

DOCKETED

Docket Number:	19-SPPE-03
Project Title:	Sequoia Data Center
TN #:	232409
Document Title:	Staff's Opening Testimony with Declarations and Resumes
Description:	N/A
Filer:	Steve Kerr
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	3/13/2020 4:34:12 PM
Docketed Date:	3/13/2020

Memorandum

To: Commissioner Karen Douglas, Presiding Member
Commissioner Patty Monahan, Associate Member

Date: March 13, 2020

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

Leonidas Payne
Project Manager
(916) 651-0966

Subject: **CEC STAFF OPENING TESTIMONY WITH DECLARATIONS AND RESUMES FOR THE SEQUOIA BACKUP GENERATING FACILITY (19-SPPE-03) APPLICATION FOR SMALL POWER PLANT EXEMPTION (SPPE) PROCEEDING**

In accordance with the Committee Scheduling Order docketed January 29, 2020 (TN 231791), California Energy Commission staff (staff) submits its Opening Testimony consisting of staff's Initial Study and Proposed Mitigated Negative Declaration (IS/PMND) (TN 231651) and its responses to comments received on the IS/PMND (TN 232338) together with staff's declarations and resumes¹, which are attached.

¹ Staff may file additional declarations and resumes prior to the pre-hearing conference and evidentiary hearing for the project due to availability constraints caused by on-going COVID-19 mitigation efforts.

DECLARATION OF
Mark R. Hamblin

I, Mark R. Hamblin, declare as follows:

1. I am employed by the California Energy Commission as a Planner II 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Aesthetics**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020 Signed: Mark R. Hamblin

At: Sacramento, California



CALIFORNIA ENERGY COMMISSION

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 or visual resource issues pertaining to the siting of a thermal power plant and transmission facilities using applicable federal, state, and local laws, ordinances, regulations and standards (including the California Environmental Quality Act [CEQA] and Guidelines), and the California Energy Commission siting regulations in a written analysis and/or testimony; participate in public workshops, and present sworn testimony during evidentiary hearing(s) before Commissioners, if 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 (e.g., CEQA Guidelines, state Subdivision Map Act, state 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' organizations and interagency committees (county airport advisory committee, county habitat conservation plan steering committee, and community general plan citizen advisory committee[s]). 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 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
Jeanine Hinde**

I, Jeanine Hinde, declare as follows:

1. I am employed by the California Energy Commission as a Planner II 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Agriculture/Forestry** and **Land Use**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: *Jeanine Hinde*

At: Sacramento, California

JEANINE M. HINDE

Professional Experience

Planner II

May 2010–Present

California Energy Commission, Sacramento, CA

Environmental Office of the Siting, Transmission, and Environmental Protection Division

Generalist skilled in research and analysis and preparing staff assessments on proposed power plants. Assesses environmental impacts on land use, agricultural resources, and visual resources. Preparing the agricultural resources, forestry, and land use sections for the environmental documents evaluating several proposals for small power plant exemptions. Prepares alternatives analyses to comply with environmental regulations. Prepared the alternatives analysis on the Mission Rock Energy Center, a simple-cycle, natural gas-fired (NGF) power plant with 25 megawatts of battery energy storage in Ventura County. Prepared the alternatives analysis on the Puente Power Project, an NGF power plant proposed to replace two aging once-through cooled units at the Mandalay Generating Station in Ventura County. Prepared the visual resources analysis for the Huntington Beach Energy Project in Orange County. Prepared the alternatives analysis for an amendment to the Palen Solar Electric Generating System (SEGS) in the Colorado Desert. Prepared the alternatives analysis on the Hidden Hills SEGS in the Mojave Desert. Participates in public workshops and presents testimony on contested issues at evidentiary hearings before the Energy Commission. Prepared the land use analyses for a geothermal power plant in Imperial County and an NGF power plant in Stanislaus County. Coauthored the alternatives analyses on the proposed amendments to the Carlsbad Energy Center and El Segundo Energy Center projects.

Environmental Analyst and Project Coordinator

2004–2009

EDAW-AECOM, Sacramento, CA

Coordinated preparation of environmental studies to satisfy the California Environmental Quality Act (CEQA) and the National Environmental Policy Act and related permitting and regulatory requirements. Contributed to the preparation of regulatory compliance documents for projects addressing flood protection, wastewater management, water quality, habitat restoration, and urban development. As an assistant project manager, contributed to the preparation, technical review, and distribution of a variety of environmental compliance documents for projects that included a levee repair project on the Feather and Yuba Rivers, a levee seepage project on the San Joaquin River near the Sacramento-San Joaquin Delta (Delta), a wastewater treatment plant improvement project in Atwater, and a habitat restoration project adjacent to the middle Sacramento River. As an analyst, prepared environmental impact analyses for resource topics that included land use; agricultural resources; visual/aesthetic resources; public services, utilities and service systems; hazardous materials; recreation; and geology, soils, and mineral resources. Prepared mitigation monitoring and reporting program documents and assisted with fulfilling CEQA noticing and filing requirements.

Environmental Analyst, Independent Consultant

2003–2004

Sackheim Consulting, Fair Oaks, CA

Researched and wrote the aesthetics analyses for the CEQA documents on related neighborhood electrical distribution projects in the Natomas and Elkhorn areas of Sacramento. Prepared a similar analysis for a project in Elk Grove. Assisted with the analyses addressing potential impacts on cultural resources and issues related to hazards and hazardous materials.

Environmental Specialist II

1986–1997

Jones & Stokes Associates, Sacramento, CA

Evaluated impacts on land use, visual resources, and recreation for several state and federal projects, including a water supply management program in the East Bay, a project addressing long-term management of resources in the Delta and Suisun Marsh, and a military operations project at Camp Roberts. Provided technical review and coordinated preparation of report sections prepared by staff, and assisted with research and documentation of required federal, state, and local permits and approvals to include in regulatory compliance plans.

Education: *B.A. Geography, California State University, Chico*

DECLARATION OF Jacquelyn Leyva Record

I, Jacquelyn Leyva Record, declare as follows:

1. I am employed by the California Energy Commission as an Air Resources 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Air Quality** and **Greenhouse Gases**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California

Jacquelyn Leyva Record

916.654.3846

jrecord@energy.ca.gov

Education

California State University, Irvine, 2003-2008

Irvine, Ca

Bachelor of Science, Chemical Engineering, June 2008

Experience

California Energy Commission, March 2009-Present

Sacramento, Ca

Air Resources Engineer

Technical regulatory expert responsible for completing engineering and environmental analysis on thermal (utility scale 50MW or greater) power plant project siting applications seeking a California Energy Commission license 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:

- Identifying, assessing and analyzing greenhouse gas impacts of power generation development, emission and fuel use data analysis, to assess the local reliability areas around the power plants. Assisted in determining the role of aging power plants for the Energy Commission Integrated Energy Policy Report.
- Identifying, assessing and analyzing air quality impacts, along with thermal plume 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.
- Independently perform responsible, varied analysis assessing environmental impacts of energy resource use and large electric power generation projects in California.
- Managing ongoing engineering and environmental compliance for operational power plant facilities and recommending enforcement actions for violations.
- 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.

Preparation of Staff Assessments for the following Applications for Certification (AFCs) and project amendments of the following: Puente Power Project, Ivanpah Solar Electric Generating System, Rice Solar Energy Project, Blythe Solar Power Project, Palen Solar Power Project, Los Esteros Critical Energy Facility, Mariposa Energy Project, Roseville Energy Park, Metcalf Energy Center, Donald Von Raesfeld (Formerly Pico Power), Delta Energy Facility, Los Medonos (Pittsburg) Energy, Colusa Generating Station, Colusa Generating Station, Campbell Cogeneration Project and Sutter Energy Center.

Environmental Remediation Resources Group (ERRG), August 2008-2009
Sacramento, Ca

Engineering Assistant

- Assisted with both technical and field duties for a variety of environmental investigations.
- Assisted on an environmental site assessment, preliminary assessments (PA), site inspections, and remedial investigations feasibility studies.
- Field duties performed include groundwater sampling and air sampling

Tetra Tech EC, Inc., June 2007-2008
Santa Ana, Ca

Engineering Assistant Intern

- Assisted with both technical and field duties for a variety of environmental investigations.
- Assisted on an environmental site assessment, preliminary assessments (PA), site inspections, and remedial investigations feasibility studies.
- Field duties performed include groundwater sampling and air sampling

SF Regional Water Board, June 2005- September 2005
Oakland, Ca

Contract Work – Special Project

- Wrote a memorandum regarding total petroleum hydrocarbons showing up as false positives in submitted quarterly monitoring reports for NPDES FUEL permit.
- Researched various EPA methods of testing for VOC, and Fuel constituents in water.
- Communicated with consultants from Weiss Associates and state funded laboratories to come to a conclusion for memorandum.
- Site inspections, site reports.

Affiliated Associations

MAES (Mexican American Engineers and Scientists) – Vice Chair 2004-2005

**DECLARATION OF
Huei-An (Ann) Chu**

I, Huei-An (Ann) Chu, declare as follows:

1. I am employed by the California Energy Commission as an Air Resources 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Air Quality**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California

Huei-An (Ann) Chu

1516 Ninth Street, MS-46, Sacramento, CA 95814
Phone: 916-651-0965, Email: Ann.Chu@energy.ca.gov
Citizenship Status: U.S. Citizen

EDUCATION

PhD, Environmental Sciences and Engineering, 05/2006
School of Public Health, University of North Carolina at Chapel Hill
Area of Specialization: Environmental Risk Assessment, Environmental Management and Policy, Risk-Based Regulation, Biostatistics, Environmental Epidemiology

MEM, Environmental Management, 05/2000
School of Forestry and Environmental Studies, Yale University, New Haven, CT

MS, Environmental Engineering, 06/1998
National Taiwan University, Taipei, Taiwan

BA, Geography, with honors, 06/1996
National Taiwan University, Taipei, Taiwan

SKILLS

Language: Fluent in Chinese and English.

Computer software and programming skills: Hotspot Analysis Reporting Program (HARP), SAS, Stata, Minitab, ArcGIS, Stella, Crystal Ball, ISC, Microsoft Excel, PowerPoint, Word.

WORK EXPERIENCE

Air Resources Engineer, California Energy Commission, 1/12/2012 - Present

- Independently performs responsible, varied analyses assessing impacts from thermal power plants 50 megawatts and larger and the plants related facilities such as emergency engines and transmission lines, etc.
- Task scopes include public health impacts and transmission line safety and nuisance.
- Model air quality and public health impacts of stationary sources using HARP (Hot Spot Analysis and Reporting Program).
- Identify air quality and public health impacts of stationary sources and measures to mitigate these impacts following California Environmental Quality Act and regulations of US EPA (including the National Environmental Policy Act), ARB, and the Districts.
- Identify safety issues and nuisance impacts of transmission lines and measures to mitigate these impacts following guidelines of California Public Utilities Commission (CPUC) and Federal Aviation Administration (FAA).
- Collect, analyze, and evaluate data on the effects of air pollutants and power plant emissions on human health, and the environment.
- Ensure conditions of certification are met and recommending enforcement actions for violations.

Research Associate, Taiwan Development Institute, 10/01/2010 – 12/31/2011

- Provided professional consultation for the environmental risk assessment of Taiwan's techno-industrial development initiatives
- Reviewed the environmental risk assessment reports of Taiwan's techno-industrial development initiatives
- Presented in various distinguished lecturer series about environmental risk assessment

Consultant, Chu Consulting, 08/2007 - 07/2010

- Conducted a cumulative risk assessment to evaluate the risk associated with the emissions of VOCs from a petrochemical plants in southern Taiwan
- Used EPA's ISC3 model (based on Gaussian dispersion model) to simulate the dispersion and deposition of VOCs from this petrochemical plant to the neighboring areas, then used ArcGIS to spatially combine the population data and VOC simulation data (and further calculated risks)
- Built a framework of risk-based decision making to set the emission levels of VOCs to reduce people's exposure and the risk of experiencing health problems
- Presented in conference: SRA 2007
- Awarded: CSU-Chico BBS Faculty Travel Funds (2007)

Environmental Justice Intern, Clean Water for North Carolina (CWFNC), Summer, 2005

- Reviewed and critiqued key state environmental policies and the federal EPA Public Participation Policy.
- Interviewed impacted communities, member organizations of the NC Environmental Justice Network, state policy officials about how those policies are actually implemented.
- Wrote a report about the survey and review of environmental justice needs for key state policies.
- Report Publication: "Achieving Environmental Justice in North Carolina Public Participation Policy" (Aug, 2005).

Volunteer, New Haven Recycles and Yale Recycling, 08/1998 – 05/2000

- Promoted recycling and conservation
- Checked trash cans (chosen randomly) and recycling bins at each entryway of residential college, then gave grades.

Volunteer, Urban Resource Initiative (URI), Summer, 1998

- Planted trees for local community of New Haven for a better and sustainable environment

RESEARCH EXPERIENCE

Postdoctoral Research

Department of Public Health Sciences, University of California, Davis, 07/01/2010 – 09/30/2012

Research advisor: Dr. Deborah H. Bennett and Dr. Irva Hertz-Picciotto

- Work on two projects: NIEHS-funded ***Childhood Autism Risks from Genetics and Environment (CHARGE)*** and EPA-funded ***Study of Use of Products and Exposure Related Behavior (SUPERB)***.
- Perform statistical and quantitative analyses with SAS to analyze collected house dust data and children's urine concentrations of metabolites.
- Conduct exposure assessment to investigate if pesticides, flame retardants, and phthalates are risk factors for children autism.
- Conduct exposure assessment to explore the relationships between children's exposure to phthalate, benzophenone-3 (oxybenzone), triclosan, and parabens, and the use of personal care products.
- Produce scholarly peer-reviewed publications of methodology and findings, and write the final reports of both projects.

Carolina Environmental Program, University of North Carolina at Chapel Hill, 01/01/2006 – 12/31/2006

Research advisor: Dr. Douglas J. Crawford-Brown

- Applied a framework of risk-based decision-making to perchlorate in drinking water. (Awarded: SRA Annual Meeting Travel Award 2006)
- Conducted a material and energy flow analysis (MEFA) to quantify the overall environmental impact of Bank of America operations, and quantitatively analyze the strategies BOA might adopt to reduce these impacts and achieve sustainability. (Report Publication: "Environmental Footprint Assessment")

Doctoral Research, 08/2000-12/2005

Department of Environmental Sciences and Engineering, School of Public Health, University of North Carolina at Chapel Hill

Research advisor: Dr. Douglas J. Crawford-Brown

- Dissertation topic: **"A framework of Risk-Based Decision Making by Characterizing Variability and Uncertainty Probabilistically: Using Arsenic in Drinking Water as an Example"**.
- Conducted risk assessment for arsenic in drinking water.
- Conducted theoretical analysis on the variability and uncertainty issues of risk assessment.
- Conducted a meta-analysis to improve dose-response assessment.
- Conducted analytical and numerical analysis to build a new framework of risk-based decision-making which can be applied coherently across the regulation decisions for different contaminants.
- Presented in conferences: APPAM (2004), SRA (2004, 2005 and 2006), DESE Seminar (2005), CEP Symposium on Safe Drinking Water (2006).
- Awarded: SRA Annual Meeting Student Travel Award (2004 & 2005), UNC-CH Graduate School Travel Grants (2004), UCIS Doctoral Research Travel Awards (2002).

Master's Research

School of Forestry and Environmental Studies, Yale University, 08/1999 - 06/2000

Research advisor: Dr. Xuhui Lee

- Master's project: **"Forest Stand Dynamics and Carbon Cycle"**.
- Research project: "Monitoring Forest CO₂ Uptaking"
- Used remote sensing (ERMapper) to investigate the role of forest in the uptake of CO₂.
- Awarded from Teresa Heinz Scholars for Environmental Research Program (2000) and Klemme Award (1999).

Graduate Institute of Environmental Engineering, National Taiwan University, 06/1996 - 06/1998

Research advisor: Dr. Shang-Lien Loh

- Master's thesis: **"The Loads of Air Pollutants from Urban Areas on a Neighboring Dam and its Water Quality"**
- Research Projects: "Research on Air Pollutant Deposition in Urban Areas" and "the Fate and Flow of Recyclable Materials"
- Used Gaussian's Dispersion model (ISC3) to investigate the loads of air pollutants on dam water.

TEACHING EXPERIENCE

Lecturer

Department of Environmental Studies, California State University at Sacramento

- Environmental Politics and Policy, Fall 2011

Department of Geological & Environmental Science, California State University at Chico

- Environmental Risk Assessment, Spring 2009 & 2010
- Applied Ecology, Spring 2008
- Pollution Ecology, Fall, 2007

Department of Geography & Planning, California State University at Chico

- Seminar in Applied Geography & Planning – Environmental Regulation and Policy, Fall, 2007

Department of Forestry and Environmental Resources, North Carolina State University

- Environmental Regulation, Fall, 2006

Teaching Assistant

Department of Environmental Sciences and Engineering, UNC-Chapel Hill

- Environmental Risk Assessment, Spring, 2002
- Introduction to Environmental Science, Fall, 2001
- Analysis and Solution of Environmental Problems, Fall, 2001

Lab Instructor

Department of Environmental Sciences and Engineering, UNC-Chapel Hill

- Biology for Environmental Science, Fall, 2000

Graduate Institute of Environmental Engineering, National Taiwan University

- Water Quality Analysis, Fall, 1997

AWARDS and HONORS

- CSU-Chico BBS Faculty Travel Funds, 2007
- Member of Society of Risk Analysis (SRA), 2006-2008
- SRA Annual Meeting Student Travel Award, 2004-2006
- UNC-CH Graduate School Travel Grants, 2004
- Member of Association for Public Policy Analysis and Management (APPAM), 2004-2005
- UCIS Doctoral Research Travel Awards, 2002
- Graduate Student Teaching and Research Assistantships, 2000-2005
- Teresa Heinz Scholars for Environmental Research Program, 2000
- Yale Forestry & Environmental Studies, Klemme Award, 1999

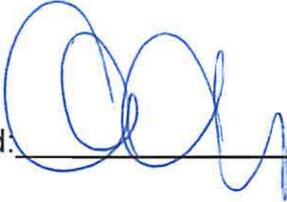
**DECLARATION OF
Ann Crisp**

I, Ann Crisp, declare as follows:

1. I am employed by the California Energy Commission as a Planner II 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Biology**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California



ANN CRISP
STAFF BIOLOGIST /PLANNER II

Education, Certification & Associations

- Associate of Arts Degree, Natural Science, College of Marin (1998)
- Bachelor of Science Degree, Wildlife, Fish and Conservation Biology, University of California, Davis (2004)

Experience

California Energy Commission (CEC) – from 3/2010 to Present

Planner II – Staff Biologist

As a staff biologist with the Energy Commission, Ms. Crisp analyzes the biological resource components of energy facilities siting applications to assess resource impacts, develop mitigation, and to evaluate compliance with applicable local, state, and federal 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.

Robertson-Bryan, Inc. – from 11/2006 to 3/2010

Staff Biologist

Ms. Crisp's duties with Robertson-Bryan, Inc. included development of technical study reports and presentations based on the conclusions of field studies for the Middle Fork American River Project (MFP) Integrated Licensing Process for the Placer County Water Agency. She conducted field studies in preparation of the biological resources component of the MFP and the Big Creek System Alternative Licensing Process for Southern California Edison Company (SCE) including wildlife reconnaissance surveys, protocol-level wildlife surveys (including bald eagle wintering and nesting surveys and California red-legged frog surveys) and botanical surveys (including special-status plant species, noxious weeds, and plants of cultural concern for Native Americans). Ms. Crisp prepared documents supporting various management plans as part of the Big Creek No. 4 Traditional Licensing Process for SCE, including yearly monitoring reports for the Sediment Management Plan, Noxious Weed Management Plan, and Valley Elderberry Longhorn Beetle Management Plan. She also prepared and reviewed technical reports and California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) chapters on terrestrial resources.



Pacific States Marine Fisheries Commission/ California Department of Fish and Game – from 3/2006 to 11/2006

Research Technician

While working with the California Department of Fish and Game through a partnership with the Pacific States Marine Fisheries Commission, Ms. Crisp conducted various focused wildlife surveys including reptile and amphibian cover board surveys, small mammal mark-recapture surveys, burrowing owl nest surveys, and California tiger salamander larval surveys. She collaborated on design and execution vegetation sampling protocol at multiple survey areas.

California Department of Fish and Game – from 11/2005 to 1/2006

Scientific Aide

Ms. Crisp led tours of the Nimbus Fish Hatchery to provide information on the function of the hatchery and fish biology to school groups and the general public.

Humboldt State Foundation / California Department of Fish and Game – from 3/2005 to 10/2005

Wildlife Research Assistant

While working with the California Department of Fish and Game (CDFG) through a partnership with the Humboldt State Foundation, Ms. Crisp conducted field-based vegetation sampling to classify vegetation types/wildlife habitats on multiple CDFG Wildlife Areas and Ecological Reserves. She was responsible for data management and preparation for inclusion in a statewide database. Ms. Crisp also conducted focused wildlife surveys including reptile and amphibian cover board surveys, small mammal live-trapping surveys, and nocturnal mammal spotlight surveys.

Oregon State University – from 6/2004 to 9/2004

Research Technician

Ms. Crisp conducted bat surveys and vegetation inventories and assessments on a bat survey crew in western Oregon. This included collecting data on bat activity using Anabat II detectors, capturing bats using mist nets and H-nets and collecting biological samples and morphological data and vegetation sampling.

Sacramento Regional County Sanitation District – Bufferlands – from 7/2003 to 3/2004

Senior Student Intern

Ms. Crisp assisted with various habitat restoration and management projects within the 2,650-acre surrounding the Sacramento Regional Wastewater Treatment Plant. She conducted waterfowl and shorebird surveys as well as sensitive species surveys. Other duties included landscape maintenance and water quality monitoring.

**DECLARATION OF
Gabriel Roark**

I, Gabriel Roark, declare as follows:

1. I am employed by the California Energy Commission as a Senior Environmental Planner 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Cultural and Tribal Cultural Resources**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

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
-

**DECLARATION OF
Garry Maurath, Ph.D., P.G., CHG.**

I, Garry Maurath, declare as follows:

1. I am employed by the California Energy Commission as an Engineering Geologist 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Geology/Soils** and **Minerals**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California

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

Experience Summary

Dr. Maurath has 40+ 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*, scheduled to be published in November 2019.

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.

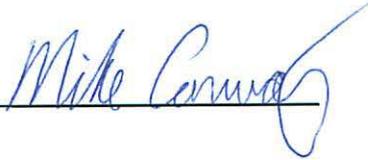
**DECLARATION OF
Mike Conway**

I, Mike Conway, declare as follows:

1. I am employed by the California Energy Commission as an Engineering Geologist 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Hydrology and Water Quality** and **Wildfire**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California

Resume for Mike Conway

Education: Master of Science in Geology, California State University, Sacramento, August 2012
Bachelor of Science in Geology, University of California, Davis, August 2003

Certifications: California Professional Geologist (PG), no. 9107
California Certified Hydrogeologist (CHG), no. 1024
Certified Professional in Erosion and Sediment Control (CPESC)
Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) and Practitioner (QSP)
Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

Experience: *Engineering Geologist: California Energy Commission, Sacramento, CA* **2009-Present**

- Serve as an expert witness in water resources and technical analyses for power plant siting cases
- Prepare expert testimony in subject areas of hydrogeology, soil erosion, surface water flow
- Lead technical reviewer for Yucca Mountain Waste Repository Environmental Impact Statement
- Prepare expert analyses of state law, ordinances, regulations, and standards applicable to water use
- Perform onsite evaluations of soil and water resource impacts pre- and post-project
- Construct hydraulic and hydrogeologic models (MODFLOW, GIS, WMS) to evaluate resource impacts

Environmental Scientist: Central Valley Water Board, Rancho Cordova, CA **2009**

- Wrote municipal storm water permits for Phase I communities in the Central Valley
- Reviewed storm water annual reports for Phase I and II municipalities
- Conducted audits of industrial sites for compliance with storm water permits
- Conducted audits of municipalities for compliance with municipal permits
- Represented Water Board in large technical workshops and other public forums

Environmental Consultant: Wood Rodgers, Inc., Sacramento, CA **2006-2009**

- Consulted clients on how to comply with Federal, State and local storm water quality regulations
- Helped public and private sector clients gain State Water Resources Control Board (SWRCB) permit coverage under Large and Small MS4 General Permits, NPDES Permits, CWA Section 401 Permits
- Consulted clients on Army Corps of Engineers, 404 Permitting
- Developed a storm water quality manual for Yolo County
- Prepared Caltrans environmental documentation and design for all project phases
- Drafted water pollution control exhibits using both AutoCAD and MicroStation
- Prepared Caltrans Storm Water Data Reports including cost estimates
- Designed landscaping plans for Caltrans' Modesto Ramp Rehabilitation Project
- Prepared Spill Prevention Control and Countermeasure (SPCC) plans

Storm Water Quality Consultant: Envirosafety Services, Elk Grove, CA **2004-2006**

- Wrote site specific SWPPPs to include guidance specific to city, county, and geographical constraints
- Designed exhibits using AutoCAD
- Conducted inspections at construction sites throughout the Central Valley for (SWPPP) compliance
- Resolved storm water compliance issues in cooperation with site superintendents and inspectors

Post-Graduate Researcher: Dept. of Land, Air, and Water Resources, U.C. Davis, CA **2003**

- Studied the affect of irrigation practices on wetland ecology and water quality
- Independently organized monthly analyses and data processing of selenium contaminated invertebrate, algae, and water samples from the Tulare Lake Drainage District
- Managed concentrated acids, carcinogenic solutions, and final fluorescence measurements
- Compiled research data and presented findings to a team of eight colleagues

**DECLARATION OF
Abdel-Karim Abulaban, P.E.**

I, Abdel-Karim Abulaban, declare as follows:

1. I am employed by the California Energy Commission as an Associate Civil 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Utilities/Service Systems**, and **Noise**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

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.

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

Thesis Title: Developing Intensity-Duration-Frequency Curves for Irbid Region.

B.S. Civil Engineering, Yarmouk University, Irbid, Jordan (*water resources stream*).

Senior Project: Design of Water Supply and Sewer Systems for the Northwestern Part of Irbid City (*population 100,000*).

Registration:

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

Registered as a Qualified SWPPP Developer and Practitioner (QSD/QSP), California

Stormwater Quality Association (CASQA) - Cert. # 1160.

Experience - Professional

June 2010-Present:

Associate Civil Engineer

CA Energy Commission,
Sacramento, CA, USA.

- ❖ Reviewing and evaluating the construction, operation, and maintenance of energy facilities and power plants for water supply, wastewater disposal, waste, water quality, and stormwater to assess the potential impacts to human health and the environment.
- ❖ 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.
- ❖ Responding to soils or water resources issues that may arise regarding power plant operations.
- ❖ 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 occurred.
- ❖ Analysis of one of the largest solar projects in the world for environmental impacts on soil and water resources. This project is designed to generate 500 megawatts using solar energy to generate steam that runs a turbine to generate electricity.
- ❖ Analysis of another solar project, also one of the largest projects in the world, that uses photovoltaic (PV) technology and is designed to generate 1000 megawatts.
- ❖ Currently analyzing a cutting-edge project that proposes to minimize the green house impact of the project by injecting the generated CO₂ gas underground for long term sequestration. The CO₂ would be injected to depths of 5000 ft. or more below ground surface. This project is the first of its kind in the USA and would set the stage for other projects to store CO₂ in geologic formations to reduce green house gas emissions.

Dec. 2006-May 2010:

Water Resources Engineer

CA Dept. Water Resources,

- ❖ In charge of hydraulic modeling and sediment transport for the San Joaquin River restoration project.
- ❖ Performed 1- and 2-D hydraulic analysis to support restoration

Fresno, CA, USA.	of the San Joaquin River for the purpose of improving spawning/rearing habitat, enhancing floodplain connectivity, and improving riparian corridor.
<u>Dec. 2001-Dec. 2006:</u> Retained Hydrologist J.L. Nieber & Associates, Hydrologic Consultants, Lindstrom, Minnesota, USA.	<ul style="list-style-type: none"> ❖ Performed hydrologic analysis and assessment of environmental impact of contamination incidents on ground water resources, as well as design of remediation plans. ❖ Contaminants analyzed included hydro-carbons, chlorinated solvents, as well as agrichemicals.
<u>Dec. 90 – Dec. 93:</u> Retained Hydrologist. BAUMGARTNER ENVIRONICS, INC, Olivia, Minnesota, USA.	<ul style="list-style-type: none"> ❖ Performed assessment of the environmental impact of contamination incidents on groundwater resources, and design of action plans.

Experience - Teaching

<u>Sep. 2003-Sep. 2005:</u> Assistant Professor, Hashemite University, Zarqa, Jordan.	<p>Taught the following courses:</p> <ul style="list-style-type: none"> ❖ Water and Wastewater Treatment Methods (Senior) – 1 semester ❖ Wastewater Engineering (Senior level) – 2 semesters ❖ Statics - 3 semesters ❖ Engineering Drawing - 4 semesters ❖ Visual Communication - 4 semesters
<u>June – August, 96, 97, 98, 2000:</u> Army High Performance Computing Research Center, Minneapolis, Minnesota.	<ul style="list-style-type: none"> ❖ The Summer Institute is a summer course offered to promising upper class students from member institutions. The summer course included a ground water flow and transport group that normally had about 4 students from different backgrounds. ❖ Taught and helped teach the Summer Institute course in hydrology and transport in porous media. ❖ Was part of the team that trained the students to use a particle tracking solute transport code which I developed. ❖ Also trained the group to use the DoD's Ground Water Modeling System, GMS. ❖ In the summer of 2000 I was fully in charge of the whole group. ❖ More information about the projects can be on the Summer Institute web site at: http://www.arc.umn.edu/education/SummerInst/
<u>August, 1997:</u> Short course for practitioners, University of Minnesota, Minneapolis, Minnesota, USA.	<ul style="list-style-type: none"> ❖ 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.
<u>Mar. 88 - Dec. 92:</u> Teaching Assistant, Dept. of Civil Engineering, University of Minnesota, Minneapolis, Minnesota.	<ul style="list-style-type: none"> ❖ Teaching assistant for the senior courses of Hydrology and Hydrologic Design, and Water Resources Engineering.

**DECLARATION OF
Ellen LeFevre**

I, Ellen LeFevre, declare as follows:

1. I am employed by the California Energy Commission as a Planner II 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Population/Housing, Public Services, Recreation, and Environmental Justice**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: *Ellen LeFevre*

At: Sacramento, California

Ellen LeFevre

(916) 651-2907

Ellen.lefevre@energy.ca.gov

Professional Experience:

Planner II

California Energy Commission, State of California

- Prepare socioeconomic, environmental justice, land use, and transportation assessments for proposed Applications of Certifications, Small Power Plant Exemptions, and transmission projects.
- Evaluate the licensee's compliance with conditions of certification for power plant facilities.
- Prepare written testimony for multiple energy projects

Planner I

California Energy Commission, State of California

- Evaluate and analyze environmental and socioeconomic effects of proposed energy facilities to ensure the requirements of the Warren-Alquist Act and California Environmental Quality Act are satisfied.
- Prepare socioeconomic, environmental justice, and land use assessments for proposed and existing energy facility sites.
- Evaluate the licensee's compliance with conditions of certification for power plant facilities.
- Prepare written testimony for multiple energy projects

Education:

Sacramento State

Degree: Bachelor of Science in Geology with minor in Anthropology

American River College

Degree: Associate in Science in Mathematics with emphasis in General Science

DECLARATION OF
Lisa Worrall

I, Lisa Worrall, declare as follows:

1. I am employed by the California Energy Commission as a Senior Environmental Planner 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 staff testimony for the Sequoia Data Center Initial Study in the technical area(s) of **Mandatory Findings**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: _____



At: Sacramento, California

LISA WORRALL

916-654-4545 ~ lisa.worrall@energy.ca.gov

Summary

- Seasoned environmental analyst with experience navigating through projects with varying levels of complexity while under budgetary pressure and very demanding schedules.
- Adept at making complex projects and concepts clear and easy to understand.
- Testified as a subject-matter expert in Socioeconomics, Land Use, and Environmental Justice subject areas in power plant certification proceedings.
- Project manager for discretionary projects subject to the California Environmental Quality Act.

Employment Experience

California Energy Commission
Senior Environmental Planner

Sacramento, California
February 2020 to Present

- Project manager for discretionary projects subject to the California Environmental Quality Act in addition to the duties performed as Planner II.

Planner II

January 2010 to February 2020

- Manage very complex energy facility projects from the preparation of the technical sections to the publication of the environmental document and participation in hearing proceedings.
- Bring a wide array of technical staff together to solve problems as soon as they arise.
- Review technical sections, ensuring clarity, consistency, and accuracy.
- Ensure project quality control while managing project scheduling.
- Prepare an independent analysis of environmental impacts from electric facilities as a deep subject matter expert in the technical areas of agriculture/forestry, land use and planning, public services, recreation, transportation, and environmental justice (disadvantaged communities).
- Contribute technical analysis to the alternatives analysis section in environmental documents.
- Develop mitigation measures for energy facility projects.
- Evaluate projects in accordance with the California Environmental Quality Act (CEQA), Warren Alquist Act, the California Energy Commission siting regulations, and federal, state and local laws, ordinances, regulations, and standards.
- Review information provided by the project applicant and research other resources to assess the environmental effects of energy facility proposals.
- Testify in hearings during project license proceedings as a subject matter expert in addition to presenting during project workshops for the public.
- Contribute deep subject matter expertise to policy and planning documents.
- Mentor new staff and collaborate with colleagues with a variety of technical expertise.
- Consistently and routinely go above and beyond what is asked of me as supported by the four awards I received for superior accomplishment.
- Selected as part of a project development team tasked with improving existing and creating new procedures that promote the division.

Sacramento County Planning and Environmental Review Sacramento, California
Associate Environmental Analyst April, 2006 – May, 2009

- Prepared a variety of environmental documents in compliance with CEQA, National Environmental Policy Act (NEPA) and other federal, state, and local LORS.
- Conducted project site assessments, reviewed engineering plans, and researched and interpreted scientific data for project impact analysis.
- Managed multiple public works and private development projects with a variety of environmental concerns and overlapping deadlines.
- Maintained effective relationships with other Sacramento County departments, agencies, and service providers to ensure comments and recommended conditions of project approval were obtained and any associated environmental impacts assessed.

Analytical Environmental Services Sacramento, California
Associate April, 2004 – October, 2005

- Interpreted highly technical traffic impact studies, utilizing the information to develop a traffic impact assessment chapter for use in a variety of environmental documents complying with CEQA, NEPA, and county and city transportation policies and codes.
- Managed the preparation of traffic studies, including developing the scope of study, securing the contract, and reviewing the work product.
- Managed multiple private development projects simultaneously under tight deadlines. Clients included Native American tribes and cities.
- Coordinated with state, county and city officials in the development of traffic study methodology, parameters and assumptions for proposed projects.
- Worked closely with transportation engineers to understand the complexities of each project's specific traffic impacts.

California Department of Transportation (Caltrans) Fresno, California
Associate Environmental Planner March, 2003 – March, 2004
Environmental Planner August, 2000 – March, 2003

- Prepared all levels of environmental documentation for transportation projects in compliance with CEQA and NEPA.
- Coordinated and interpreted environmental technical studies for incorporation into the environmental document and for explanation to other team members, agencies, and the public.
- Managed and represented environmental concerns with other functional units.
- Led and participated in public outreach events.
- Coordinated project development with other Caltrans departments, agencies and the public.

Education

California State University, Northridge May, 2000
Bachelor of Arts in Geography

**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 for the Sequoia Data Center Initial Study in the technical area(s) of **Aesthetics, Agriculture/Forestry, Environmental Justice, Land Use, Mandatory Findings, Population/Housing, Public Services, Recreation, and Transportation**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

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, socioeconomics, 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.

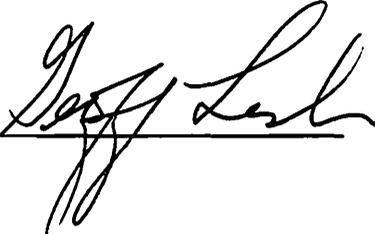
**DECLARATION OF
Geoff Lesh**

I, Geoff Lesh, declare as follows:

1. I am employed by the California Energy Commission as the Engineering Office Manager 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 for the Sequoia Data Center Initial Study in the technical area(s) of **Energy/Energy Resources** and **Hazards/Hazardous Materials**. This testimony reflects my independent analysis of the Application for Small Power Plant Exemption and related materials, 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: March 13, 2020

Signed: 

At: Sacramento, California

Geoffrey Lesh, PE

WORK HISTORY

California Energy Commission Senior Mechanical Engineer 2002 - Current

- Analyze siting permit applications for gas-fired and solar-thermal power plants in the technical areas of hazardous materials management, fire safety, security, and worker safety plans
- Provide written and oral expert witness testimony at commission hearings on power plant fire protection plans, risk assessments, and adequacy of local fire departments
- Recommend mitigations as needed
- Inspect power plants during construction and operational phases
- Investigate accident, fire, and hazardous materials incidents at power plants

Self-Employed Independent Investor 2000 - 2002

- Wrote market analysis computer software

Read-Rite Corp Wafer Engineering Manager 1994 - 2000

- Designed and developed wafer manufacturing processes for computer data storage systems. Managed team of engineers and technicians responsible for developing wet and dry chemical processes for manufacturing, including process and safety documentation
- Managed process and equipment selection for manufacturing processes
- Processes included vacuum processed metals and ceramics, grinding-polishing, plating, etching, encapsulation, process troubleshooting, and SPC reporting

Dastek Corp (Komag Joint Venture Start-up) Wafer Engineering Manager 1992 - 1994

- Developed wafer processes for new-technology recording head for hard disk drives
- Managed team of engineers and technicians
- This position included start-up of wafer fab, including line layout, purchase, installation, and startup of new process equipment, etc.

Komag, Inc Alloy Development Manager 1989 - 1992

- Developed new vacuum-deposited recording alloys
- Responsible for planning and carrying-out tests, designing experiments, analyzing results, managing test lab conducting materials characterizations
- Extensive process modeling, experiment design and data analysis

Verbatim Corp (Kodak) Process Development Manager 1983 - 1989

- Mechanical/materials engineering for computer disk manufacturing, including product, process, and equipment including metal-ceramic-plastic processes for optical disk development
- Production processes included metal plating, metal evaporation, reactive sputtering, laser-based photolithography, injection molding
- Steering Committee Member, Center for Magnetic Recording Research, UC San Diego
- Steering Committee Member, Institute for Information Storage Technology, Santa Clara University

IBM Corp Mechanical/Process Engineer 1977 - 1983

- Product development for photocopiers, semiconductors, and computer data tape-storage systems

EDUCATION

Stanford University, Master of Science Degree	Materials Science and Engineering
UC-Berkeley, Bachelor of Science Degree (Double Major)	Mechanical Engineering, Materials Science and Engineering
University of Santa Clara, Graduate Certificate	Magnetic Recording Engineering

PROFESSIONAL LICENSES and CERTIFICATIONS

Registered Professional Engineer, California (PE)	Mechanical #M32576 Fire Protection #FP1827 Metallurgical #MT1940
Certified Safety Professional (CSP)	Board of Certified Safety Professionals
Certified Fire Protection Specialist (CFPS)	Certified Fire Protection Specialist Board of NFPA
Certified Fire and Explosion Investigator (CFEI)	Board of National Association of Fire Investigators
OSHA 40-hr HAZWOPER Hazardous Materials Incident Training	

PROFESSIONAL ASSOCIATIONS

- American Society of Safety Engineers – Professional Member
- Society of Fire Protection Engineers – Professional Member
- National Fire Protection Association – Member
- National Association of Fire Investigators – Member

PUBLICATIONS

All-Solid Lithium Electrodes with Mixed-Conductor Matrix, J. Electrochem. Soc. 128, 725 (1981).
Proc. Symp. on Lithium Batteries, H.V. Venkatesetty, Ed., Electrochem Soc (1981), p. 467.

PATENTS

Method of Preparing Thermo-Magneto-Optic Recording Elements, US Patent# 4,892,634, (assigned to Eastman Kodak Co.)