

DOCKETED

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Project Title:	Great Oaks South Backup Generating Facility Small Power Plant Exemption
TN #:	239258
Document Title:	Staff's Opening Testimony
Description:	For the Great Oaks South Backup Generating Facility project
Filer:	Lisa Worrall
Organization:	California Energy Commission
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M e m o r a n d u m

To: Commissioner Karen Douglas, Presiding Member
Chair David Hochschild, Associate Member

Date: August 11, 2021

From: California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Lisa Worrall
Senior Environmental Planner
(916) 661-8367

Subject: STAFF'S OPENING TESTIMONY WITH DECLARATIONS AND RESUMES FOR THE GREAT OAKS SOUTH BACKUP GENERATING FACILITY SMALL POWER PLANT EXEMPTION PROCEEDING (20-SPPE-01)

In accordance with the *Notice of Prehearing Conference, Evidentiary Hearing, Scheduling Order, and Further Orders* filed on June 24, 2021 (TN 238471), California Energy Commission staff hereby submits its Opening Testimony. Staff's testimony consists of the Final Environmental Impact Report, which was previously docketed (TN 239063) and staff's declarations and resumes supporting this testimony (attached). The City of San Jose is reviewing staff's proposed Mitigation Monitoring and Reporting Program (MMRP) for the project to ensure it meets the City's needs. The agreed upon proposed MMRP will be submitted to the project's docket by August 25, 2021.

**DECLARATION OF
Abdel-Karim Abulaban**

I, Abdel-Karim Abulaban, declare as follows:

1. I am employed by the California Energy Commission as an Associate Civil Engineer.
 2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
 3. I prepared the staff testimony on **Hydrology and Water Quality and Utilities and Service Systems** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
 4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
 5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.
- I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7-29-2021

Signed: 

At: Sacramento, California

AbdelKarim Abulaban

Education

Ph.D. Civil Engineering, University of Minnesota (*Hydrology and Water Resources*).

Thesis title: Modeling the transport of sorbing chemicals in heterogeneous porous media.

B.S. and M.S. Civil Engineering, Yarmouk University, Jordan (*Water Resources*).

Registration:

Registered Professional Engineer (Civil) with the state of California (Lic. No. 76030)

Employment

June 2010-Present: Associate Civil Engineer

CA Energy Commission, Sacramento, CA.

Reviewing and evaluating the construction, operation, and maintenance of energy facilities and power plants for water supply, wastewater quality and disposal, and stormwater management to assess the potential impacts to human health and the environment. Also, reviewing sensitive project sites that may have issues involving flooding and stormwater management, discharges to impaired water bodies, depleted groundwater and surface water resources, and wastewater management and disposal methods, in addition to responding to soils or water resources issues that may arise regarding power plant operations. This work includes conducting investigations to determine if any violations of the program's regulations, the Energy Commission's conditions of certification, or the CA Environmental Quality Act (CEQA) have taken place.

Dec. 2006-May 2010: Water Resources Engineer

CA Dept. of Water Resources, Fresno, CA.

In charge of hydraulic modeling and sediment transport for the San Joaquin River restoration project. Perform 1- and 2-D hydraulic analysis to support restoration of the San Joaquin River for the purpose of improving spawning/rearing habitat, enhancing floodplain connectivity, and improving riparian corridor.

Dec. 2001-Dec. 2006: Retained Hydrologist

J.L. Nieber & Associates, Hydrologic Consultants, Lindstrom, Minnesota, USA.

Hydrologic analysis and assessment of environmental impact of contamination incidents on ground water resources, as well as design of remediation plans. Contaminants analyzed included hydrocarbons, chlorinated solvents, as well as agricultural chemicals.

Dec. 90 – Dec. 93: Retained Hydrologist.

BAUMGARTNER ENVIRONICS, INC, Olivia, Minnesota, USA.

Assessment of the environmental impact of contamination incidents on groundwater resources, and design of action plans.

Sep. 2003-Sep. 2005:

Assistant Professor, Hashemite University, Zarqa, Jordan.

Taught general and specialized courses in the civil engineering department: Water and Wastewater Treatment Methods; Wastewater Engineering; Statics; Engineering Drawing; Visual Communication. rs

June – August, 96, 97, 98, 2000:

Army High Performance Computing Research Center, Minneapolis, Minnesota.

Taught and helped teach the Summer Institute course in hydrology and transport in porous media. The Summer Institute is a summer course offered to promising upper class students from member institutions. The ground water flow and transport group normally has about 4 students from different backgrounds. I was involved in training the students to use a particle tracking solute transport code which I developed, and also to use the DoD's Ground Water Modeling System, GMS; however, in the summer of 2000 I was in charge of the whole group consisting of four students.

August, 1997:

University of Minnesota, Minneapolis, Minnesota, USA.

Taught a short course on the application of the Department of Defense's Ground Water Modeling System, GMS, offered by the American Society of Agricultural Engineers and attended by about 40

professionals and academicians from around the United States as well as several countries around the world.

Research

i- Ground Water Flow and Transport:

Oct. 93-Mar. 2002: Research Associate

Biosystems and Agricultural Engineering Department, University of Minnesota, USA.

Modeling single and multi-phase flow and multicomponent transport in variably saturated heterogeneous porous media with chemical transformation such as adsorption and biodegradation. A computer model based on the Random Walk Particle Tracking technique was successfully developed and applied for this purpose. Because of the large memory and CPU time requirements, the model was developed and implemented using on a **supercomputer platform** through several grants from the Minnesota Supercomputer Center. This work was continued in a joint effort between the Biosystems and Agricultural Engineering Department and the Army High Performance Computing Research Center through a grant from the US Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

I also was involved in the modeling of flow and transport through preferential flow paths caused by unstable wetting fronts. Sample results for a simple scenario can be found on the World Wide Web by visiting <http://www.arc.umn.edu/education/SummerInst/1996/>

ii- Surface Water Hydrology:

Oct. 93- Jun. 95: Post-Doctorate Associate

Department of Biosystems and Agricultural Engineering, University of Minnesota, Saint Paul, Minnesota, USA.

Analysis of the impact of and best management practices of surface tile inlets on the water quality in the Minnesota River basin.

Sep. 84 - Jun. 87: Research Assistant

Civil Engineering Dept., Yarmouk University, Irbid, Jordan.

Development of Intensity-Duration-Frequency (IDF) Curves for design rain storms in Irbid Region. This research was supported by a grant from Yarmouk University.

Sample Publications

Hamasha, S.; Abu Allaban, M; **Abulaban A.** (2008). Modeling Atmospheric Turbidity at Zarqa Area Using Meteorological Data. JJP, 1:(1), 53-60.

Munjed Al-Sharif, J. Abu Ashour, **A. Abulaban**, and S. Al-Shar'a, (2007), Effect of Soil-Water Separation Technique on the Estimation of Bacterial Adsorption onto Soil, Jordan Journal of Civil Engineering, Vol.(1), No. 2. pp. 295-302.

Peters, J.F., Howington, S.E., Maier, R.S., **Abulaban, A.**, and Nieber, J.L (2002). *Imbedding velocity autocorrelation into simulators for constituent transport through porous media*. Computational Methods in Water Resources: Proceedings of the Xivth International Conference on Computational Methods in Water Resource Proceedings, Delft, The Netherlands, pp.405-412.

Abulaban, A. and J.L. Nieber (2000). *Modeling plume behavior of non-linearly sorbing solutes in saturated heterogeneous porous media*. *Advances in Water Resources*, **23**, pp. 893-905.

Abulaban, A., J.L. Nieber, and D. Misra (1998). *Modeling plume behavior of non-linearly sorbing solutes in saturated homogeneous porous media*. *Advances in Water Resources*, **21** (6) pp. 487-498.

Nguyen, H.V., J.L. Nieber, and **A. Abulaban** (1998). *An improved method to model gravity-driven unstable flow in porous media*. International Workshop 'Soil Water Repellency: Origins, Assessment, Occurrence, Consequences, Modeling, and Amelioration', Wageningen, The Netherlands, September 2-4, 1998.

**DECLARATION OF
Ryan T. Casebeer**

I, Ryan T. Casebeer, declare as follows:

1. I am employed by the California Energy Commission as a Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Hazards and Hazardous Materials** for the **GREAT OAKS SOUTH BACKUP GENERATOR FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: Ryan Casebeer Signed: 08/03/2021

At: Sacramento, California

RYAN T. CASEBEER

Roseville, CA 95661 | 916.743.6144 | rcasebeer@gmail.com

SUMMARY

Mechanical Engineer poised to implement skills and expertise honed through years of engineering background. Accomplished professional with powerful problem-solving, analytical and communication skills and proven capability to multitask within fiercely competitive and fast-paced environments, completing projects on time without compromising quality.

SKILLS

- Knowledgeable in Mechanical Design Systems
- Written and verbal communication skills
- Mechanical Design plan reviews
- Field Inspections and surveys
- Mentoring and training
- Prepare mechanical design drawings and specifications
- Prepare conclusions and analysis reports
- Advanced in Microsoft Office

EXPERIENCE

08/2019 to Current **California Energy Commission** – Sacramento, CA

The Commission ensures that energy facilities (power plants) are permitted in an acceptable manner. The STEP division prepares environmental documentation for the Commission as required by the California Environmental Quality Act (CEQA).

Mechanical Engineer

- Provide independent engineering analysis for various technical areas with an emphasis on hazardous materials management, worker safety, & fire protection.
- Review, analyze and prepare engineering analysis for hazardous materials management, fire protection, and worker safety for gas-fired power plants.
- Provide written and oral expert witness testimony at commission hearings.
- Conduct power plant inspections during construction and operational phases.
- Investigate accidents, fire, and hazardous materials incidents at licensed power plants

01/2007 to 08/2019 **Capital Engineering Consultants, Inc** – Rancho Cordova, CA

A leader in mechanical engineering design in Northern California since 1947 specializing in areas including K-12 Education, Higher Education, Civic and Justice, and Healthcare.

Project Manager, Associate

- Manage the design, project specification, calculations and cost estimations for new and renovated construction projects. Oversee and supervise the daily workload, mentoring, and quality control for an assigned junior engineer.
- Manage the design, project specification, calculations and cost estimations for new and renovated construction projects.
- Plan and monitor the workload of projects, while preparing and taking responsibility for the concept of and preliminary engineering solutions for the detailed design-phase.
- Implement the detailed design engineering of HVAC systems, code review, heating and cooling load
- calculations, air-flow requirements, ductwork sizing and layout, piping sizing and layout, equipment selection

EDUCATION AND TRAINING

06/2006 **Bachelor of Science: Mechanical Engineering (Summa cum laude graduate)**
California State University Sacramento – Sacramento, CA

02/2017 **Licensed Professional Engineer: Mechanical Engineer, M 38407**
State of California

**DECLARATION OF
Brett Fooks**

I, Brett Fooks, declare as follows:

1. I am employed by the California Energy Commission as a Senior Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Hazards and Hazardous Materials** for the **GREAT OAKS SOUTH BACKUP GENERATOR FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 08/03/2021 Signed: *Brett Fooks*

At: Sacramento, California

BRETT FOOKS, P.E.

MECHANICAL ENGINEER

PROFESSIONAL EXPERIENCE

California Energy Commission - STEP **Sacramento, CA** **2/2014 - Present**
The Commission ensures that energy facilities (power plants) are permitted in an acceptable manner. The STEP division prepares environmental documentation for the Commission as required by the California Environmental Quality Act (CEQA).

SENIOR MECHANICAL ENGINEER

Provide independent engineering analysis for various technical areas with an emphasis on hazardous materials management, worker safety, & fire protection.

- Review, analyze and prepare engineering analysis for hazardous materials management, fire protection, and worker safety for gas-fired power plants.
- Provide written and oral expert witness testimony at commission hearings.
- Conduct power plant inspections during construction and operational phases.
- Investigate accident, fire, and hazardous materials incidents at licensed power plants.

Capital Engineering Consultants, Inc. **Rancho Cordova, CA** **6/2004 – 2/2014**
A leader in mechanical engineering design in Northern California since 1947 specializing in areas including K-12 Education, Higher Education, Civic and Justice, and Healthcare.

SENIOR ENGINEER, ASSOCIATE

Manage the design, project specification, calculations and cost estimations for new and renovated construction projects. Oversee and supervise the daily workload, mentoring, and quality control for an assigned junior engineer.

- Plan and monitor the workload of projects, while preparing and taking responsibility for the concept of and preliminary engineering solutions for the detailed design phase.
- Implement the detailed design engineering of HVAC systems; code review, heating and cooling load calculations, air-flow requirements, ductwork sizing and layout, piping sizing and layout, equipment selection, and system controls with an emphasis on healthcare facilities.
- Prepare and deliver calculations for Title 24 building compliance.
- Prepare and deliver calculations and documents for project LEED certification.

Select Accomplishments

- Assisted in the implementation and teaching of new 3-D modeling software, CAD-MECH, to team members for the Sutter Health Eden Medical Center.
- Worked with co-workers to create and implement standards for plumbing calculations firm wide leading to an increased efficiency.

EDUCATION

STATE OF CALIFORNIA ~ LICENSED PROFESSIONAL ENGINEER
UC DAVIS EXTENSION – WORKPLACE HEALTH & SAFETY CERTIFICATE (2016)

BACHELOR OF SCIENCE ~ MECHANICAL ENGINEERING (2004)
California Polytechnic State University, San Luis Obispo

Computer Literacy: Proficient in the use of various software applications including Microsoft Office (Word, Excel, PowerPoint, Outlook) AutoCAD 2012/2013, Revit 2013/2014, Visio, NavisWorks, and ProjectWise.

**DECLARATION OF
Ashley Gutierrez**

I, Ashley Gutierrez, declare as follows:

1. I am employed by the California Energy Commission as a Planner II (EFS).
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Transportation and Alternatives** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/3/2021

Signed: *Ashley Gutierrez*

At: Sacramento, California



ASHLEY GUTIERREZ

Education & Certifications

- Bachelor of Arts, Geography with a concentration in Natural Resource Management, San Francisco State University (2013)
- Land Use and Environmental Planning Certification, UC Davis Extension (2019)

Experience

California Energy Commission - 2015 to present

Environmental Planner II, Energy Facility Siting

As part of the Siting, Transmission, and Environmental Protection Division, Mrs. Gutierrez serves as a technical lead for the preparation of environmental impact analysis in the areas of transportation, land use, visual resources and socioeconomics (recreation, population/housing, public services) for Notices of Intention, Applications for Certification, and Small Power Plant Exemptions as required by California Environmental Quality Act (CEQA) for thermal electric generating facilities (50 MWs and greater) and related linear facilities (electric transmission lines, natural gas and water pipelines). Mrs. Gutierrez also evaluates energy facility compliance with conditions of certification throughout the life (construction, operation, and decommissioning) of the project. She examines and evaluates amendments and project changes in accordance with the Warren-Alquist Act, CEQA, existing and proposed laws, ordinances, regulations, and standards (LORS). As well as participates in public workshops and provides testimony at hearings regarding project proposals. When necessary she will perform site visits. Mrs. Gutierrez has also prepared a variety of CEQA Categorical exemptions for the Research and Development Division under the Food Production Investment Program (FPIP) and the EPIC Long Duration and Title 24 Storage program.

Projects

- **Great Oaks South Data Center Project - San Jose, Santa Clara County, CA.** Prepared the Transportation section and assisted with the preparation of the Alternatives section.
- **Mission College Data Center – Santa Clara, Santa Clara County, CA.** Prepared the cumulative impact analysis, Public Services, Population and Housing, and Recreation environmental analysis sections.
- **Vierra Transmission Line Reinforcement Project - Lathrop, San Joaquin County, CA.** Prepared the Public Services, Population and Housing and Recreation sections and cumulative section.
- **Ravenswood Reconductoring Project, East Palo Alto, San Mateo County, CA.** Prepared the Transportation, and cumulative impact analysis.
- **SEGS III-VII Facility Decommissioning – Boron, San Bernardino County, CA.** Prepared the Transportation analysis for the Decommissioning Plan Staff Assessment.
- **Stanton Energy Reliability Center- Stanton, Orange County, CA.** Prepared the cumulative analysis and assisted with the preparation of the Transportation section.
- **Puente Power Project - Oxnard, Ventura County, CA.** Prepared the Land Use and cumulative analysis.
- **Mission Rock Energy Center- Santa Paula, Ventura County, CA.** Prepared the cumulative analysis.
- **Chemehuevi Community Center Solar Grant Proposal, County, CA.** Assisted in grant review.

**DECLARATION OF
Mark R. Hamblin**

I, Mark R. Hamblin declare as follows:

I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection (STEP) Division, Environmental Protection Office as a Planner II.

A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

I prepared the staff testimony on Aesthetics for the Great Oaks South Backup Generating Facility based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.

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

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 29, 2021 Signed: Mark R. Hamblin

At: Sacramento, California



MARK R. HAMBLIN
PLANNER II

Education

Master of Public Administration. California State University Bakersfield. Bakersfield, California. August 1988.

Bachelor of Science Public Administration. California State University Sacramento. Sacramento, California. May 1984.

Experience

California Energy Commission

Planner II

November 2000 to present

I identify, describe, and analyze complex land use and planning, and/or aesthetics related issues regarding the siting of a thermal power plant and transmission facilities reviewing applicable federal, state, local laws, ordinances, regulations and standards (California Environmental Quality Act [CEQA] and Guidelines, California Planning, Zoning and Development Laws, county/city general plan and zoning, etc.), and the California Energy Commission siting regulations in a written analysis and/or testimony; participate in public workshops, present sworn testimony during evidentiary hearing(s) before Commissioners, when requested.

Yolo County Planning and Public Works Department

Associate Planner

June 1992 to October 2000

I advised and assisted individuals in the processing of land use and planning proposals (general plan amendments, conditional use permits, subdivision maps, etc.). I reviewed the proposal for consistency and compliance with state environmental, planning and zoning law (CEQA Guidelines, Subdivision Map Act, Williamson Act Program, etc.), the county General Plan and the county government code for presentation in a staff report before the planning commission and/or board of supervisors. I served as a county representative/liaison to citizens' and interagency committees (county airport advisory committee, county habitat conservation plan steering committee, and community general plan citizen advisory committee[s], etc.). I drafted zoning ordinances. I hired and supervised consultants. I performed contract management in the preparation of land use and environmental assessment documents (e.g., general plan amendment, environmental impact report). I served as a county zoning administrator deciding on minor land use proposals. I conducted zone code enforcement with cooperation from the district attorney's office. I reviewed building plans for compliance with county codes and issuance of the permit. I answered questions from individuals who visited the public counter and over the telephone regarding land use and development in the county.

**DECLARATION OF
Mark Hesters**

I, Mark Hesters, declare as follows:

1. I am employed by the California Energy Commission as a Senior Electrical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I oversaw preparation of staff testimony on **Electrical Power Delivery in Project Description and Pacific Gas and Electric Company Santa Teresa Substation Details in Appendix B** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 3, 2021 Signed: Mark Hesters

At: Sacramento, California

Mark Hesters

916-931-8942

mark.hesters@energy.ca.gov

Qualifications

- § Analyzed the reliability impacts of electric power plants for twenty-three years.
- § As an expert witness, produced written and oral testimony in numerous California Energy Commission proceedings on power plant licensing.
- § Expertise in power flow models (GE PSLF and PowerWorld). Microsoft word-processing, spreadsheet and database programs.
- § Contributing author to many California Energy Commission reports.
- § Represented the Energy Commission in the development of electric reliability and planning standards for California.

Experience

Senior Electrical Engineer

2005-Present California Energy Commission, Sacramento, CA

- § Program manager of the transmission system engineering analysis for new generator Applications of Certification.
- § Lead the development of transmission data collection regulations.
- § Overhauled the transmission data adequacy regulations for the Energy Commission's power plant certification process.
- § Participated in the analysis of regional transmission projects.
- § Technical lead for Commission in regional planning groups.

Associate Electrical Engineer

1998–2005 California Energy Commission, Sacramento, CA

- § Lead transmission systems analyst for power plant licensing under 12-month, 6-month and 21-day licensing processes.
- § Provided expert witness testimony on the potential transmission impacts of new power plants in California Energy Commission licensing hearings.
- § Authored chapters for California Energy Commission staff reports on regional transmission issues.
- § Studied the economics of transmission projects using electricity production simulation tools.
- § Analyzed transmission systems using the GE PSLF and PowerWorld load flow models.
- § Collected and evaluated transmission data for California and the Western United States

Electric Generation Systems Specialist

1990–1998 California Energy Commission, Sacramento, CA

- § Lead generation planner for southern California utilities.
- § Analyzed electric generation systems using complex simulation tools.
- § Provided analysis on the impact of resource plans on air quality and electricity costs for California Energy Commission reports.
- § Developed modeling characteristics for emerging technologies.
- § Evaluated resource plans.

Education

1985–1989 University of California at Davis Davis, CA

- § B.S., Environmental Policy Analysis and Planning

**DECLARATION OF
Joseph Hughes, P.E.**

I, Joseph Hughes, declare as follows:

1. I am employed by the California Energy Commission as an Air Resources Supervisor in the Siting, Transmission and Environmental Protection Division.
2. A copy of my professional qualifications and experience was previously submitted in this proceeding and is incorporated by reference herein.
3. I oversaw preparation of staff testimony analyzing the Great Oaks South Generating Facility presented in the technical areas of **Air Quality (including Public Health), Greenhouse Gas Emissions, and Emergency Operation in Appendix B, and Appendix C** of the Final Environmental Impact Report (EIR/FEIR).
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 11, 2021 Signed: /s/ Joseph Hughes

At: Sacramento, California

Education

California State University, Sacramento, 2003-2008

Sacramento, Ca

Bachelor of Science, Mechanical Engineering Technology, May 2008

Licensures

Professional Engineer, Mechanical (California License No. M 38221)

Experience

California Energy Commission, 2020-Present

Sacramento, Ca

Air Resources Supervisor I

Air Resources Supervisor in the Engineering Office of the Siting, Transmission, and Environment Protection Division, responsible for the Air Quality, Public Health and Transmission Line Safety and Nuisance unit. The Air Resources Supervisor is the first level to which administrative responsibilities are assigned. Staff in the unit are responsible for reviewing and understanding United States Environmental Protection Agency, California Air Resources Board, and regional air quality district public health and air quality regulations. Specific responsibilities include the following:

- Planning, directing, evaluating, and managing the work of air resources engineers and public health experts.
- Reviewing staff conducted scientific investigations and complex technical analysis, including air quality and public health impacts of stationary sources and methods to mitigate these impacts following California Environmental Quality Act and federal, state, and local regulations.
- Reviewing staff conducted analysis of transmission line and safety, nuisances and impacts on public health.
- Research new technology development; recommend and implement statewide planning and policy initiatives for the Energy Commission, as well as developing and evaluating proposed legislation.

California Department of Transportation, 2018-2020

Sacramento, Ca

Mechanical Engineer

Mechanical engineer in the Office of Electrical, Mechanical, Water & Wastewater responsible for performing difficult mechanical engineering design, specification preparation, estimating, and inspection work involved in the design, construction, and maintenance of storm drainage pumping plants and sewage lift stations, vehicular tunnels, movable bridges, roadside

rests, highway maintenance stations, toll plazas, truck weigh and inspection stations water well and water supply systems, solar heating, and other transportation-related facilities. Specific responsibilities include the following:

- Performing professional work such as designing and preparing plans, specifications and estimates for mechanical systems such as heating, ventilating, air conditioning, plumbing, water, sanitary, and mechanical equipment.
- Checking drawings and contractor's shop plans and lists of equipment.
- Testing completed work for compliance with contract documents and conducting construction and repair inspections.
- Assisting in maintenance inspections of pumping plants, water supply systems, movable bridges, safety roadside rest areas, truck weigh and inspection stations.

California Energy Commission, 2009-2018
Sacramento, Ca

Air Resources Engineer

Technical expert responsible for completing engineering and environmental analysis on thermal power plant project applications seeking a California Energy Commission license, or an amendment or project modification to an existing license, in addition to determining ongoing operational compliance for facilities operating under existing Energy Commission licenses. Specific responsibilities include the following:

- Independently perform responsible, varied analysis assessing environmental impacts of energy resource use and large electric power generation projects in California.
- Analyzing project applications to verify engineering data, conducting scientific investigations and completing complex technical analysis.
- Identifying air quality impacts of stationary sources through the use of complex dispersion modeling and measures to mitigate these impacts following California Environmental Quality Act (CEQA) and regulations of U.S. Environmental Protection Agency, California Air Resources Board, and local air pollution control districts.
- Managing ongoing engineering and environmental compliance for operational power plant facilities and recommending enforcement actions for violations.
- Researching new technologies and developing, recommending, and implementing statewide planning and policy initiatives for the Energy Commission and the Governor.
- Presenting complex technical staff reports and planning/policy recommendations at evidentiary hearings, business meetings,

committee meetings, publicly-noticed workshops, and meetings with project developers.

- Testifying as an expert witness at committee held evidentiary hearings.

Awards

2014 Superior Accomplishment Award – California Energy Commission

**DECLARATION OF
Tao Jiang**

I, Tao Jiang, declare as follows:

1. I am employed by the California Energy Commission as an Air Resources Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Greenhouse Gas Emissions** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 07/29/2021

Signed: 

At: Sacramento, California

Tao Jiang, Ph.D., P.E.

Professional Experience

Air Resources Engineer

(Jan. 2009 – Present)

California Energy Commission, Siting Transmission and Environmental Protection Division

Act as air quality technical lead on power plant siting projects and related linear facilities, including Abengoa Mojave Solar, Ridgecrest Solar Millennium, Almond 2 Power Plant, Pio Pico Energy Center, Huntington Beach Energy Project, Sonoran Energy Project, Pomona Repower Project and Stanton Reliability Energy Center. Also be responsible for compliance work of 26 power plants in construction and operation. Specific responsibilities include the following:

- Analyze the impacts of the construction and operation of large power generation projects and related linear facilities on air quality, Green House Gas and climate change
- Determine the conformance to applicable U.S. EPA, CARB and local air district regulations and standards
- Investigate and recommend appropriate emission mitigation measures
- Prepare air quality staff assessments and technical testimony
- Develop and monitor air quality compliance plans
- Review and evaluate U.S. EPA, CARB, and local air district air quality rules and regulations
- Collect, analyze and evaluate data for the effects of air pollutants and power plant emissions on human health, vegetation, wildlife, water resources and the environment
- Develop, recommend, and implement statewide planning and policy initiatives for the Energy Commission and Governor

Research assistant

(Sep. 2004 – Dec. 2008)

University of California, Riverside, Chemical & Environmental Engineering

- Investigated phase behavior of colloidal particles
- Study mediated colloidal interactions in the particle dispersions
- Build and evaluate models for gas molecules and particulate matters
- Conduct computer simulation and modeling for gas molecules and particulate matters

Education

PhD Chemical & Environmental Engineering, University of California, Riverside (August, 2008)
ME Materials Science and Engineering, Beijing University of Chemical Technology (June, 2003)
BE Materials Science and Engineering, Beijing University of Chemical Technology (June, 2000)

**DECLARATION OF
Steven Kerr**

I, Steven Kerr, declare as follows:

1. I am employed by the California Energy Commission as an Energy Resources Specialist III (Supervisor) in the Siting, Transmission and Environmental Protection Division.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I oversaw preparation of staff testimony on **Aesthetics, Agriculture/Forestry, Alternatives, Environmental Justice, Land Use, Mandatory Findings, Population/Housing, Public Services, Recreation, and Transportation** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 3, 2021

Signed: 

At: Sacramento, California



CALIFORNIA ENERGY COMMISSION

Steven Kerr
Energy Resources Specialist III

Education

California State Polytechnic University, San Luis Obispo, CA
Degree: Bachelor of Science in City and Regional Planning, 2005

Experience

California Energy Commission
Community Resources and CEQA Unit
2012-Present
Sacramento, CA
Energy Resources Specialist III-Supervisor

- Supervise the project management of Siting, Transmission, and Environmental Protection Division staff environmental analyses.
- Supervise the preparation of alternatives, environmental justice, land use, mandatory findings of significance, socioeconomic, transportation, and visual resources staff technical analyses.
- Review thermal power plant applications and amendments for environmental impacts.
- Evaluate projects in accordance with CEQA, the California Energy Commission siting regulations, and federal, state and local laws, ordinances, regulations, standards.
- Participate in public workshops and provide testimony at hearings regarding project proposals.
- Write environmental analysis documents.

TPK Inc.
2011-2012
Sacramento, CA
Property Manager/Associate Consultant

- Management of properties and assets throughout California and Oregon.
- Assist in the preparation of mobile home park closure impact report for Port of San Luis.
- Use various software applications to produce and review billing and financial records.
- Work with local agencies to coordinate infrastructure improvements.

City of Sacramento
Development Services Department
2007-2009
Sacramento, CA
Assistant Planner

- Project manager for various residential, commercial, industrial, and office development projects.
- Assist customers with zoning, design review, preservation, environmental, subdivision code, and sign questions, both at the public counter and by phone/email.
- Provide customers with required entitlement information, fee estimates, and accept applications for proposed development projects.
- Review applications and plans for consistency with city codes, general plan, and applicable community plans, specific plans, and planned unit development guidelines.
- Present projects at community meetings and work with neighborhood association leaders on controversial projects.
- Write staff reports and conditions of approval.
- Present projects at Zoning Administrator, Planning Commission, and City Council public hearings.
- Research development and entitlement histories of parcels.

City of Atascadero
Community Development Department
2005-2006
Atascadero, CA
Planning Intern

- Prepare environmental review documents.
- Review business licenses and building permits.
- Draft letters and staff reports.
- Respond to questions from the public on planning and zoning related issues.
- Access and update information in GIS and Excel.

DECLARATION OF Shahab Khoshmashrab

I, Shahab Khoshmashrab, declare as follows:

1. I am employed by the California Energy Commission as a Senior Mechanical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I oversaw the preparation of staff testimonies on **Noise and Vibration, Energy Resources, Appendix A, and Alternative Technologies in Alternatives** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimonies are valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/6/2021

Signed: *shahab khoshmashrab*

At: Sacramento, California

Shahab Khoshmashrab, P.E.
Senior Mechanical Engineer

Professional Experience

2001-Current—Senior Mechanical Engineer – Siting, Transmission, and Environmental Protection Division – California Energy Commission

- Perform analysis of, and address complex engineering issues related to, generating capacity, power plant reliability, energy efficiency, noise and vibration, jurisdictional determination, and the mechanical, civil, electrical, and structural aspects of power plants' licensing, construction, and operation.
- Review and evaluate projects to ensure compliance of power plants and related facilities with applicable laws, ordinances, regulations, and standards and California Environmental Quality Act.
- Assist the California Energy Commission in policy making related to electricity generation.

1998-2001—Structural Engineer – Rankin & Rankin

Engineered concrete foundations, structural steel and sheet metal of various building structures including energy related structures such as fuel islands. Performed energy analysis/calculations of such structures and produced both structural plans and detailed shop drawings using AutoCAD.

1995-1998—Manufacturing Engineer – Carpenter Advanced Technologies

Managed manufacturing projects of various mechanical components used in high tech medical and engineering equipment. Wrote and implemented QA/QC procedures and occupational safety procedures. Conducted developmental research of the most advanced manufacturing machines and processes including writing of formal reports. Developed project cost analysis. Developed/improved manufacturing processes.

Education

- California State University, Sacramento-- Bachelor of Science, Mechanical Engineering
- Registered Professional Engineer (Mechanical), California License No. M 32883, Exp. 9/30/2022

**DECLARATION OF
Ellen LeFevre**

I, Ellen LeFevre, declare as follows:

1. I am employed by the California Energy Commission as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Population and Housing, Public Services, Recreation, Environmental Justice, and Mandatory Findings of Significance** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 8/3/2021 Signed: *Ellen LeFevre*

At: Sacramento, California



Ellen LeFevre
Planner II

Education, Certification & Associations

Sacramento State

Degree: Bachelor of Science in Geology

UC Davis Extension

Land Use and Environmental Planning courses

Experience

California Energy Commission

Planner II – 2017 to present

- Prepare socioeconomic, land use, transportation, and environmental justice analyses for proposed and existing energy facility sites. Prepare final analyses for power plant applications in the form of expert technical testimony.
- Coordinate and work with federal, state, regional, and local governments regarding energy-related issues and to assure their input into the Commission power plant siting process.
- Evaluate projects in accordance with the Warren-Alquist Act, California Environmental Quality Act (CEQA), California Energy Commission siting regulations, federal, state, and local laws, ordinances, regulations, and standards.
- Evaluate the licensee's compliance with conditions of certification for power plant facilities.

California Energy Commission

Planner I – 2015 to 2017

- Evaluate and analyze environmental and socioeconomic impacts of proposed energy facilities to ensure the requirements of the Warren-Alquist Act and California Environmental Quality Act are satisfied.

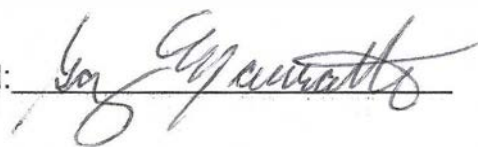
DECLARATION OF
Garry Maurath, PhD, PG, CHG

I, Garry Maurath, declare as follows:

1. I am employed by the California Energy Commission as an Engineering Geologist.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Mineral Resources**, and **Geology and Soils** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.
I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 29 July 2021

Signed: _____



At: Sacramento, California

Garry Maurath, Ph.D., P.G., CHG
Engineering Geologist

Experience Summary

Dr. Maurath has 45+ years of experience in the design, management, and execution of geologic, hydrogeologic, geotechnical, geophysical, geothermal, and environmental investigations. Dr. Maurath has conducted numerous licensing studies and performed feasibility studies, site assessments, and construction support for power plants, hazardous waste facilities, dams, canals, tunnels, levees, high-temperature geothermal projects, strategic fuel depots, solid waste landfills, hazardous, toxic and radioactive waste (HTRW) facilities, and both permanent and tactical military infrastructure. He has been responsible for examining and evaluating present and potential geology, paleontology, hydrogeology, and environmental conditions for the planning, design, construction, maintenance, and/or clean-up of numerous facilities. This work has been performed in urban, rural, and remote settings.

His work has included CERCLA and RCRA site remedial investigations and feasibility studies, surface geologic mapping in volcanic, metamorphic, and sedimentary terrain, surface geophysical surveys, borehole siting, drilling, logging, aquifer evaluation and testing, subsurface mine evaluations, mine sampling, construction dewatering, and mercury soil surveys. Dr. Maurath has been responsible for the execution of hazardous waste, low-level, and high-level radioactive waste projects within local, state and federal regulatory guidelines in US EPA regions III, V and IX. He has been involved in the preparation of NEPA and CEQA documentation, EISs, EIRs, NDs, MNDs, NPDES permits, and numerous license applications for the Federal Energy Regulatory Commission and the California Energy Commission.

Dr. Maurath has been a senior scientist and managed projects for small, medium, and large size companies; local, state, and federal government agencies; and non-profit organizations. He has worked with or for SMUD, PG&E, Calpine, LADWP, MWD, DWR, California Geological Survey, U.S. Army Corps of Engineers, and several DOE facilities/national laboratories, including Los Alamos, SANDIA, INEL, Savannah River, Moxey Flats, and Hanford. His career has given him the opportunity to work in more than 26 states and 21 countries throughout the world.

Selected Project Experience [technical position/project name/location/lead agency or owner]

- Engineering Geologist, North of the Delta Off-stream Storage (NODOS) Project [Sites], US Bureau of Reclamation
- Engineering Geologist, North Umpqua River Project, Roseburg, Oregon
- Engineering Geologist, Piñon Pine Power Project, Sierra Pacific Power Company
- Engineering Geologist, Protected Fuel Depots Feasibility Study, Kuala Lumpur, Malaysia, Malaysian Ministry of Defense
- Engineering Geologist, Sanitary Landfill Siting Investigation, Fort Drum, New York, US Army Corps of Engineers
- Engineering Geologist, Sharp Army Depot Building S-4 Geohazard Assessment, US Army Corps of Engineers
- Engineering Geologist, Site Characterization of Superconducting Super-Collider (SSC) Sites, New York, NY UDC.
- Engineering Geologist, Union Valley Penstock Bifurcation Study, Upper American River, CA, SMUD
- Engineering Geologist, Upper Gorge Bypass Power Plant, Los Angeles Department of Water and Power
- Environmental Geologist, Gardena Sumps, Gardena, California, Atlantic Richfield
- Environmental Geologist, Low-level Radioactive Waste Disposal Site, Moorehead, KY, Moxey Flats Steering Committee.
- Environmental Geologist, Regulatory Compliance and Emergency Reporting Requirements, EG&G
- Field Coordinator, Feather River West Levee Rehabilitation Project, Sutter Butte Flood Control Agency and CA DWR
- Geochemist, Office of Nuclear Waste Isolation Licensing Project Manager, Columbus, OH, Battelle Memorial Institute
- Geologist – Geology and Soils, Supplemental CEQA Document - Slab Creek, SMUD.
- Geologist, Alternative Energy Feasibility Study, Ohiopyle State Park, Pennsylvania, PA Department of Natural Resources
- Geologist, Assessment of Geothermal and Precious Metal Prospects, Western United States, AMAX Exploration
- Geologist, Clearlake Hot Dry Rock Demonstration Project, Clearlake, CA, California Energy Commission
- Geologist, Hydropower Relicensing EIS's, California, Federal Energy Regulatory Commission
- Geologist, Paleoliquefaction Studies along the Eastern Seaboard of the United States, Nuclear Regulatory Commission
- Geologist, Public Hearings on the North Carolina Low-Level Waste Siting
- Geologist, Rocky Point Pumped Storage Project, Taylor Park, Colorado, Natural Energy Resource Company
- Geologist, Statewide Liquid Geothermal Resource Evaluation, California, California Energy Commission
- Geologist/Paleontologist, Alamitos Energy Center, Huntington Beach, California, California Energy Commission
- Geologist/Paleontologist, Blyth Solar Power Project, Blyth, California, California Energy Commission
- Geologist/Paleontologist, Carlsbad Energy Center Project, Carlsbad, California, California Energy Commission
- Geologist/Paleontologist, El Segundo Power Project, El Segundo, California, California Energy Commission
- Geologist/Paleontologist, Gateway Generating Station, Antioch, California, California Energy Commission
- Geologist/Paleontologist, Geysers (Lakeview; NCPA #2), Calistoga, California, California Energy Commission
- Geologist/Paleontologist, Humboldt Bay Project, Humboldt, California, California Energy Commission
- Geologist/Paleontologist, Huntington Beach Energy Center, Huntington Beach, California, California Energy Commission
- Geologist/Paleontologist, Mission Rock Energy Center, Santa Paula, California, California Energy Commission
- Geologist/Paleontologist, Oakley Power Project, Oakley, California, California Energy Commission
- Geologist/Paleontologist, Pomona Repower Project, Pomona, California, California Energy Commission
- Geologist/Paleontologist, Pio Pico Energy Project, California, California Energy Commission
- Geologist/Paleontologist, Puente Power Project, Oxnard, California, California Energy Commission

- Geologist/Paleontologist, Ravenswood-Cooley Landing Reconductoring, Menlo Park and East Palo Alto, CPUC
- Geologist/Paleontologist, Stanton Energy Reliability Center, Stanton, California, California Energy Commission
- Hydrogeologist, Arco 5550 – City of Pomona Well-29, California, BP/Atlantic Richfield
- Hydrogeologist, ARCO Alegria/Gaviota Marine Terminal, Gaviota, California, BP/Atlantic Richfield
- Hydrogeologist, Assessment of 14 U.S. EPA Superfund Sites, CA, NJ, VA, OH, PA, and NY, US EPA
- Hydrogeologist, Auburn Tunnel Pumping Project, Auburn, California, City of Auburn
- Hydrogeologist, Defense Fuel Supply Point Ozol, Benicia, California, U.S. Army Corps of Engineers
- Hydrogeologist, Delta Habitat Conservation and Conveyance Project (DHCCP), CA DWR
- Hydrogeologist, Destruction of Wells N-11, N-18, & N-19, Sacramento, CA, Sacramento Suburban Water District
- Hydrogeologist, Diamond Valley Reservoir, Hemet, CA, Metropolitan Water District of Southern California
- Hydrogeologist, Geff Alternative Site Aquifer Characterization, Chicago, IL, State of Illinois
- Hydrogeologist, Groundwater Modeling of Alternative Low-level Waste Vault Designs, Savannah River, Westinghouse
- Hydrogeologist, Groundwater Monitoring in the Globe Mining District, Globe Arizona, Gila River Indian Community
- Hydrogeologist, Hydrogeologic Assessment of Potential Hazardous Waste Sites, San Francisco Bay Area, CA, PG&E
- Hydrogeologist, Kern Water Bank Evaluation Project, Kern Water Bank
- Hydrogeologist, Lake Skinner Groundwater Seepage Adjudication, Metropolitan Water District of Southern California
- Hydrogeologist, Los Baños Grandes Groundwater Resource Evaluation, Los Baños, California, CA DWR
- Hydrogeologist, Municipal Water Supply Well Siting, Design, & Construction, Alleghany County Water District
- Hydrogeologist, Mt. Hope Pumped Storage Project, Mt. Hope, New Jersey, Federal Energy Regulatory Commission
- Hydrogeologist, Platte River EIS, Wyoming and Nebraska, Federal Energy Regulatory
- Hydrogeologist, Sacramento Ethanol and Power Cogeneration Project, Sacramento, CA, ARK Energy
- Hydrogeologist, Sutter Power Plant AFC with the California Energy Commission, Sutter County, Calpine
- Hydrogeologist, Upper Rio Grande Flood Control Sys. Replacement, TX, Int. Boundary & Water Com.- US & Mexico
- Hydrogeologist, Vinvale Terminal, Southgate, California, BP/ARCO
- Hydrogeologist, Well 23 Assessment, Sacramento, CA, Sacramento Suburban Water District
- Hydrogeologist, Well 6 Destruction and Re-design, Sacramento, CA, Sacramento Suburban Water District
- Hydrogeologist, Well15 Rehabilitation, Rio Linda, CA, Rio Linda Elverta Community Water District, Rio Linda
- Independent Technical Reviewer, Calaveras Dam Replacement Project
- Independent Technical Reviewer, Diablo Canyon Nuclear Power Plant, Diablo Canyon, California, CEC
- Independent Technical Reviewer, Panama Canal Pacific Access Channel Project #4, Panama Canal Authority.
- Independent Technical Reviewer, Searchlight Wind Energy Project EIS, Bureau of Land Management
- Program QA/QC Manager, Urban and Non-Urban Evaluation Program (ULE/NULE), Sacramento, California, CA DWR
- Project Manager, Castaic Power Plant FERC Relicensing, Los Angeles Department of Water and Power (LADWP)
- Project Manager, Dos Pueblos Pipeline Removal Project, Goleta, California, BP/Atlantic Richfield
- Project Manager, Hanford, Technical Baseline Studies, Hanford, Washington, Westinghouse Hanford Company
- Project Manager, Los Angeles Terminal, Los Angeles, California, Conoco-Phillips
- Soils Analyst, Soil Trafficability Surveys, Federal Republic of Germany, U.S. Army Corps of Engineers
- Subject Mater Expert - California Geology, CA Board of Professional Engineers, Land Surveyors, and Geologists
- Subject Mater Expert - Hydrogeology, CA Board of Professional Engineers, Land Surveyors, and Geologists
- Task Order Manager, Non-Urban Levee Evaluation Project (NULE), Sacramento Delta, California, CA DWR

Education

- PhD/Geology/1989/Kent State University, OH
- MS/Geology/1980/Kent State University, OH
- BS/Geology/1974/Lehigh University, PA

Registration

- 2008/Certified Hydrogeologist/CA/#906
- 1992/Professional Geologist/CA/#8346
- 1985/HAZWOPER/OHSA
- 1991/HAZWOPER Supervisor Certification/OHSA

Professional Societies/Affiliates

- Sigma Xi, Scientific Research Society, Life Member
- Association of Environmental and Engineering Geologists (former Finance Committee co-chair and member of the Board of Directors)
- Groundwater Resources Association of California

Publications

Dr. Maurath has more than 40 publications covering topics including paleoliquefaction, terrestrial heat flow, numerical modeling, hydrogeology, nuclear waste, hazardous waste, and geothermal energy. He is co-editor of *Geology of Sacramento*, which was published in January 2020.

Academia

Dr. Maurath has taught undergraduate courses in Physical Geology, Hydrogeology, Environmental Habitats, and Laboratory Safety; and graduate level courses in Geology of the Bahamian Platform, Carbonate Deposition, Reef Ecology, Data Management, and ICP Laboratory Techniques for Trace Element Geochemistry. Dr. Maurath has been affiliated with Kent State University, University of California at Davis, California State University Sacramento, Monmouth College, and the University of St. Francis.

**DECLARATION OF
Melissa Mourkas**

I, Melissa Mourkas, declare as follows:

1. I am employed by the California Energy Commission as a Planner II, Cultural Resources.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Cultural Resources and Tribal Cultural Resources** as it concerns the Built Environment for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.
I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 07/29/2021 Signed: *Melissa Mourkas*

At: Sacramento, California

MELISSA MOURKAS

EDUCATION

MASTER OF ARTS, LANDSCAPE DESIGN & PLANNING, 1994 CONWAY SCHOOL OF LANDSCAPE DESIGN, CONWAY, MASSACHUSETTS

Graduate landscape design program providing professional training in site design and land-use planning. Curriculum emphasis is on sustainable landscape planning and design. Graduate projects included: Master Plan for a 45-acre historic resort, original landscape designed by F.L. Olmsted and Performance Standards for a proposed industrial park.

BACHELOR OF ARTS, HISTORY OF ARCHITECTURE & ART, 1981 SCRIPPS COLLEGE, CLAREMONT, CALIFORNIA

Major studies in Art and Architectural History, Urban Development. Senior thesis: documentation and analysis of the innovative residential designs and construction techniques of California modern architect Rudolf M. Schindler. Minor studies in Art and the Humanities.

PROFESSIONAL EXPERIENCE/QUALIFICATIONS

- Licensed Landscape Architect, California # 5139
- Qualified Architectural Historian, Secretary of the Interior's Standards for Historic Preservation, Code of Federal Regulations, 36 CFR Part 61.

PLANNING AND HISTORIC PRESERVATION:

April 2010 to Present: Planner II, California Energy Commission, Siting, Transmission and Environmental Protection Division. Provide technical environmental analysis of proposed energy facilities and development. Review of EIR/EIS documents prepared by other agencies under NEPA. Specific tasks include: the assessment of potential impacts of new electric power plants on both Visual and Cultural Resources; identification of suitable mitigation measures under CEQA; preparation of written testimony; participation in public workshops; presentation of sworn testimony during evidentiary hearings, and project monitoring to ensure compliance with local, state and federal environmental laws and regulations. Cultural Resources specialty in the built environment, architectural and landscape history. Section 106 review of federally-funded energy efficiency upgrades under Programmatic Agreement with California OHP.

2008-2014: Member, City of Sacramento Preservation Commission (Chair 2013-2014)

2005 to 2008: Assistant Planner, Historic Preservation Office, City of Sacramento, CA
Responsible for design review and approval for private and public development projects involving rehabilitation, preservation and restoration of historic resources and districts under CEQA. Prepared staff reports for Preservation Commission and Council, and coordinated with other planning staff on concurrent entitlements. Staff liaison on municipal development projects involving historic resources.

LANDSCAPE ARCHITECTURE:

1994 to Present: Landscape Architecture and Design. Experience in landscape architecture, landscape construction estimating, site planning, historic landscapes and landscape master plans. Provide landscape architecture and consulting services to private clients, public organizations, contractors, and design firms. Preparation of Cultural Landscape Reports. Frequent speaker to various groups on landscape design, construction and cultural landscapes.

**DECLARATION OF
Laiping Ng**

I, Laiping Ng, declare as follows:

1. I am employed by the California Energy Commission as an Associate Electrical Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Electrical Power Delivery in Project Description and Pacific Gas and Electric Company Santa Teresa Substation Details in Appendix B** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: Laiping Ng Signed: 7/30/2021

At: Sacramento, California

Laiping Ng
Associate Electrical Engineer

Education:

Master of Science: Electrical Engineering - Power
California State University, Sacramento

Bachelor of Science: Electrical Engineering - Power
California State University, Sacramento

Power Certificate – EPRI

Experience:

April 1999 – Present:

- Review and evaluate electrical transmission system sections of the application to ensure that the transmission engineering aspects of the power plant, switchyards, substations, and the related facilities comply with applicable laws, ordinances, regulations, and standards (LORS).
- Prepare written analysis, which address the issues of the adequacy of proposed projects to meet applicable LORS.
- Perform load flow studies and fault analysis.
- Coordinate with CAISO, WSCC and other regulatory agencies and coordinate with utilities companies in the review and evaluation of the power plant siting process.

May 1991 – April 1999:

- Prepared engineering bid specifications for recommended lighting and HVAC projects. Evaluated contractor bids and recommended contractors to customers. Reviewed RFPs and RFQs. Evaluated, selected, and managed engineering consultants. Administrated and coordinated contracts.
- Designed electrical systems for indoor and outdoor lighting and lighting controls. Assisted in design cooling systems and controls for school buildings and office buildings. Reviewed and checked electrical lighting designs and drawings. Analyzed designs and made recommendations for effective actions.
- Performed facility energy audits and field surveys on schools, offices, hospitals and county jail facilities to identify energy efficiency improvements and cost estimate with respect to lighting and HVAC systems. Inspected lighting and HVAC system equipment installation.
- Worked in a Nonresidential Energy Efficiency Standards development team. Prepared and updated Standards concentrating on interior building illumination and indoor and outdoor flood lighting.

**DECLARATION OF
Wenjun Qian, Ph.D., P.E.**

I, Wenjun Qian, declare as follows:

1. I am employed by the California Energy Commission as an Air Resources Engineer.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Air Quality, Emergency Operation in Appendix B, and Appendix C** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: 7/29/2021

Signed: 

At: Sacramento, California

Wenjun Qian, Ph.D., P.E.

Education

Ph.D., Mechanical Engineering, University of California, Riverside, 2010

M.S., Mechanical Engineering, George Washington University, 2005

B.S., Mechanical Engineering, Shanghai Jiao Tong University, China, 2004

Professional Experience

Air Resources Engineer

(July 2010 – Present)

California Energy Commission, Siting Transmission and Environmental Protection Division

Technical expert responsible for completing environmental analysis on thermal power plant project (including linears) applications seeking a California Energy Commission license, or an amendment to an existing license, in addition to determining ongoing compliance for facilities operating under existing Energy Commission licenses. Specific responsibilities, by technical area, include the following:

Air Quality

- § Reviewing modeling protocols to make sure they comply with current modeling guidance documents.
- § Reviewing project applications to verify engineering data, including worst case emissions during construction/demolition, commissioning, and various operating profiles.
- § Completing air dispersion modeling to identify the worst case project impacts, and determining whether the project would result in any significant air quality related impacts.
- § Determining whether the project would comply with all federal, state, and local air quality laws, ordinances, regulations, and standards.
- § Coordinating with local Air Quality Management Districts and incorporating Determinations of Compliance into Energy Commission Staff Assessments.
- § Investigating and recommending appropriate emission mitigation measures under California Environmental Quality Act requirements.
- § Managing ongoing air quality compliance for power plant facilities during construction and operation.

Greenhouse Gases

- § Reviewing project applications and quantifying potential greenhouse gases emissions associated with construction/demolition, commissioning, and operation of the proposed facilities.
- § Determining whether the project would comply with all federal, state, and local greenhouse gases laws, ordinances, regulations, and standards.
- § Analyzing the implications the proposed facility may have on California's electricity sector, and how it may affect greenhouse gases emissions in California and globally.

Visible Water Vapor Plume

- § Assisting the technical experts authoring the Visual Resources section to identify potential visual impacts as a result of visible water vapor plumes.
- § Reviewing operational design data from visible water vapor plume emitting sources and calculating visible plume frequencies and sizes.

Vertical Plume Velocity

- § Assisting the technical experts authoring the Traffic and Transportation section to identify potential hazards to aircrafts as a result of vertical plume velocities.
- § Reviewing operational design data from vertical plume emitting sources and calculating the vertical plume velocities at various heights.
- § Identifying at what height above the plume sources the vertical plume velocities drop below the threshold of concern set by the Federal Aviation Administration.

Nitrogen Deposition

- § Assisting the technical experts authoring the Biological Resources section to identify potential nitrogen deposition impacts.
- § Reviewing and completing air dispersion modeling to identify nitrogen deposition impacts to sensitive habitats.

Worked on the following AFCs/SPPEs:

Great Oaks South Backup Generating Facility, Laurelwood Data Center, Mariposa Energy Project, McLaren Backup Generating Facility, Pio Pico Energy Center, Pomona Repower Project, Puente Power Project, Quail Brush Generation Project, Redondo Beach Repower, Rio Mesa Solar Electric Generating System, Sequoia Data Center, etc.

Worked on the following project amendments:

El Segundo Energy Center, Huntington Beach Energy Project, Ivanpah Solar Electric Generating System, Orange Grove Energy Power Project, Otay Mesa Energy Center, Palomar Energy Project, Russell City Energy Center, etc.

Research Assistant

(Sept. 2005 – June 2010)

University of California, Riverside, Mechanical Engineering

- § Evaluated air quality impacts of distributed generations in South Coast Air Basin of California.
- § Estimated air quality impacts from the key power plant of Los Angeles Department of Water and Power in shoreline urban areas.
- § Improved AERMOD performance during low wind stable conditions.
- § Prepared and presented multiple comprehensive reports, journal papers, and conference papers.

Licensures

Professional Engineer, Mechanical (California License No. M 36370)

Awards

2013 Superior Accomplishment Award – California Energy Commission

**DECLARATION OF
Gabriel Roark, M.A.**

I, Gabriel Roark, declare as follows:

1. I am employed by the California Energy Commission as a Senior Environmental Planner.
 2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
 3. I prepared the staff testimony on **Cultural and Tribal Cultural Resources**, as concerns archaeological and tribal cultural resources, for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
 4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
 5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.
- I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 29, 2021

Signed: *Gabriel Roark*

At: Sacramento, California

GABRIEL ROARK, M.A.

Archaeologist

Since 1999, Mr. Roark has directed and conducted cultural resource investigations for projects involving the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). Mr. Roark possesses extensive professional experience in prehistoric archaeology, historical archaeology, and regulatory compliance, routinely serving as the project manager and technical lead on several projects simultaneously. He specializes in the design and implementation of archaeological monitoring programs, archaeological surveys and excavations, archival research, and CEQA and Section impact analyses. His Section 106 experience includes drafting memoranda of agreement, programmatic agreements, and historic properties treatment plans.

Mr. Roark currently serves as the technical senior in the Cultural Resources Unit of the California Energy Commission's Siting, Transmission, and Environmental Protection Division. In addition to cultural resource analyses for power plant applications under the Warren-Alquist Act, Mr. Roark provides quality control and assurance for the work of the Cultural Resources Unit staff.

Professional Employment History

State Energy Resources Conservation and Development Commission (California Energy Commission). Senior Environmental Planner (Cultural Resources). May 1, 2019–present.

State Energy Resources Conservation and Development Commission (California Energy Commission). Planner II (Cultural Resources). June 1, 2012–April 30, 2019.

ICF International. Senior Associate (Archaeologist). February 23, 1999–May 30, 2012.

Years of Experience

- Professional start date: 02/23/1999

Education

- MA, Anthropology, California State University, Sacramento, 2009
- BA, Anthropology, California State University, Sacramento, 1999

Special Training

- Cascade Range Archaeological Project, Crew Chief, California State University, Sacramento, 1999
 - Archaeological Field School, Mammoth Lakes, California State University, Sacramento (Dr. Mark E. Basgall, Director), 1999
 - Anthropology 199: Introduction to Analysis of California Gold Rush Chinese Ceramics, Independent Study, California State University, Sacramento (Dr. Jerald J. Johnson, Instructor), 1999
 - Anthropology 195A and 192: Fieldwork and Laboratory Work in Archaeology, Coloma, California State University, Sacramento (Dr. Jerald J. Johnson and Dr. Tom Strasser, Instructors), 1997
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**DECLARATION OF
Kenneth Salyphone**

I, Kenneth Salyphone, declare as follows:

1. I am employed by the California Energy Commission as a Mechanical Engineer in the Siting, Transmission and Environmental Protection Division.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on **Energy and Energy Resources, Noise, Appendix A, and Appendix D** for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: August 3, 2021 Signed: /s/ Kenneth Salyphone

At: Sacramento, California

Kenneth Salyphone

916.654.4658

1516 9th Street Sacramento CA 95814

kenneth.salyphone@energy.ca.gov

PROFESSIONAL EXPERIENCE:

Mechanical Engineer

California Energy Commission, Sacramento CA

12/2020 – Present

Mechanical Design Engineer, Lead

Micron Technology, Inc., Folsom CA

12/2017 – 12/2020

Mechanical Design Engineer

Micron Technology, Inc., Folsom CA

12/2013 – 12/2017

Mechanical Design Engineer, Intern

Micron Technology, Inc., Folsom CA

06/2013 – 12/2013

EDUCATION:

Master of Science in Mechanical Engineering, CSU Sacramento, 2013

Bachelor of Science in Mechanical Engineering, CSU Sacramento, 2010

CERTIFICATION/LICENSE:

Engineer-In-Training (EIT) Certified # 149129

SolidWorks Certified # C-65MWAZ786B

Professional Engineering License (in progress)

WHAT I DO:

- Prepare analyses of facility design code compliance, noise and vibration, power plant efficiency, generating capacity determination, and power plant reliability aspects of power generation plants and related facilities. Includes evaluating facility design; potential impacts and appropriate mitigation measures; and determining the ability of the facility to comply with applicable laws, ordinances, regulations, and standards
- Review and evaluate the mechanical engineering and related aspects of equipment as applied to thermal power plants related facilities. Includes the evaluation of system and equipment design, performance and reliability, as well as alternatives to the proposed facility.
- Develop compliance monitoring requirements and verifications related to noise and vibration and facility design to ensure that proposed facilities are properly constructed and operated in accordance with Energy Commission certification requirements.
- Monitor construction and operation of licensed facilities to assure their conformance with licensing requirements.
- Evaluate the efficiency and reliability implications of energy generation, supply, and end use strategies as input energy policy development.
- Evaluate existing and proposed governmental laws, ordinances, regulations, standards, and policies as they pertain to power plant design.
- Provide expert witness testimony at commission hearings.

MEMBERSHIPS AND AFFILIATIONS:

- Member of Tau Beta Pi
- Member of the American Society of Mechanical Engineers

**DECLARATION OF
Andrea Stroud**

I, Andrea Stroud, declare as follows:

1. I am employed by the California Energy Commission as a Planner II.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the staff testimony on Biological Resources for the **GREAT OAKS SOUTH BACKUP GENERATING FACILITY** based on my independent analysis of the Application for Small Power Plant Exemption and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issues addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and belief.

Dated: July 29, 2021 Signed: Andrea Stroud

At: Sacramento, California

Andrea Stroud

Employment History

California Energy Commission

Planner II, Staff Biologist

12/2009 to present

As a staff biologist with the Energy Commission, Mrs. Stroud analyzes the biological resource components of energy facilities siting and small power plant applications to assess resource impacts, develop mitigation, and to evaluate compliance with applicable federal, state, and local, laws, ordinances, regulations, and standards. This requires working closely with biological resource protection and management agencies, subject matter experts, and Energy Commission consultants as well as with other Energy Commission staff to ensure the best available information is included in staff analyses.

California Department of Transportation, District 3

Associate Environmental Planner/Environmental

11/1998 to 7/2000

Mrs. Stroud's primary duties with Caltrans as Project Biologist were to analyze environmental impacts to special status plants, wildlife and wetlands and stream associated with transportation projects in Northern California. She wrote environmental documents to satisfy CEQA, NEPA, obtained 404 permits, 401 certification and 1602 agreements for various transportation-related projects. She acted as liaison for Federal Highways Administration while reviewing documents prepared for local projects.

Jones & Stokes Associates, Inc.

Environmental Specialist/Botanist

04/1994 to 11/1998

While with the environmental consulting firm Jones & Stokes Assoc. Inc., Mrs. Stroud specialized in listed Brachiopod surveys, special status plant and floristic surveys. She worked throughout California including Sacramento, Placer, Fresno and San Diego counties and several military sites (BEALE AFB, Camp Roberts, & Fort Hunter Liggett). Projects while at JSA included protocol-level surveys for special-status plants and brachiopods, wetland delineations, and monitoring vernal pools, seasonal wetlands and riparian vegetation at mitigation sites. Managed brachiopod projects and budgets and writing biological resources sections of documents to satisfy NEPA and CEQA requirements.

El Dorado National Forest

Botanist (Volunteer)

07/1993 to 08/1993

Mrs. Stroud helped prepare environmental analyses of proposed timber and recreational projects in which, she produced inventories and assessments of the existing natural environmental conditions of project sites and watersheds.

EDUCATION

Biological Sciences

B.S.

California State University, Sacramento

June 1993