictions were significant aspects of the review. Findings were incorporated into an overall engineering and environmental assessment report for the State Pollution Control Financing Authority.
- Managed a team of engineers tasked with evaluating current and future compliance (2-yr and 5-yr projections) with air quality regulations for a major aerospace manufacturing complex comprising over ten different facilities. Facilities included various airplane part manufacturing lines with mechanical/chemical etching, cleaning, surface coating, assembly and testing of aerospace components. Program was implemented in conjunction with a specialty manufacturing consultant evaluation of each production node in order to create a

master modernization/compliance options matrix for corporate cost-benefit analyses of various modernization/expansion schemes.

- Managed the compliance auditing of five Southern California corrugated container manufacturing facilities with respect to hazardous waste management and Proposition 65 regulations.

#### Regulatory Advocacy

- Managed air quality strategy development and technical support for controversial proposed merger of two Southern California electric utilities during California Public Utilities Commission (CPUC). Provided peer review for proponent's environmental assessment focusing on the air quality impacts. Formulated strategy for impact analyses, development of mitigation, detailed assessment of SCAQMD Rule 1135 compliance options and development of procedural strategy in CPUC proceedings.
- Liaison with South Coast AQMD management on impacts of proposed ban on solid fossil fuel combustion. Prepared letter campaign to Hearing Board members and presented technical analyses and testimony on AQMD control measure to Board Hearing Panel. Coordinated testimony with California Energy Commission (CEC) Executive Director.
- Developed a proposed amendment to Bay Area AQMD New Source Review rule to streamline processing of minor modification. Presented testimony at public workshop. Coordinated with rule development staff to achieve objective.
- Developed a proposed amendment to San Joaquin Valley APCD to exempt projects with no change in permitted emissions from New Source Review. Worked with rule development staff to achieve objective.
- Developed a proposed amendment to Yolo-Solano AQMD New Source Review rule to allow interseasonal trading of ozone precursor emission reduction credits from peak ozone periods to nonpeak ozone periods. Coordinated proposed change with Sacramento Valley Air Basin Coordinating Council and California Air Resources Board and obtained consensus support for change from both agencies. Prepared staff report and assisted Yolo-

Solano district staff in presentation at Board meeting.

- Developed emission factors, calculations, proposed language, and proposed evaluation forms for emission reduction banking associated with reduced open burning of agricultural residue in the Sacramento Valley. Coordinated activities with several air districts, Sacramento Valley Air Basin Coordinating Council, and Rice Industry Association. Provided technical input on proposed amendments to the Rice Straw Burning Reduction Act (Connelly).

#### Emission Reduction Credit (ERC) Banking and Procurement

- Developed and implemented an extensive survey of upper San Joaquin Valley businesses for potential sources of NOx emission reductions. Managed follow-up effort and provided input on final negotiations. Provided recommendations on control implementation strategy. Prepared application for banking credits. Quality assured District engineering analysis and final ERC amounts.
- Coordinated an extensive search of potential ERC sources for a major new independent power project in the Sacramento area. Conducted intensive evaluation of engineering analysis and documents supporting each ERC. Coordinated with the staffs of several potential ERC suppliers, several air districts, CEC and EPA Region IX on potential ERC issues vis-a-vis EPA's Emissions Trading Policy for nonattainment areas. Assisted in development of purchase strategy and provided technical review of contract.
- Managed preparation of ERC applications for shutdown of an 8-MW natural gas-fired cogeneration facility supporting thermally enhanced oil recovery operations in Southern California
- Prepared ERC applications for shutdown of a CO Coker and Fluid Catalytic Cracking Unit at a 50,000 bbl/day refinery in Kern County

#### VOC Emission Control

- Managed emissions characterization effort and VOC control technology evaluation for VOC emissions from treater ovens and press vents in a high pressure, phenol-formaldehyde resin-based laminate manufacturing facility. Evaluation considered carbon adsorption, thermal oxidation, and catalytic oxidation to replace an existing wet scrubber. Managed the preparation of a detailed

preliminary engineering design and bid specifications document for the installation of a regenerative thermal oxidizer, reviewed bids, participated in short-list presentations and recommended vendor.

- Conducted field assessment of VOC emissions from a dissolved air flotation unit and ancillary equipment in a Kern County petroleum refinery. Recommended an improvement in the design of the cover latch mechanism to enhance operator access to facilitate VOC and odor control.

#### Waste Characterization and Pollution Prevention

- Evaluated potential end uses of flyash produced in fluidized bed combustion of petroleum coke including road base, finished cement, wallboard and other construction applications. Managed evaluations of simulated flyash at various operating conditions for pH, biotoxicity, and presence of toxic metals with respect to Title 22 and RCRA requirements. Identified and spearheaded recycling of flyash with industrial end user in cement manufacturing.
- Evaluated ammonia consumption trends in selective noncatalytic reduction and identified opportunity for dramatic reductions in ammonia consumption/emissions while maintaining permitted control requirements.

#### Health Risk Assessment (HRA)

- Managed preparation of HRAs for three 22-MW petroleum coke fired small power plants in the San Joaquin Valley and five 18-MW petroleum coke-fired small power plants in the Bay Area. Analysis included use of ISCST and a proprietary risk assessment model to consider the potential exposure from metals and organics via inhalation, dermal absorption, soil ingestion, water ingestion, fish ingestion, crop ingestion, and mother's milk pathways.
- Developed and implemented a proprietary spreadsheet HRA model to evaluate the potential impacts of increased hazardous waste incineration in a cement kiln. The model included inhalation, dermal absorption, soil ingestion, water ingestion, fish ingestion, crop ingestion, and mother's milk pathways and is still in use today as a primary compliance tool for the regulating air district.
- Prepared a HRA for a fiberglass manufacturing facility in the San Joaquin Valley for compliance with AB2588

using the ISCST and ACE2588 computer models. The HRA was used to demonstrate that risks from the facility were not significant and did not require public notification.

- Prepared a HRA for use of tire-derived fuel as a supplement to woodwaste fuel using ISCST3 and ACE2588 computer models. The HRA demonstrated that risk from a proposed 90 day test burn would be insignificant. Performed subsequent evaluations of other alternate fuel scenarios, including the use of waste paper.
- Prepared a HRA for a vegetable oil manufacturing facility in the San Joaquin Valley for compliance with AB2588. The analysis included use of both ISCST and ISCST2 in conjunction with two versions of the ACE2588 model to evaluate potential significance. The facility was able to avoid implementation of a mandatory risk reduction audit program based on the refined modeling results.

#### Emissions Measurement

- Managed comprehensive criteria and air toxic emissions measurement program for compliance with air quality permit and AB2588 requirements at a petroleum coke-fired small power plant in the San Joaquin Valley.
- Managed measurement program to evaluate the performance of impingement-type wet scrubbers to control emergency releases of acutely hazardous gases (ehlorine, hydrofloric acid, phosphine, hydrogen bromide, hydrochloric acid, silane, boron tetrachloride, and others) used in a semiconductor etcher manufacturing complex. Program included measurements of both inlet and outlet concentrations to determine capture efficiency. Inlet measurements were also compared with expected target concentrations based on critical flow orifice calculations.
- Managed gaseous pollutant measurement program for installation of a new boiler equipped with a low NOx burner. The program was successful in demonstrating compliance with a 30 ppm limit and allowing the facility to avoid Title V reporting requirements.

#### Litigation Support/Expert Witness Testimony

- Kings County Farm Bureau v. City of Hanford
  - Provided pretrial consultation, strategy support, depositions in Superior and Appellate Courts, expert witness testimony in Superior Court in the

areas of air quality and public health for a landmark California Environmental Quality Act (CEQA) law suit involving the adequacy of an EIR prepared for the siting of a power plant. The lawsuit was successfully settled. Served on the settlement negotiation team as well as providing strategic and technical support to the settlement process. Served as a initial liaison to the Environmental Oversight Committee created during the settlement process.

- Kings County Farm Bureau v. City of Hanford
  - Provided pretrial consultation, strategy support, depositions in Superior and Appellate Courts, expert witness testimony in Superior Court in the areas of air quality and public health for a landmark California Environmental Quality Act (CEQA) law suit involving the adequacy of an EIR prepared for the siting of a power plant. The lawsuit was successfully settled. Served on the settlement negotiation team as well as providing strategic and technical support to the settlement process. Served as a initial liaison to the Environmental Oversight Committee created during the settlement process.
- California Energy Commission (CEC) Power Plant Siting Cases
  - Provided program management, written and expert witness testimony in the areas of air quality, public health, waste, noise, need and power plant alternatives on numerous power plant siting cases processed by the CEC under an administrative law process where all technical analysis is ultimately adjudicated in evidentiary hearings.

**PUBLICATIONS**

Stein, D.A. and Crow, G, "Problems in Calculating Fugitive Dust Emissions for Coal Handling Facilities and Storage Piles," *Environmental Progress*, v. 3, no. 1., 1984.

Stein, D.A. and Pope, F., "Acid Rain - Selecting the Optimum Controls," *Proceedings of the 1984 ASCE Energy Conference*, American Society of Civil Engineers, Los Angeles, CA, 1984.

Stein, D.A., "Resolving Air Quality Issues at a 5-MW Biomass-Fired Power Plant," *Proceedings of PG&E Annual Energy Conference*, Pacific Gas & Electric, Oakland, CA, 1986.

Stein, D. A. "Assessing Risks Completely," *Water Environment and Technology*, v. 5, no. 4, 1993.

**TOPIC: PUBLIC HEALTH**

**WITNESSES: DAVID STEIN**

## Testimony – Public Health

- I. Name: David Stein
- II. Purpose: My testimony addresses the public health impacts from the construction and operation of the Tesla Power Project.
- III. Qualifications: I am a Vice President with URS Corporation. I work in URS' Oakland office located at 500 12<sup>th</sup> Street, Suite 200, Oakland, CA 94607. My responsibilities include management of the air quality and public health risk assessment practices in Northern California. I hold a B.S. degree in Biological Sciences, a B.S. degree in Environmental Engineering and a M.S. in Environmental Health Engineering. I am also a registered chemical engineer in California. I have approximately 26 years of experience managing, staffing, coordinating, and conducting multidisciplinary environmental assessments for a wide range of major development projects, including extensive work in permitting, licensing and review of power projects. During the course of my professional career I have worked as an air quality regulator (both Kern County Air Pollution Control District, a predecessor to the San Joaquin Valley Air District, and the South Coast Air Quality Management District. I have also served as a consultant to industry and government on air quality and public health matters. I have previously testified at the California Energy Commission on public health matters, having had involvement as a technical expert in air quality and public health in over a dozen siting cases before the CEC. My technical experience includes toxic and criteria pollutant emission quantification (both stationary and mobile sources), air pollution control technology evaluations, fugitive emissions studies, health risk assessments, air quality dispersion modeling, visibility impact modeling, emissions measurement and continuous emissions monitoring.
- IV. In addition to this written testimony, I am sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):
  - Exhibit 1, AFC, Section 5.15, Appendix K-12 and K-13
- V. To the best of my knowledge all referenced documents and all of the facts contained in this testimony are true and correct. To the extent this testimony contains opinions, such opinions are my own. I make these statements and provide these opinions freely and under oath for the purpose of constituting sworn testimony in this proceeding.
- VI. Summary:

The Tesla Power Project will be a natural gas-fired combined cycle power plant and associated linear facilities. The project will be fueled with natural gas that will be delivered to the power plant site via a new 24-inch diameter, 2.8-mile pipeline. The plant switchyard will be connected to the Pacific Gas and Electric Company (PG&E) Tesla Substation with a new 0.8 mile long transmission line.

The site includes a power generation facility, a switchyard, and a storm water sedimentation/detention pond, and will be located on a 60 acre parcel. The heat recovery steam generator (HRSG) stacks will exhaust combustion gases at 200 feet above grade elevation.

An analysis of the potential public health impacts of the Tesla Power Plant was conducted by URS technical staff under my direction. The analysis is described in the public health section of the AFC and is summarized below.

- Construction Phase Emissions

Due to the relatively short duration of the construction of the Tesla Power Project (i.e., approximately 23 months), no significant long-term public health effects are expected. To ensure worker health and safety during actual construction, safe work practices will be followed.

An analysis of long-term health risks associated with particulate matter from diesel exhaust was conducted. Increased cancer risk and chronic hazard index were estimated based on the diesel exhaust cancer unit risk factor and chronic hazard index. The increased cancer risk and chronic hazard index were estimated based on the average of the two modeled years (1997 and 1999) of construction equipment  $PM_{10}$  impacts of  $0.91 \mu\text{g}/\text{m}^3$ . Because the impacts were not near a residential area and the construction lasts only two years, an exposure duration of eight hours per day, 240 days per year for two years was used to estimate the cancer risk. The estimated cancer risk is 1.7 in one million. The estimated chronic hazard index is 0.18.

- Operations and Maintenance Phase Emissions

The primary sources of emissions from facility operations are the natural gas-fired combustion turbine generators (CTG) and the aqueous ammonia slip stream from the selective catalytic reduction (SCR) control system located in the HRSG. The cooling tower is a secondary source of emissions from the facility.

To evaluate potential human health risk, air toxic emissions from project operations were estimated on a maximum hourly and a maximum annual basis. To calculate the air toxic emissions resulting from the project, four components were considered: the combustion turbines, the cooling tower, the emergency generator, and the emergency fire water pump engine.

The maximum chronic total hazard indices (THI) resulting from the proposed project was estimated to be 0.0211. The maximum chronic THI was located near the northeast boundary of the project. The maximum acute THI was estimated to be 0.0739. The maximum acute THI was located 3 miles west southwest of the facility boundary. The Table below presents the results of the Health Risk Assessment (HRA) for proposed operations.

### Estimated Cancer Risk and Acute and Chronic Total Hazard Indices (THIs)

	Maximum Cancer Risk	Maximum Chronic THI	Maximum Acute THI
Tesla Power Project	$6.85 \times 10^{-6}$	0.0211	0.0739
Significance Criteria	$10 \times 10^{-6}$	1.0	1.0
Significance Determination	Insignificant	Insignificant	Insignificant

Each of the estimated chronic and acute THIs are well below the significance criteria of one (for both THIs). Thus, the project emissions pose no significant noncarcinogenic health effects relative to the most stringent established significance criteria.

The estimated maximum cancer risk associated with operation of the Tesla Power Plant is 6.85 in one million at the point of maximum long term impact. This is also well below the significance criteria of 10 in one million established by both the Bay Area Air Quality Management District and the CEC. Therefore, the project poses no significant carcinogenic health risk relative to established significance criteria.

The federal and state ambient air quality standards (AAQS) set limits on the allowable level of air pollutants in the ambient air necessary to protect public health. The results of the modeling show that project emissions of all the criteria pollutants will not cause or contribute to new violations of the state and federal AAQS. Because the results indicate that the project will not significantly worsen air quality as measured by the AAQS, no significant adverse health effects are anticipated from criteria pollutant emissions.

Results of the criteria pollutant cumulative impacts analysis do not show any significant increases in ambient concentrations above the impacts from the project alone. Additional modeling was not conducted to evaluate cumulative public health impacts. Based on the results of the criteria pollutant cumulative impacts analysis, no increased health impacts are expected due to the sources included in the cumulative analysis.

I have reviewed the Staff Assessment and agree with Staff's conclusion that the project will not have a significant public health impact. I recommend one minor clarification to condition of certification **PUBLIC HEALTH-1** as outline below:

**PUBLIC HEALTH-1** The Project Owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is ~~kept to an absolute minimum~~ *abated*. The Plan shall include weekly monitoring of biocide and chemical biofilm prevention agents, periodic maintenance of the cooling water system to remove bio-film buildup, and testing to determine the concentrations of Legionella bacteria in the cooling water.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

**DOCKET NO. 01-AFC-21**

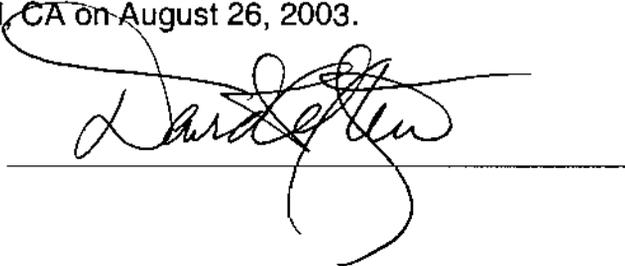
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DAVID A. STEIN, P.E.**

I, David Stein, declare as follows:

1. I am presently employed by URS Corporation, as Vice President, Environmental and Energy Services.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Public Health for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Oakland, CA on August 26, 2003.



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## AREAS OF EXPERTISE

- Power Plant Licensing
- Controversial Industrial Development
- Compliance/Due Diligence
- Expert Testimony

## EDUCATION

University of Texas: M.S.,  
Environmental Health  
Engineering, 1981

University of California:  
B.S., Environmental  
Engineering, 1977

University of California:  
B.S. Biological Sciences,  
1977

## REGISTRATIONS

Registered Professional  
Engineer, Chemical,  
California, CH004285,  
1984

## PROFESSIONAL HISTORY

URS, Senior Project  
Manager, 2000-Present

Radian, Senior Program  
Manager, 1996-2000

CARNOT, General  
Manager, 1992-1996

Ebasco Environmental,  
Manager, Environmental  
Services, 1990-1992,

Dames and Moore,  
Manager, Air Resources,  
1988-1990,

Energy Systems

## REPRESENTATIVE EXPERIENCE

Mr. Stein has 23 years experience managing, staffing, coordinating, and conducting multidisciplinary compliance/due diligence audits and environmental assessments for a wide range of industrial projects. He also has extensive experience in the permitting of major/controversial projects and a focus in the power, petroleum and chemical market sectors. Mr. Stein's technical expertise is in air quality matters including toxic and criteria pollutant emission quantification (both stationary and mobile sources), air pollution control technology evaluations, fugitive emissions studies, regulatory compliance audits and analyses, health risk assessments, air quality dispersion modeling, visibility impact modeling, emissions measurement, continuous emissions monitor and litigation support/expert witness testimony.

### Air Quality Permitting

- Managed the preparation of air permit applications (local and/or PSD review) for over twenty individual projects involving the installation of natural gas and oil-fired peak power plants, merchant power plants or cogeneration plants across California using gas turbine technologies (General Electric Frame 5, Frame 6, Frame 7EA, Frame 7FA, LM2500, LM5000, LM6000, Allison 501, Solar Mars, Solar Centaur, Pratt-Whitney JT4, and Siemens V84.2). These applications covered a number of control technologies including water injection, steam injection, selective catalytic reduction and oxidation catalysts. Recent projects include 320 MW Sunrise Cogeneration and Power Project, 500 MW Southern Energy Contra Costa Power Plant Unit 8 Project, 500 MW Southern Energy Potrero Power Plant Unit 7 Project, GWF 98.7 MW Hanford Energy Park Project, 160 MW SEPCO Project, and 160 MW Campbell Soup Cogeneration Project.
- Managed permitting of three 22-MW coal-fired circulating fluidized bed cogeneration plants in The San Joaquin Valley including oversight and technical input for of a number of critical tasks: CEQA compliance, air quality permitting, emission offset procurement, health risk assessment and solid waste disposal/recycling evaluations. Prepared the air quality and public health sections of the EIR. Prepared the air quality permit application, including emissions characterization, BACT analysis, dispersion modeling, regulatory compliance

coke-fired circulated fluidized bed cogeneration plant in San Joaquin Valley including local air permit application and PSD permit to EPA Region IX. Application included detailed emissions characterization, BACT analysis, and dispersion modeling. Prepared technical support for banking of emission reduction credits for existing boiler displaced by cogeneration plant. Prepared air quality and noise portions of documented initial study used by Lead Agency to issue a Negative Declaration.

- Provided strategic support and air quality permitting for the potential conversion of a 49-MW coal-fired power plant to petroleum coke. Support included agency liaison, technical review of air quality permit application and preparation of a comprehensive health risk assessment for several alternate fuels using the ISCST and ACE2588 programs.

#### Waste Incineration

- Performed air quality permitting, health risk assessment and AB2588 air toxics inventory for controversial hazardous waste incineration project at a dry process Portland cement plant in Kern County. Provided extensive coordination with Department of Health Services on health risk assessment methodology and results. Project included ground breaking emissions characterization studies including the design and implementation of a trace metals balance investigation for the cement kiln which served as the basis for a state-of-the-art health risk assessment. Served as principal liaison with CDHS and Kern County APCD. This facility is the only California facility permitted to generate liquid hazardous wastes which are generated offsite.
- Performed emissions characterization study and health risk assessment for open burning/open detonation of explosive hazardous waste generated by a West Coast manufacturer of energetic devices. INPUFF model was used in conjunction with proprietary spreadsheet-based risk assessment model developed for the project. HRA was submitted to both the Department of Health Services and Monterey Unified Air Quality Management District.
- Supported the air quality and conditional use permitting of tire-derived fuel (TDF) and mixed waste paper (MWP) as supplemental fuel options for a 10-MW woodwaste-fired power plant. Assisted in developing MWP supply and

fired boiler. Performed a detailed assessment of the expected flue gas characteristics of the boiler based upon multiple biomass feedstocks (orchard prunings, cotton stalks, Douglas fir, Lodgepole pine, and grapevine prunings). Prepared a comprehensive survey and budgetary request for SCR and solicited/compiled responses from several domestic and international SCR vendors. Report was used as a basis for air district finding that SCR was not demonstrated or technologically feasible for this category of source.

- Prepared an internal combustion engine inventory and NOx control plan for a petroleum refinery in Kern County. The control plan assessed efficiency and cost of a number of control options including: pre-stratified charge, retarded injection timing, derating, selective noncatalytic reduction and electrification. A sensitivity analysis for electrification was also performed based on changes in fuel and electricity costs. The refinery submitted a control plan to the air district based on the outcome of the study.

#### Environmental Impact Analysis

- Managed preparation of an Application for Certification (AFC) to the California Energy Commission (CEC) for a 320 MW cogeneration facility serving thermally enhanced oil recovery operations in Kern County, CA. Coordinated detailed studies in the areas of facility design, air quality, biological resources, cultural resources, land use, public health, noise, worker health & safety, socioeconomics, agriculture & soils, traffic & transportation, visual resources, hazardous materials management, waste management, water resources, geologic resources & hazards, and paleontologic resources.
- Managed preparation of an Application for Certification (AFC) to the California Energy Commission (CEC) for a controversial 12 million gallon/year ethanol facility and associated 150-MW combined cycle cogeneration facility. Prepared and directed toxic and criteria pollutant emissions inventory, dispersion modeling, health risk assessment, analysis of occupational safety from benzene exposure associated with ethanol denaturing, emission offset search/procurement, participation in several rule promulgation proceedings, numerous community outreach sessions, public workshops, evidentiary hearings and expert testimony. Prepared a comprehensive emission offset quantification protocol to address the displacement of a wide variety of agricultural residue open burning in

natural gas-fired cogeneration plant to be located in the Bay Area adjacent to a major chemical manufacturer. Major issues in the project were the potential release of ammonia from the SCR system and the availability of a water supply. Use of aqueous ammonia for the SCR system and implementation of process water recycling were identified as important mitigation measures to resolve these concerns.

- Prepared the air quality portion of a controversial EIR for a major coal transshipment facility to be located in Long Beach. The project included a detailed characterization of fugitive dust emissions from coal handling and storage, ship transport and hoteling emissions within continental waters and railroad emissions within the air basin. A number of controversial mitigation measures were conceived and investigated including: enclosed coal storage, enclosed railcars, electrification of rail transport, implementation of NOx controls on locomotives and cold-ironing (electrification) of ships during hoteling. Many of these measures were later adapted by the South Coast AQMD as long term control strategies in the basin's air quality management plan.

#### International Air Quality Regulation Development

- Managed the preparation of a comprehensive summary and critical analysis of the strengths and weaknesses of U.S. air quality regulations with special emphasis on emissions trading for potential implementation in Holland; coordinated and moderated intensive two week series of meetings with Dutch officials from Ministry of Environment and Ministry of Economic Affairs and industrial, environmental, and government agencies throughout the U.S.

#### Due Diligence and Compliance Auditing

- Completed an environmental due diligence review for acquisition by a major midwestern utility of four PG&E power plants proposed for divestiture. The due diligence effort included facility visits, collection of data from the central data room, detailed review and analysis of permits and regulations, and preparation of a report summarizing key environmental liabilities and operating constraints for the future. In addition to the written report, briefings were provided in progress.

master modernization/compliance options matrix for corporate cost-benefit analyses of various modernization/expansion schemes.

- Managed the compliance auditing of five Southern California corrugated container manufacturing facilities with respect to hazardous waste management and Proposition 65 regulations.

#### Regulatory Advocacy

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preliminary engineering design and bid specifications document for the installation of a regenerative thermal oxidizer, reviewed bids, participated in short-list presentations and recommended vendor.

- Conducted field assessment of VOC emissions from a dissolved air flotation unit and ancillary equipment in a Kern County petroleum refinery. Recommended an improvement in the design of the cover latch mechanism to enhance operator access to facilitate VOC and odor control.

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- Developed and implemented a proprietary spreadsheet HRA model to evaluate the potential impacts of increased hazardous waste incineration in a cement kiln. The model included inhalation, dermal absorption, soil ingestion, water ingestion, fish ingestion, crop ingestion, and mother's milk pathways and is still in use today as a primary compliance tool for the regulating air district.
- Prepared a HRA for a fiberglass manufacturing facility in the San Joaquin Valley for compliance with AB2588

areas of air quality and public health for a landmark California Environmental Quality Act (CEQA) law suit involving the adequacy of an EIR prepared for the siting of a power plant. The lawsuit was successfully settled. Served on the settlement negotiation team as well as providing strategic and technical support to the settlement process. Served as a initial liaison to the Environmental Oversight Committee created during the settlement process.

- Kings County Farm Bureau v. City of Hanford
  - Provided pretrial consultation, strategy support, depositions in Superior and Appellate Courts, expert witness testimony in Superior Court in the areas of air quality and public health for a landmark California Environmental Quality Act (CEQA) law suit involving the adequacy of an EIR prepared for the siting of a power plant. The lawsuit was successfully settled. Served on the settlement negotiation team as well as providing strategic and technical support to the settlement process. Served as a initial liaison to the Environmental Oversight Committee created during the settlement process.
  
- California Energy Commission (CEC) Power Plant Siting Cases
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**TOPIC: SOCIOECONOMICS**

**WITNESSES: DWIGHT MUDRY, SCOTT BUSA**

## SOCIOECONOMICS

I. Name: Dwight R. Mudry and Scott A. Busa

II. Purpose:

Our testimony addresses the Socioeconomics issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Dwight R. Mudry:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Socioeconomics section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Socioeconomics. A detailed description of my qualifications is contained in the attached resume.

**Scott Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Socioeconomics section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Socioeconomics. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 5.8, Table 6.1-1, Section 6.5.8
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. SOCIO-1 through SOCIO-4.

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant socioeconomic impacts and will comply with all applicable laws, ordinances, regulations and standards.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

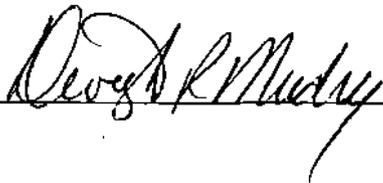
Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DWIGHT R. MUDRY**

I, Dwight R. Mudry, declare as follows:

1. I am presently employed by Tetra Tech FW, Inc., as a Consulting Scientist.
2. A copy of my professional qualifications and experience is included with the attached testimony in Appendix A, and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Socioeconomics for the Tesla Power Project (California Energy Commission Docket Number 01-AFC-21).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Santa Ana, CA on August 26, 2003.

  
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STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
SCOTT A. BUSA - Socioeconomics**

I, Scott A. Busa, declare as follows:

1. I am presently employed by FPL Energy, LLC, as a Project Director.
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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 Juno Beach, FL on August 26, 2003.

  
\_\_\_\_\_

## Appendix A

### Resume of Dwight R. Mudry, Ph.D.

Tetra Tech FW, Inc. - Consulting Scientist

#### EXPERIENCE SUMMARY

Dr. Mudry has 30 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects. Dr. Mudry is responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; cogeneration facilities; and, road, pipeline, and transmission lines. He provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. His project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Dr. Mudry's experience includes projects in Canada, Nepal, Korea, and Pakistan, as well as California and other parts of the US.

#### EDUCATION

Ph.D., Biology, University of Calgary, 1972

M.A., Biology, California State University at Long Beach, 1969

B.S., Zoology, California State University at Long Beach, 1967

#### REPRESENTATIVE PROJECT EXPERIENCE

***Occidental Energy Ventures Corp., and Sempra Energy Resources - Elk Hills Power Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA.

***ARK Energy, Ethanol Plant and Cogeneration Plant Permitting*** - Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA.

***Carson Energy, Cogeneration Facility Permit Application*** - Responsible for preparation of a project description for a proposed 98 MW cogeneration facility and associated ice manufacturing plant near Sacramento, CA.

***California Energy Commission, Power Plant Siting and EIRs*** - Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program.

***Modesto Irrigation District, Power Plant EIR*** - Responsible for preparation of an Initial Study, Draft and Final Environmental Impact Report (EIR), Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA.

***Northern California Power Agency, Environmental Assessments for Five Power Plants*** - Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California.

***Corn Products Corporation, Coal Fired Cogeneration Project EIR*** - Managed and prepared an EIR for a 49.5 MW coal fired recirculating fluidized bed cogeneration facility at an existing plant in Stockton, California.

***Los Angeles Harbor Department, Environmental Impact Report*** - Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles.

***Rio Linda Water District, Initial Study and Negative Declaration*** - Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District.

***Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan*** - Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan.

***Government of Nepal, Hydroelectric Project Environmental Assessment*** - Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal.

#### **Miscellaneous Projects**

Responsible for management of staff involved in the following projects: Potrero Canyon Environmental Impact Report (EIR); Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

## Appendix A

### Resume of Scott A. Busa FPL Energy, Project Director

#### EXPERIENCE SUMMARY

Mr. Busa has over 16 years of experience in the power generation industry. He has held positions of increasing responsibility in the areas environmental compliance, permitting, air quality, operations, due diligence, auditing, and project development of power generating facilities of a variety of technologies, including oil and gas fired, nuclear, coal, and wind plants. Mr. Busa has been employed by FPL Group for over fourteen years in a variety of environmental and project development positions dealing with both regulated and merchant energy facilities. This has included due diligence of potential acquisitions and greenfield siting of new generation opportunities. Currently as a Project Director in the Business Development group at FPL Energy, Mr. Busa is responsible for greenfield development, evaluation of existing assets for expansion opportunities, and reviewing potential mergers and acquisitions in the western US. He has been involved in expansion efforts for over 10,000 MW of power generation, including fossil and renewable power, as part of FPL Energy and Florida Power & Light's growth plans. He has significant experience and background in the areas of air quality monitoring and environmental compliance.

#### EDUCATION

1982 - 1987

Biology, The Pennsylvania State University

125 credits towards Bachelor of Science with emphasis in ecological research.

#### REPRESENTATIVE PROJECT EXPERIENCE

##### **FPL Energy - Project Director (2001 - Present)**

***Tesla Power Project*** – Management of the development team for the site selection, preparation of an Application for Certification, and licensing process for the proposed 1120 MW power plant in eastern Alameda County before the California Energy Commission.

***Altamont Pass Wind Generation Optimization Projects*** – Management of the development team responsible for the review of 400 MWs of wind generation in the Altamont Pass. Three projects, consisting of 65 MW of wind turbines, were identified for repowering. The projects are currently undergoing county permitting and should be online in 2004.

**Florida Power & Light – Manager, Environmental Auditing and Due Diligence (1999 - 2001)**

***Rio Linda / Elverta Power Project*** – Lead Environmental Manager for the development and subsequent preparation of an Application for Certification for submission to the California Energy Commission for a proposed 560 MW power plant near Sacramento.

***Blythe Power Project*** - Lead environmental due diligence role for the acquisition of a 500 MW power plant near Blythe, CA.

***Mergers and Acquisition Due Diligence*** – Lead a team of Environmental Specialists to provide technical environmental support necessary for FPL and FPLE due diligence projects involving over 10,000 MW of fossil fuel, hydroelectric, wind, solar, and geothermal power generation acquisition and repowering. Manage environmental resources necessary to provide analysis, conclusions, recommendations, and reports required to assess the environmental risks associated with asset acquisition. Ensure smooth transition of assets to appropriate transition, licensing & permitting, construction, or operations team.

***Environmental Auditing*** – Direct corporate Environmental audit program for utility power generation, distribution, transmission, and vendor/suppliers to identify and rectify environmental risks in a cost effective and efficient manner. Responsibilities covered 16,000 MW of utility plants and 4000 MW of merchant generation facilities.

**Florida Power & Light – Senior Environmental Specialist (1995 - 1999)**

***Clean Air Act*** – Developed and maintained a compliance program for the Clean Air Act Title IV regulations requiring continuous emissions monitoring at 35 fossil fired power plants.

**Florida Power & Light – Emission Crew Supervisor (1989 – 1995)**

Responsibilities included testing and reporting of particulate, NOx, SO2, CO2, CO, VOC's, and opacity emissions at 33 oil and gas fired power plants. As a self-directed work group, the test crew was responsible for budgeting, procuring, and building their own test equipment along with performing maintenance and quality assurance activities. Scheduling and communication with plant management, unit dispatch personnel, state inspectors, and outside vendors was critical in successfully completing several hundred tests per year.

**TOPIC: LAND USE**

**WITNESSES: DWIGHT MUDRY, SCOTT BUSA**

## LAND USE

I. Name: Dwight R. Mudry and Scott A. Busa

II. Purpose:

Our testimony addresses the Land Use issues associated with the construction and operation of the Tesla Power Project

III. Qualifications:

**Dwight R. Mudry:** I have worked for Tetra Tech FW, Inc. (Formerly Foster Wheeler Environmental Corporation) for the past 20 years and am presently a Consulting Scientist with that organization. I have a Ph.D. Degree in Biology and I have 30 years of experience in all phases of environmental impact assessment, including siting studies, permit compliance, mitigation and monitoring, agency coordination, impact assessment, and construction compliance. I have provided testimony before the California Energy Commission (CEC) on three previous cases: Crockett Cogeneration Project (on behalf of CEC Staff); Sacramento Ethanol and Power Project (on behalf of an applicant); and Elk Hills Power Project (on behalf of an applicant).

I supervised the preparation of the Land Use section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Land Use. A detailed description of my qualifications is contained in the attached resume.

**Scott A. Busa:** I have been employed by FPL Group for over fourteen years. During the last two years I have worked for FPL Energy (an FPL Group subsidiary) as a Project Director managing the development of new power plant projects. I have over 16 years of experience in the power generation industry including the areas of environmental compliance, permitting, technical service, operations, due diligence, auditing, and project development. I have been involved with the development of the Tesla project from its initial conception, application preparation, and through the entire CEC process to date.

I prepared portions of the Land Use section of the AFC as well as the post-filing information for data adequacy responses, data responses, and supplemental filings associated with Land Use. A detailed description of my qualifications is contained in the attached resume.

IV. Exhibits

In addition to this written testimony, we are sponsoring the following documents submitted in this proceeding (California Energy Commission 01-AFC-21):

- Exhibit 1, AFC Section 5.7, bTable 6.1-1, Section 6.5.7 and Appendix N
- Exhibit 2, Responses to CEC Data Adequacy Request Nos. LU-1 through LU-9, and PO-1
- Exhibit 3, Responses to First Set of CEC Data Requests, Response Numbers 94 through 105.
- Exhibit 16, Request for Partial Cancellation of the Williamson Act Contract, dated July 30, 2002
- Exhibit 17, Alameda County Staff Report Concerning Partial Cancellation of the Williamson Act, dated January 2, 2003
- Exhibit 18, Letter from Department of Conservation Concerning Partial Cancellation of the Williamson Act, dated January 24, 2003
- Exhibit 19, Alameda County Staff Report dated January 31, 2003
- Exhibit 20, Alameda County Staff Report dated March 18, 2003
- Exhibit 21, Alameda County Board Resolution Number R-2003-322 Granting the Tentative Partial Cancellation of Williamson Act, dated February 6, 2003

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

V. Opinion and Conclusions

We have reviewed the Final Staff Assessment and we agree with the Conditions of Certification and concur with the conclusion that the Tesla Power Project will not result in significant land use impacts and will comply with all applicable laws, ordinances, regulations and standards.

In addition, the Alameda County Board of Supervisors have granted a tentative cancellation of the Williamson Act Contract on February 6, 2003. In that cancellation resolution, the Board made the finding that the project was consistent with the Alameda County East County Area Plan, which contains "Measure D". Therefore, the highest level of the local land use agency with jurisdiction to determine land use consistency has found the TPP to be consistent with Measure D.

STATE OF CALIFORNIA

Energy Resources  
Conservation and Development Commission

In the Matter of:

DOCKET NO. 01-AFC-21

Application for Certification for the  
Tesla Power Project

**DECLARATION OF  
DWIGHT R. MUDRY – Land Use**

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## Appendix A

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## **Appendix A**

### **Resume of Scott A. Busa** FPL Energy, Project Director

#### **EXPERIENCE SUMMARY**

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