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State of California

Energy Resources

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In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 APPLICANT'S OPENING TESTIMONY

Applicant hereby submits its Opening Testimony in connection with the upcoming evidentiary hearings for the Puente Power Project (Project) per the Hearing Officer Memo re: Updated Proceeding Dates and Deadlines and Committee Requests for Information, issued on January 4, 2017 (TN #: 215157). Applicant's Opening Testimony is comprised of a series of declarations made by subject matter experts who have conducted analysis related to various aspects of the Project. Table A lists Applicant's Opening Testimony Declarants, the company they are employed by, and the topic area or areas covered by their declaration.

Each declaration sets forth the declarant's supporting qualifications and includes their current curriculum vitae as Attachment A. The materials setting forth the declarant's analysis of the Project are listed and assigned an Applicant's Exhibit Number. The declaration establishes a foundation for the introduction of the identified Applicant's Exhibits into the evidentiary record. Other Project related materials that the declarant may have relied upon in formulating their opinions are also identified. Each declaration contains a brief summary of the

declarant's analysis, and their ultimate opinions regarding the Project with respect to their specific area of expertise.

Table A

Applicant's Opening Testimony Declarants

No.	Declarant	Company	Topic Area(s)
1.	Nik Carlson	AECOM	Socioeconomics and Environmental Justice
2.	Noel Casil	AECOM	Traffic and Transportation
3.	Anne Connell	AECOM	Various Topics, Water Resources
4.	Mark Hale	AECOM	Cultural Resources – Archeology
5.	Jeremy Hollins	AECOM	Cultural Resources – Historical Resources
6.	Louise Kling	AECOM	Visual Resources
7.	Julie Love	AECOM	Biology
8.	Vince Menta	NRG	Various Topics
9.	Phil Mineart	AECOM	Water Resources
10.	Tim Murphy	AECOM	Land Use and Agriculture
11.	George Piantka	NRG	Various Topics
12.	John Qoyawayma	AECOM	Visual Resources
13.	Gary Rubenstein	Sierra Research	Air Quality and Public Health
14.	Erik Skov	AECOM	Geologic Hazards & Resources and Soils
15.	Joe Stewart	AECOM	Paleontological Resources
16.	Mark Storm	AECOM	Noise
17.	Tricia Winterbauer	AECOM	Hazardous Materials and Waste Management
18.	Zenis Walley	AECOM	Worker Safety and Fire Protection

DATED: January 18, 2017

Respectfully submitted,

/s/ Michael J. Carroll

Michael J. Carroll
LATHAM & WATKINS LLP
Counsel to Applicant

1. Nik Carlson

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In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF NIK CARLSON REGARDING SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

I, Nik Carlson, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I earned a Master's Degree in Public Policy from John F. Kennedy School of Government, Harvard University in 1992 and a Masters of Arts in Philosophy, Politics and Economics from Oxford University in 1988. I have over 24 years of experience regarding the evaluation of socioeconomic and environmental justice impacts of development. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1016: Application for Certification Section 4.10, Socioeconomics (CEC TN #204219-17);

- Applicant's Exhibit No. 1069: Socioeconomics: Revised Environmental Justice Review (CEC TN #207111); and
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683).

I hereby sponsor this declaration (Applicant's Exhibit No. 1112) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.5, Environmental Justice (CEC TN #214712); and
- FSA, Part 1, Section 4.10, Socioeconomics (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Socioeconomics*

i) During Project construction, the anticipated purchase of materials and supplies and payroll for construction workers will have a beneficial temporary impact in the Ventura County and Los Angeles County areas. No significant adverse impacts will result related to the local economy and employment. The Project does not involve displacing a large number of people, or disrupting or dividing an established community. Project construction will not cause any substantial permanent population increase or changes in concentration of population; therefore, construction of the Project will not increase the demand

for housing in the Project area.

ii) During Project operations, onsite staffing will remain similar to existing levels and impacts related to employment, population and housing will be less than significant. Impacts to public utilities and services will be less than significant because the Project can be adequately serviced by existing utility facilities or services.

b. *Environmental Justice*. The environmental justice impact analysis evaluates the Project's direct, indirect, and cumulative impacts on the environmental justice population living within a six-mile radius of the Project site, and whether any impacts would disproportionately affect the environmental justice population. Because the Project will not result in any unmitigated significant adverse environmental impacts, there is no disproportionate impact on a disadvantaged community.

c. *Mitigation/Conditions of Certification*. I concur with the proposed Condition of Certification pertaining to socioeconomics contained in CEC FSA Part 1, Section 4.10, Socioeconomics.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits, it is my expert opinion that, with implementation of proposed Condition of Certification SOCIO-1 contained in the Final Staff Assessment (CEC TN #214712), the Project will not result in any significant adverse socioeconomic impacts and will produce economic benefits to the city of Oxnard and Ventura and Los Angeles counties. Furthermore, while there are environmental justice populations located within the Project's potential area of effects, with implementation of the Conditions of Certification contained in the Final Staff Assessment (CEC TN #214712 and #214713), including those modifications proposed by Applicant in Applicant's Exhibit No. 1098 (CEC TN #215352), the Project will not result in any unmitigated significant environmental impacts, and as a result there is no disproportionate impact on a disadvantaged community. Therefore, it is my expert opinion that the Project will not result in any significant direct, indirect or cumulative environmental justice impacts. Finally, the Project will comply with all applicable laws, ordinances, regulations and standards pertaining to socioeconomics and environmental justice.

Executed on January 17, 2017, at Oakland, CA.

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

Nik Carlson

ATTACHMENT A

AECOM

Nik Carlson
Principal Economist

Professional History

06/2011 - Present, AECOM Principal Economist

Education

MA, Philosophy, Politics and Economics, University of Oxford, 1988
MPP, Public Policy, Harvard University - John F. Kennedy School of Government, 1992

Years of Experience

With AECOM: 5.5
With Other Firms: 19

Mr. Carlson has more than 24 years of experience working on an extensive variety of projects concerning natural resources, privatization, renewable energy, and transportation issues throughout the United States. As a resource economist, he has particular experience performing socio-economic and financial analyses. His experience includes benefit-cost, financial feasibility, economic, environmental justice and social impact analyses. Mr. Carlson has performed damage and water rights assessments (for both historical and future damages) and operational and regulatory evaluations. He has also provided evaluations of major infrastructure and facility development projects for numerous federal and state agencies including the Department of Justice, Department of Homeland Security, National Park Service, Bureau of Reclamation, Bureau of Land Management and Bureau of Indian Affairs.

Experience

National Park Service (NPS), Yosemite Valley Implementation Plan and Yosemite Valley Plan, Yosemite National Park, California. Task manager and principal socioeconomist for several major planning projects to address transportation, employee housing, and crowding issues within Yosemite Valley during the 1990s. Identified and evaluated socioeconomic impacts to park visitors and local communities according to NEPA guidelines for the initial Yosemite Valley plan and the revised Valley Implementation plan environmental impact statements. Developed an IMPLAN input-output model to estimate direct and secondary economic impacts to the local and regional economies, evaluated financial and operational impacts on all concession operations within the park, and performed environmental justice review.

National Park Service, Colorado Wild & Scenic River Comprehensive Management Plan & Environmental Impact Statement (EIS), Grand Canyon, Arizona. Directed the technical team that identified and evaluated the socioeconomic impacts to park visitors and local communities according to NEPA guidelines for the administrative draft EIS. An IMPLAN input-output economic model was developed to project the future direct and indirect spending and employment impacts on the region's economy. Evaluated the financial and operational impacts on the concession operations, including lodging, whitewater rafting, and helicopter-tours, and reviewed the potential environmental justice issues.

Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Responsibilities included identifying and quantifying potential socioeconomic impacts associated with the construction and operation of the proposed Puente Power Project in Oxnard, California, determining the applicable laws, ordnances, regulations, and standards governing the facility's socioeconomic impacts including employment, population, housing, service and fiscal impacts on city and county public agencies. Performed environmental justice analysis to identify minority and

low-income populations and evaluate potential for project-related environmental justice impacts.

City of Oroville, Lake Oroville Dam Relicensing Negotiations, Oroville, California. Key member of the legal team representing the City of Oroville in complex multi-stakeholder negotiations for the Federal Energy Regulatory Commission relicensing process. Evaluated the city's settlement options, advised on settlement terms and conditions, and participated directly in negotiating an innovative settlement between the California Department of Water Resources, state water contractors, and the local community.

Pajaro Valley Water District, Pajaro Valley Basin Management Plan 2000 Environmental Impact Report/Environmental Impact Statement, Watsonville, California. Performed economic and financial impact assessments of the agricultural impacts and land use changes associated with the development of a new regional water supply system in Pajaro Valley. Analysis included estimating the financial effects of proposed new water supply fees and quality improvements on current and future agricultural producers in the region. Determined future land use impacts and estimated future economic impacts to the region's farmers and overall economy. In subsequent related litigation, provided expert witness testimony in court on the financial and economic impacts on local farmers.

Department of Justice, Bureau of Indian Affairs and Native American Rights Fund, Native American Water Rights and Damages Litigations, Various Locations. Socioeconomist for several major economic analyses to support litigation claims nationwide as an environmental justice expert for the Department of Justice, the Bureau of Indian Affairs, the Native American Rights Fund, and numerous Native American tribes. Identified contestable damage claims, performed economic damage assessments for lost future economic benefits and historical agricultural and mineral profits, and advised on proposed settlement terms.

Rocky Boys Tribal Government and Native American Rights Fund, Rocky Boys Indian Reservation Water Rights and Damages Settlement, Hill County, Montana. Analyzed the economic impact that a proposed water rights settlement agreement and proposed water supply development would have on the tribe and local non-Indian farmers. Investigated the reservation and region's past irrigated agricultural production (irrigated acreage, crops, yields, prices and production costs). Estimated historic and future economic damage claims for the tribe based on lost agricultural, livestock, and other economic uses on reservation lands. Developed input-output models for Hill County and State of Montana to quantify the proposed settlement's economic impacts.

Bureau of Indian Affairs (BIA), Cloverdale Rancheria Fee-to-Trust Environmental Impact Statement, Sonoma County, California. Performed extensive socioeconomic and fiscal analysis for BIA and on behalf of Cloverdale Rancheria for the Fee-to-Trust and resort casino development of a 79-acre site. The proposal included an approximately 595,000-square-foot facility with a hotel, spa, restaurants, and gaming. Performed the socioeconomic, fiscal, and environmental justice analyses of potential impacts on the local residents, City of Cloverdale, and Sonoma County according to NEPA guidelines.

Various Clients, East Bay Tribes On-Call Peer Review, Various Locations, California. Socioeconomist responsible for conducting peer-reviewed socioeconomic and environmental justice analyses for numerous proposed major Indian casino developments in the Bay Area and Central Valley. Past projects included proposed casino developments in Richmond (Point Molate and Sugarbowl casinos), San Pablo (San Pablo Lytton Casino), Marysville (Enterprise Rancheria Resort), and Amador County (Lone Band Casino). Assessed the casinos' population, employment, and community service impacts as well as the potential social impacts of problem gambling and effects on local health services.

Monterey County Water Resources Agency, Monterey Bay Regional Desalination Environmental Assessment, Monterey County, California. Performed socioeconomic and environmental justice analysis to assess the potential impacts of the proposed desalination project. Projected the average annual water cost impacts to the region's water customers and future operating and maintenance costs. Determined the distribution and reasonableness of the cost increases to determine the effects on local minority and low-income residents.

California Public Utilities Commission, Electric Transmission Projects On-Call Contract for CEQA and Environmental Compliance Services, Various Locations, California. Performed agricultural and land use analyses to evaluate the potential for adverse project impacts on local land owners and communities. The contract provided on-call CEQA and CEQA/NEPA document preparation support including technical review of applicant-prepared applications and proponent's environmental assessments; preparation of initial studies, mitigated negative declarations, environmental impact reports, and joint CEQA/NEPA documents.

California Public Utilities Commission, San Joaquin Cross Valley Loop Environmental Impact Report, Tulare County, California. Performed agricultural and land use analyses to evaluate the potential for adverse impacts on local farmers, land owners, and communities for proposed construction of a new 19-mile transmission line.

Contra Costa County, Vasco Wind Repowering Project Environmental Impact Report, Contra Costa County, California. Evaluated the potential impacts on local agricultural use and forest resources of replacing more than 400 aging wind turbines with up to 54 new, more efficient turbines with a generating capacity of 80 megawatts of electricity in the county's Altamont Pass wind resource area. The project also would include new turbine pads and foundations, a new or upgraded substation, a new electrical collection and distribution system, road improvements, and the restoration of decommissioned turbine foundations and pads and existing roads that would no longer be required.

US Bureau of Land Management (BLM), NextEra Genesis Solar Energy Project Application, Palm Springs, California. Provided NEPA regulatory review for the California South Coast BLM. Reviewed the socioeconomic and environmental justice analyses that accompanied the permit applications and identified major inadequacies in the NEPA analysis. Performed supplementary analysis to ensure the document's NEPA adequacy, including analysis of the workforce availability and IMPLAN economic modeling.

US Bureau of Land Management (BLM), Desert Sunlight Solar Project Support Services, Desert Center, California. Performed peer review to evaluate NEPA adequacy of the socioeconomic analysis in EIS for a proposed 550-megawatt photovoltaic generating facility on federal lands. The project required a plan amendment and right-of-way permit from the BLM. Performed the supplemental analysis for the final EIS.

US Bureau of Land Management, Solar Millennium Blythe and Palen Solar Power Projects, Blythe and Palen, California. Performed a peer review of key compliance documents and identified major NEPA inadequacies in the socioeconomics and environmental justice analyses. Performed supplementary analysis to ensure NEPA adequacy. The additional analysis included more comprehensive characterization of the environmental setting, analysis of the workforce availability, and IMPLAN economic modeling for the project.

Contra Costa Water District, CALFED Los Vaqueros Reservoir Expansion Studies Environmental Impact Report/Environmental Impact Statement, Contra Costa County, California. Performed socioeconomic, economic, and environmental justice impact analysis for operation and construction of a proposed $1.5B expansion of the existing dam and conveyance system.

Confidential Client, Urban Decay Assessment, Imperial County, California. Task leader and principal economist for leading the economics team in completion of an urban decay assessment for a proposed upscale discount retail shopping area at the Mexico border. The urban decay assessment included market, leakage, and sales absorption analysis to estimate the proportion of current cross border visitor sales within Imperial County as well as projections of unmet demand and sales potential from Mexicali residents.

National Park Service (NPS), Furnace Creek Water Management Plan Environmental Impact Statement (EIS), Death Valley National Park, California. Conducted a socioeconomic analysis that evaluated the plan alternatives' expected impacts on visitors, concessions, and area's economy for the proposed reconstruction of the water collection system in Furnace Creek. Analysis assisted the NPS in developing a range of alternatives that met human use needs while protecting the unique natural resource values in the area.

City of Oakland, Kaiser Center Mixed-Use Environmental Impact Report (EIR), Oakland, California. Technical analyst for a proposal to replace the Kaiser Center at 20th and Webster Streets in Oakland’s existing obsolete low rise retail/office uses with a 2-tower office complex consisting of 1.35 million square feet and approximately 22,000 square feet of street front retail. Prepared the population, jobs, and housing impact analysis to evaluate the project’s potential to add new residents and housing demand within Oakland, Alameda County, and East Bay region.

Tuolumne County, Tuolumne County Law and Justice Center Environmental Impact Report (EIR), Tuolumne, California. Performed an urban decay analysis and evaluated the population and housing impacts associated with the proposed relocation of the county’s administrative, law enforcement, and detention facilities from downtown Sonora.

City of Stockton, South Stockton Wal-Mart Supercenter Urban Decay Analysis, Stockton, California. Task leader and principal economist responsible for leading the economics team that identified and evaluated the potential socioeconomic and land use impacts from proposed rezoning for a new Wal-Mart supercenter development in accordance with California Environmental Quality Act guidelines. Inventoried and assessed local competing businesses and projected effects on the local commercial real estate market. Performed market and leakage analysis of the proposed new retail, determined net fiscal impacts to the city, and developed an IMPLAN input-output model to estimate direct and secondary economic impacts to the local economy.

California Department of Parks and Recreation, Asilomar State Beach & Conference Grounds General Plan & Environmental Impact Report, Monterey County, Monterey County, California. Developed the general plan and EIR in accordance with California Environmental Quality Act requirements. The general plan modified the 85-year-old conference center, a registered State Historic Landmark and National Register–listed Historic District, to improve parking and traffic issues and increase accessibility for people with disabilities. The environmental analysis identified the impacts of the general plan alternatives on key environmental resources, including the conference center business and operations, historic buildings, biological resources, cultural resources, and recreation.

San Francisco Public Utilities Commission, San Francisco Water System Improvement Program – Environmental Impact Report, San Francisco, California. Recreation and aesthetics analyst responsible for evaluating potential impacts of future water level and supply changes to the Tuolumne River proposed under the major regional system improvements to address aging facilities, earthquake susceptibility, and increased water quality requirements. Addressed impacts to both on-river visual resources and recreation (whitewater rafting, fishing, and boating) and along the river's route to hiker and camper experience.

City of Burlingame, Burlingame Grade Separation Community Impact Analysis, Burlingame, California. Task leader for an evaluation of options for a grade separation at the Broadway railroad crossing to accommodate Cal-Train electrification and future high-speed train use of the rail line. Evaluated the economic benefits of traffic safety and circulation, reduced congestion, operational efficiency, and environmental improvements, as well as business displacement and economic development effects.

2. Noel Casil

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In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF NOEL CASIL REGARDING TRAFFIC AND TRANSPORTATION

I, Noel Casil, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor of Science in Civil Engineering from University of Santo Tomas in 1982. I have over 30 years of experience in the field of traffic engineering, highway engineering and transportation planning, including evaluating effects of new development on traffic and transportation systems. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1018: Application for Certification Section 4.12, Traffic and Transportation (CEC TN #204219-19);

- Applicant's Exhibit No. 1039: Application for Certification, Appendix K Traffic and Transportation (CEC TN #204220-11);
- Applicant's Exhibit No. 1043: Responses to CEC Data Requests Set 1 (DRs 42-45) (CEC TN #205765);
- Applicant's Exhibit No. 1057: Responses to CEC Data Requests Set 1, 45-Day Extension (DR 45) (CEC TN #206215);
- Applicant's Exhibit No. 1062: Responses to CEC Data Requests Set 2 (DR 73) (CEC TN #206614);
- Applicant's Exhibit No. 1064: Puente Power Project (P3), Project Enhancement and Refinement – Demolition of Mandalay Generating Station Units 1 and 2 (CEC TN #206698);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.12) (CEC TN #213802); and
- Applicant's Exhibit No. 1094: Responses to CEC Data Requests Set 4 (DR 101) (CEC TN #214336).

I hereby sponsor this declaration (Applicant's Exhibit No. 1113) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following document:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.12, Traffic and Transportation (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Construction*

i. *Construction Trips*. Although the addition of Project construction traffic would change the peak morning level of service (LOS) at Harbor Boulevard and Gonzales Road from LOS C to LOS D, the increase in V/C ratio is only 0.008 (i.e., less than the impact threshold of 0.02), which would not be a significant impact based on the City of Oxnard's impact thresholds. Project construction traffic would change the peak afternoon LOS at the Harbor Boulevard and Mandalay Generating Station (MGS) entrance from LOS E to LOS F conditions and increase the approach delay by 23 seconds (i.e., greater than the impact threshold of 0.02), resulting in a short–term, significant impact per City of Oxnard criteria. However, because this impact would only affect traffic exiting the MGS driveway, the Applicant will accept the consequences of incremental delay and wait time to exit. In addition, TRANS-2 requires implementation of a Traffic Control Plan that requires signage along Harbor Boulevard warning drivers of construction traffic exiting the Project site.

ii. *Public Transportation*. Because there are no established public transit routes along Harbor Boulevard in the vicinity of the Project site, the additional traffic generated during the peak months of construction is not expected to have any significant impacts on public transportation.

iii. *Bicycle and Pedestrian Circulation*. A Class II bicycle route runs along Harbor Boulevard adjacent to and fronting the Project site. However, based on the infrequently observed bike activities and negligible pedestrian traffic along this segment of Harbor Boulevard, no significant impacts to pedestrian or bicycle circulation would result from the additional traffic during the peak months of construction.

iv. *Parking Facilities*. Adequate onsite parking will be provided, and parking outside of the MGS property will not be required. Therefore, the

construction parking during the peak construction months would not have any significant impacts on surrounding parking facilities or roadway segments.

b. *Operational Trips*. Because there will be no significant change in onsite staffing and only a very small increase in operation-related trips, Project operations will not change the LOS of the roads and intersections in the study area. Therefore, no significant traffic impacts during Project operations are anticipated. In addition, traffic from Project operations will not impede or obstruct existing emergency access.

c. *Mitigation/Conditions of Certification*. I concur with the proposed Conditions of Certification pertaining to traffic and transportation resources contained in CEC FSA Part 1, Section 4.12, Traffic and Transportation.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification TRANS-1 through TRANS-7 contained in the Final Staff Assessment (CEC TN #214712), the Project will not result in any significant direct, indirect or cumulative impacts with respect to traffic and transportation and will comply with all applicable laws, ordinances, regulations and standards pertaining to traffic and transportation.

Executed on January 17, 2017, at Orange, CA.

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

Noel Casil

ATTACHMENT A

Noel Casil, PE, TE, PTOE
Senior Transportation Engineer

Professional History

11/2000 - Present, AECOM Senior Transportation Engineer

Education

BS Civil Engineering, University of Santo Tomas,1982

Registrations

Professional Civil Engineer, CA, C65179
Professional Traffic Engineer, CA TR2391
Professional Traffic Operations Engineer, ITE, 2143

Years of Experience

With AECOM: 15
With Other Firms: 19

Professional Affiliations

Institute of Transportation Engineers
Society of American Military Engineers
Orange County Traffic Engineers Council
Transportation Research Board (TRB)
- AHB40 - Highway Capacity and Quality of Service Committee, User Liaison Group, Research Subcommittee, Interchange and Ramp Terminals Subcommittee and Active Traffic Management Task Force (Member)

Training

Community Emergency Response Team
HCM FREEVAL Computational Engine
Intersection Control Evaluation (ICE)
FDOT Interchange Access Request

Certifications

Certified Project Manager, AECOM

Mr. Casil has over 30 years of civil and transportation engineering experience in California and overseas. He is actively involved in the field of traffic engineering, highway engineering and transportation planning. He has performed responsible office and field engineering work including surveys, data collection, traffic signal timing utilizing PASSER II and TRANSYT 7-F, signal timing, fine tuning of 170 controllers, traffic signal/detection system installation, cost estimates, ramp metering installation inspection, and design of freeway surveillance. In addition, Mr. Casil has extensive experience in transportation planning projects including impact studies utilizing TRAFFIX, Synchro, Vistro and HCM software. He has also served as traffic study task leader for projects ranging from stand-alone traffic studies to multi-discipline project study, design, regional and city planning and environmental CEQA/NEPA documentations. Mr. Casil has provided traffic and transportation consulting support on over 30 power generation, utilities and fuel industry projects throughout California and Nevada.

Experience

Transportation and Traffic Task Leader, Puente Power Project (P3), Oxnard, CA, NRG, 2014-Present: Technical Lead. Managed the data collection and preparation of the Traffic & Transportation section of the California Energy Commission (CEC) Application for Certification (AFC) for the proposed 262-megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included directing baseline traffic counts and predictive traffic analyses (involving construction and operation) to evaluate potential impacts and mitigation measures associated with the proposed project. The traffic impact analysis conducted for the proposed project evaluated all foreseeable phases of project development from existing conditions, project demolition, project construction and operations. The traffic impact analysis was conducted in compliance with City of Oxnard traffic analysis requirements and guidelines including compliance to air traffic regulations associated with the operations of the Oxnard Airport located near the site.

Transportation and Traffic Task Leader, Southern California Edison Tehachapi Renewables Transmission Project Proponent Environmental Assessment (PEA), Southern CA: Lead preparer of the Transportation and Traffic Section of SCE's Tehachapi Renewables Transmission Project (TRTP) PEA submitted to the California Public Utilities Commission (CPUC). The TRTP includes a series of new and upgraded high-voltage electric transmission lines (T/L) and substations to deliver electricity from new wind farms in eastern Kern County, California, to the Los Angeles Basin. The multi-segment and station project traversed over 50 city/jurisdictional control agencies requiring careful due diligence and impact assessment of the potential effects arising from the implementation of the project. The Transportation & Traffic section of the PEA described the

existing conditions of the transportation and traffic facilities related to the proposed TRTP. The proposed TRTP facilities were described in context to the regional and local transportation and traffic setting. The section also assessed the proposed project's potential to cause significant transportation and traffic impacts according to CEQA Appendix G guidelines during the construction and/or operations of the proposed TRTP. Mitigation measures are presented, as appropriate, to reduce any potentially significant impact related to the affected transportation and traffic facilities. In addition to the CEQA Appendix G guidelines, summaries of relevant federal and state laws and regulations were presented. The section also presented the responsible Congestion Management Agencies (CMAs) who have the authority to monitor and implement the CMA Congestion Management Program (CMP) to the local jurisdictions and unincorporated areas traversed by the TRTP linear segments or where transmission facilities are located.

Task Leader. Desert Quartzite Solar Project, Desert Quartzite, LLC. Riverside County, CA. Currently leading the preparation of a Traffic Impact Study and Transportation and Traffic Section of the Environmental Documentation for the Desert Quartzite Solar Project. The overall Project includes a solar generation facility, an on-site substation, and a generation-tie (gen-tie) line. The proposed Project is located in eastern Riverside County near Blythe, California. The proposed solar facility and the approximately 3-mile-long, 230- kilovolt (kV) gen-tie line interconnection to the existing Southern California Edison (SCE) Colorado River Substation (CRSS) are located primarily on lands administered by the U.S. Department of the Interior, Bureau of Land Management (BLM).

Task Leader. BrightSource Energy, Inc., Rio Mesa Solar Electric Generating Facility. Application for Certification (AFC), Riverside County, CA. Task leader for the preparation of the traffic and transportation section of the AFC document for submittal to the California Energy Commission (CEC) and U.S. Bureau of Land Management (BLM), including environmental analysis, cumulative traffic effects, mitigation measures and traffic impact discussion and evaluations. Proposed project encompasses approximately 5,750 acres of solar power facilities.

Task Leader. CPV Sentinel Energy Project, Competitive Power Ventures (CPV) Sentinel, LLC, Application for Certification (AFC), Riverside County, CA. Task leader for the preparation of the traffic and transportation section of the AFC document for submittal to the California Energy Commission (CEC). The $900M Sentinel Energy Project (SEP) is an 800 megawatt (MW) natural gas-powered electric generation facility located on a 37 acre parcel north of I-10 and east of Highway in North Palm Springs, CA.

Task Leader. Granite Wind Energy Project (FEIS/FEIR), BLM Barstow office. Lead preparer of the Transportation Systems and Facilities Section of Granite Wind Energy Project. Evaluated the potential risk of direct and indirect impacts affecting transportation systems and facilities with respect to six criteria that may result in potential impacts that could occur associated with reasonably foreseeable future Project Actions. The site of the Proposed Action is located on unincorporated land in the Mojave Desert, approximately 6 miles east of the Town of Apple Valley and five miles northwest of the unincorporated community of Lucerne Valley.

Task Leader, Calico Solar AFC, San Bernardino County, CA, Tessera Solar, 2008-2011: Solar One will be located in San Bernardino County, 35 miles east of Barstow, California, on public land managed by the BLM BFO. The traffic analysis prepared for the AFC traffic and transportation section evaluated various project access alternatives during construction and operations. One of the key transportation issues involves the need for a grade separated rail crossing across a busy train corridor.

Task Leader, Imperial Valley Solar (IVS) AFC, Imperial County, CA, Tessera Solar, 2008-2011: Task lead for the traffic analyses for the proposed projectto be located in Imperial County, 14 miles west of El Centro, California, on public land managed by the Bureau of Land Management (BLM), El Centro Field Office. .

Task Leader, Niland Generating Facility Project AFC, Imperial County, CA, Imperial Irrigation District, 2006-2008: Evaluated traffic impacts for the proposed project which was constructed under the California Energy Commission's (CEC) Small Power Plant Exemption (SPPE) AFC process. The project is located in the community of Niland in Imperial County and owned and operated by the Imperial Irrigation District (IID).

Task Leader, El Centro Generation Station Unit 3 Repowering Project AFC, Imperial County, CA, Imperial Irrigation District, 2006-2008: Prepared the Traffic & Transportation section of the CEC Application for Certification (AFC) for the construction and operation of the El Centro Generating Station (ECGS) Unit 3 Repowering Project. The project is owned and operated by the Imperial Irrigation District and will utilize the existing infrastructure and staffing at the ECGS. The Project consists of repowering Unit 3 with a GE Frame 7EA dry low NOx (DLN) combustion turbine generator (CTG) and heat recovery steam generator (HRSG) to supply steam to the existing steam turbine generator (STG).

Task Leader, Salton Sea Unit 6 AFC, Imperial County, CA, CalEnergy, 2001-2002: Preparation of the Traffic & Transportation section of an Application for Certification (AFC) for submittal to the California Energy Commission (CEC) for the construction and operation of a new power generation facility known as the CalEnergy Company, Inc. (CalEnergy) Salton Sea Unit 6 (SSU6) near Calipatria, California. The SSU6 is a proposed 180 megawatt (MW) geothermal steam turbine power plant.

Task Leader, Antelope Valley Solar Ranch 1, Los Angeles County, CA, NextLight, 2009: Evaluated traffic impacts associated with the proposed Project that consists of construction and operation of a 230-megawatt (MW) alternating current (AC) solar photovoltaic (PV) facility on 2,100 acres of primarily fallow agricultural land located in northern Los Angeles County along State Route 138 (SR-138) (West Avenue D). The Project includes a 230-kilovolt (kV) transmission line for interconnecting the electrical output of the Project to the regional transmission system. The proposed transmission line is approximately 3.5 miles long, and is planned to interconnect to SCE's planned Whirlwind Substation north of the Project site in southern Kern County.

Task Leader, Carizo Energy Solar Farm, San Luis Obispo County, CA, Ausra Inc., 2007: The project proponent, Ausra Inc. is proposing to construct a solar power generation site at Carissa Plains in San Luis Obispo County and west of Kern County. Key transportation challenges for the site

involve construction traffic movements through SR-58 and county roadways. A Transportation Mitigation Plan was developed in response to agency and community concerns during project construction.

Task Leader, San Joaquin 1 & 2, Fresno County, CA, Martifer Renewables Solar Thermal, 2008: The Project will be located in an unincorporated area of southwestern Fresno County east of the City of Coalinga. The Project is approximately 8 miles north of Kings County. Roadway access to the site will be from West Jayne Avenue, which runs adjacent to and parallel to the northern border of the site. Regional access to the site will be provided via Interstate 5 (I-5), about four miles east of the project driveway. Key traffic and transportation issues involve temporary effects of project construction traffic to adjacent land uses including a state penal facility and feedstock deliveries during the operations of the proposed project.

Task Leader, San Gabriel Generating Station Application for Certification, Rancho Cucamonga, CA, San Gabriel Generating Station LLC, 2006: San Gabriel Generating Station LLC is proposing to construct a nominal 698 megawatt combined cycle gas fired power plant within an existing Electric Generating Station owned by Reliant Energy in an Industrial zoned portion of the City of Rancho Cucamonga. The traffic analysis included the evaluation of construction and operational traffic impacts at the project study area located near the confluence of two major Southern California freeways. The project site located at the northeastern quadrant of the I-15 and I-10 Freeways.

Task Leader, Bighorn Generating Facility, Primm, Clark County, NV, Reliant Energy, 2001: The proposed Bighorn Electric Generating Station is located on a 120-acre site east of I-15 freeway on the eastern periphery of the Primm area in Clark County, Nevada. The project site is generally undeveloped and required site grading to build the proposed project. The proposed project will be accessed via an existing unimproved road that would be improved in conjunction with the project and would tie-in to the easterly extension of Wells Road. The traffic impact analysis was conducted in compliance with State of Nevada Department of transportation (DOT) and Regional Transportation Commission of Southern Nevada (RTC) traffic analysis procedures and guidelines.

Other Energy Sector Studies, Licensing and Support Services:

- Crimson Solar Power Project (Recurrent Energy LLC)
- Center Power Project AFC (Terra-Gen)
- Ruby Solar Project (Pacific Valley LLC)
- Bethel 10 Solar Hybrid Project (Bethel Energy LLC)
- Lost Hills Solar Project (NextLight)
- Tehachapi Renewables Transmission Project (SCE)
- Lompoc Wind Energy Facility (Acciona Wind Energy)
- Watson Cogen Expansion AFC (BP Alternative Energy)
- Larkspur Energy Center AFC Amendment (Wildflower Energy LLP)
- Otay Mesa Energy Center AFC (Calpine Corporation)
- Canyon Power Station AFC (SCPPA – City of Anaheim)
- Starwood Energy Center AFC (Starwood Energy Group)
- Rancho Santa Margarita Peaker (Wellhead Power Margarita LLC)
- Los Angeles Department of Water & Power (LADWP)
- Colton Energy Facility (City of Colton)

- Magnolia Power Project (SCPPA- City of Burbank)
- Roseville Energy Facility AFC (Enron)
- Tracy Peaker Plant AFC (GWF Energy LLC)
- Bullard Energy Center AFC (Bullard Energy Center LLC)
- Panoche Energy Center AFC (Panoche Energy Center, LLC)
- Pegasus Power Project AFC (Pegasus Power Partners, LLC)
- Kinder Morgan Carson Facility Expansion (Kinder Morgan)
- Bigwest Refinery Clean Fuels EIR (Flying J Corporation)
- Colton Phase II Expansion Project (Kinder Morgan)
- 7-11 Store and Gas Station Traffic Study (City of Vista)
- Luvs - Lost Hills Project Traffic Study (Pilot Corporation)

3. Anne Connell

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State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF ANNE CONNELL REGARDING WATER RESOURCES AND ENVIRONMENTAL REVIEW

I, Anne Connell, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project). I am the Project Manager responsible for managing the environmental review of the Project within AECOM and am duly authorized to make this declaration. In addition to being the Project Manager, I am also the lead technical expert regarding water resources.

2. I earned a Bachelor of Science degree in Hydrology from McGill University in 1979, and a Master of Science degree in Civil Engineering-Hydrology from Stanford University in 1980. I have over 20 years of experience conducting environmental review of development projects, with particular expertise related to water resources. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Exhibit No. 1001: Application for Certification (AFC) Table of Contents (CEC TN #204219-2);
- Exhibit No. 1002: AFC Data Adequacy Forms (CEC TN #204219-3);
- Exhibit No. 1006: AFC Section 4.0 Introduction, Environmental Information (CEC TN #204219-7);
- Exhibit No. 1021: AFC Section 4.15 Water Resources (excluding portions related to coastal hazards and risk of flooding) (CEC TN #204219-22);
- Exhibit No. 1023: AFC Section 5.0, Alternatives (CEC TN #204219-24);
- Exhibit No. 1024: AFC Section 6.0, Contributors (CEC TN #204219-25);
- Exhibit No. 1033: AFC Appendix G, Land Owners (CEC TN #204220-7);
- Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 25-29, 31-36, 40 and 46) (CEC TN #205765);
- Exhibit No. 1057: Applicant's Responses to CEC Data Requests, Set 1 (DR 46) (CEC TN #206215);
- Applicant Exhibit No. 1058: Federal Aviation Administration Determination of No Hazard to Air Navigation (preparation of application) (CEC TN #206297);
- Exhibit No. 1064: Project Enhancement and Refinement, Demolition of Mandalay Generating Station Units 1 and 2 (CEC TN #206698);
- Exhibit No. 1068: Applicant's Alternative Sites Summary (CEC TN #207096);
- Exhibit No. 1086: Response to Recommended Specific Provisions in August 26, 2016 Proposed Report (California Coastal Commission) (CEC TN #213624);
- Exhibit No. 1087: Comments on California Coastal Commission Report to California Energy Commission on AFC 15-AFC-01 - NRG Puente Power Project (CEC TN #213625);
- Exhibit No. 1088: Final NRG Comment Letter to California Coastal Commission re Agenda Item F10a, Sept. 9, 2016 (CEC TN #213626);
- Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683);

- Exhibit No. 1090: Puente Power Project, Project Enhancement – Outfall Removal and Beach Restoration (CEC TN #213802); and
- Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 82) (CEC TN #214336).

I hereby sponsor this declaration (Applicant's Exhibit No. 1101) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 3, Project Description (CEC TN #214712);
- FSA, Part 1, Section 4.2, Alternatives (CEC TN #214712); and
- FSA, Part 1, Section 4.11, Soil and Water Resources (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein, and in the other Applicant's Exhibits identified herein, are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Water Supply.* The Project will be a dry-cooled facility and has been designed to use a very small amount of water. The Project will use potable water from the City of Oxnard for construction water, process water and domestic water needs. The City's Urban Water Management Plan (UWMP) indicates that there are ample existing and forecasted supplies of water for the City to meet water demands through 2035. The use of potable water supplies is consistent with the CEC's 2003 Integrated Energy Policy Report and the State Water Resources Control Board Resolution 75-58 because alternative supplies will be environmentally

undesirable or economically unsound. The analysis demonstrates that the use of reclaimed water for the Project is not feasible. Moreover, Condition of Certification SOIL&WATER-5 places an annual limit on potable water use and requires that possible exceedances are addressed prior to reaching the maximum limit. Accordingly, the impact on potable water supply will be less than significant.

b. *Wastewater*. The Project will discharge process wastewater and stormwater to the existing retention basins and reuse that water to the extent possible. With the removal of the ocean outfall, the discharge of process wastewater and stormwater that is not reused will be directed to the Edison Canal. Discharge to the canal will be managed in compliance with the effluent monitoring, effluent limitations, and discharge specifications in the modified National Pollutant Discharge Elimination System (NPDES) permit (NPDES No. CA0001180) that will be obtained for the project in compliance with Condition of Certification SOIL&WATER-4. The NPDES permit incorporates the requirements of the LARWQCB Basin Plan and California Thermal Plan, which, together with other effluent limitations in the NPDES permit, will prevent adverse impacts to the canal. Sanitary wastewater will be discharged to the onsite septic system. The Conditions of Certification, implementation of BMPs, and compliance with Waste Discharge Requirements will reduce potential wastewater impacts during Project operations to a less-than-significant level.

c. *Groundwater*. Construction, operation, and maintenance of the Project will not rely on groundwater from below the site. During construction, impacts to groundwater quality will be less than significant with the incorporation of Project design measures and the Conditions of Certification. Impacts due to temporary dewatering activities during construction will be less than significant with the incorporation of Project design measures and Conditions of Certification. During operations, the site will be covered with pavement or crushed rock, thereby minimizing the potential for pollutants to percolate into the groundwater. In addition, BMPs, such as good housekeeping practices, proper handling of wastes, and spill prevention practices, will be implemented. The Conditions of Certification, Project design elements, implementation of BMPs, and compliance with Waste Discharge

Requirements will reduce potential groundwater quality impacts during Project operations to a less-than-significant level.

d. *Surface Water*. During construction, approximately 5.7 acres in the Mandalay Generating Station (MGS) property will be used for construction laydown, offices, and parking. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared prior to construction in accordance with the provisions of the General Construction Permit and the MGS' NPDES Permit Number CA0001180. With development of the SWPPP and implementation of the Conditions of Certification and BMPs, compliance with WDRs, and compliance with LORS, impacts to surface waters due to construction of the Project will be less than significant.

e. *Mitigation/Conditions of Certification*. I concur with the proposed Conditions of Certification pertaining to water resources contained in CEC FSA Part 1, Section 4.11, Soil & Water Resources.

7. It is my expert opinion that, with implementation of proposed Conditions of Certification SOIL&WATER-1 through SOIL&WATER-5 contained in the Final Staff Assessment (CEC TN #214712), the Project, as proposed, will not result in any significant direct, indirect or cumulative environmental impacts to water resources and will comply with all applicable laws, ordinances, regulations and standards pertaining to water resources.

Executed on January 18, 2017, at San Francisco, CA.

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

Anne Connell

ATTACHMENT A

Anne Connell
Project Manager-Water Resources Engineer

Professional History

08/1980 - Present, AECOM Civil-Water Resources Engineer and Project Manager

Education

MS, Civil Engineering, Stanford University, 1980
BSc, Science, McGill University, 1979

Years of Experience

With AECOM: 36
With Other Firms: 1

Registrations

Professional Engineer, California

Ms. Connell is an experienced project manager and civil engineer specializing in water quality and hydrology. With more than 30 years of experience, she has overseen a wide range of projects, including power plants, pipeline projects, airports, rail transportation, site development, and remediation. Ms. Connell has been responsible for environmental impact evaluations under both California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA), peer review of hydrologic analyses, permit applications, and assessment of alternatives. She has served as the project manager on several multi-discipline projects involving coordination with team members, subcontractors, clients, and regulatory agencies.

Experience

NRG Oxnard Energy Center LLC, Puente Power Project, Oxnard, California. Project manager for the preparation of an Application for Certification (AFC) for a proposed 262-megawatt generation facility. The new natural gas facility would include one GE 7HA.01 simple-cycle unit and would reuse and repurpose existing MGS infrastructure. In addition to project management, responsibilities included the preparation of the water resources section of the application. The AFC was submitted to the California Energy Commission in April 2015. The project is currently undergoing agency review. Certification is expected in 2017. Commercial operation is anticipated by June 2020.

Marsh Landing LLC, Marsh Landing Generating Station Application for Certification, Antioch, CA. Project Manager and water resources lead for the preparation of an Application for Certification (AFC) for the proposed 760-megawatt generation facility. The natural gas facility includes four Siemens 5000F simple-cycle units. In addition to project management, project responsibilities included the preparation of the water resources section of the AFC. The application was approved by the California Energy Commission on August 25, 2010. The Marsh Landing Generating Station commenced commercial operation on May 1, 2013.

Marsh Landing LLC, Marsh Landing Generating Station Construction Monitoring Support, Antioch, CA. Project Manager for construction monitoring services that included monitoring and reporting by biologists, archeologists, and paleontologists during construction activities for the 760-megawatt Marsh Landing Generating Station. Prior to the start of construction, technical resource specialists prepared the Biological Resources Mitigation Implementation and Monitoring Plan, Cultural Resources Monitoring and Mitigation Plan and Paleontological Resources Monitoring and Mitigation Plan in accordance with the California Energy Commission's Conditions of Certification. A Workers Environmental Awareness Program training video and manual covering all three resource areas were also prepared. A Risk Management Plan was also produced for the project's use of aqueous ammonia pursuant to the California Accidental

Release Program of the Contra Costa County Health Services Department – Hazardous Materials Program.

NRG Energy, Marsh Landing Generating Station Diesel Engine Amendment, Antioch, California. Prepared a post certification amendment to address a new diesel engine for emergency use and a new fire pump system. Application packages were submitted to the California Energy Commission and the Bay Area Air Quality Management District in 2014. AECOM also provided as needed support for biological resource monitoring and agency coordination.

Inland Empire Energy Center LLC, Inland Empire Energy Center Turbine Replacement Project, Menifee, CA. Provided permitting support for the proposed turbine replacement at the 800-megawatt combined-cycle power plant. Inland Empire Energy Center LLC proposed to replace one of its GE 7HA gas turbines with the latest GE 7HA.01 model. Services included development of permitting strategy, preparation of the Permit to Construct application for the South Coast Air Quality Management District and preparation of the Petition to Amend the California Energy Commission license.

Pio Pico Energy Center, LLC, Pio Pico Energy Center Application for Certification, San Diego County, CA. Responsible for preparing the water resources section of the Application for Certification (AFC) for the proposed 300-megawatt generation facility. The project site is located in an unincorporated area of San Diego County known as Otay Mesa. Originally, the project was located in Chula Vista, CA, but due to agency concerns the applicant changed the project site and filed an amendment to the original AFC in February 2011. The plant will consist of three General Electric LMS100 combustion turbines operating in simple-cycle mode. The facility would use recycled water from the local water district and a partial dry-cooling system. The California Energy Commission approved this project's Application for Certification on September 12, 2012.

Mirant Willow Pass LLC, Willow Pass Generating Station Application for Certification, Pittsburg, California. Responsible for preparing the water resources section of the Application for Certification for the proposed 500-megawatt generation facility. The facility would be comprised of two Siemens FlexPlant 10 units operating in combined-cycle mode. The plant would use recycled water from the local sanitation district and dry-cooling technology.

Hydrogen Energy International, LLC, Hydrogen Energy California Application for Certification, Bakersfield, California. Responsible for preparing the water resources section of the Application for Certification (AFC) for the proposed integrated gasification, combined-cycle, power-generation facility with an integrated manufacturing complex that will produce fertilizer and other low-carbon nitrogen based products. The plant would use brackish groundwater for process water needs. Plant wastewater would be recycled within the gasification and power plant systems. Zero liquid discharge technology would be used for process and plant wastewater streams. An AFC, which is a comprehensive California Environmental Quality Act equivalent document, was prepared and filed with the California Energy Commission (CEC) in May 2009. In 2012, URS Corporation prepared the AFC amendment for this project to reflect changes in the

project. Because HECA is receiving federal funding from the US Department of Energy (DOE) under the Clean Coal Power Initiative Round 3 program, it is also subject to the National Environmental Policy Act process. CEC and DOE staff are working closely to coordinate the environmental analysis and schedule for the HECA project.

San Gabriel Power Generation, San Gabriel Generating Station Application for Certification, Rancho Cucamonga, California. Deputy Project Manager for the preparation of an Application for Certification for the proposed 656-megawatt, combined-cycle, natural-gas power plant. The plant would use primarily recycled water and dry-cooling technology. In addition to project management, responsible for preparing the water resources section of the AFC.

CPV Sentinel, CPV Sentinel Energy Project Construction Support, Riverside County, California. Provided as-needed support related to water resources during construction of the 800-megawatt, simple-cycle plant. Coordinated construction monitoring by biologists, archeologists, and paleontologists; responded to permitting questions from the client and contractor; and reviewed documents for submittal to the California Energy Commission. The Sentinel Energy Project commenced commercial operation in May 2013.

CPV Sentinel, CPV Sentinel Energy Project Application for Certification, Riverside County, California. Evaluated environmental setting, impacts, and mitigation with respect to issues relating to water resources and prepared the section on water resources for an Application for Certification under the California Energy Commission's licensing process for large power plants. Managed a detailed groundwater modeling program and groundwater test well program for the cooling-water source to be used for the project. The proposed 800-megawatt, simple-cycle plant would utilize a zero-liquid discharge wastewater system. The application was approved by the California Energy Commission in December 2010.

E&L Westcoast, Colusa Generating Station Project, Colusa, California. Evaluated environmental setting, impacts, and mitigation with respect to issues related to water resources and prepared the section on water resources for an Application for Certification under the California Energy Commission's fast-track licensing process for large power plants. The proposed 660-megawatt, combined-cycle plant would use an air-cooled condenser to reduce consumptive water use and a zero-liquid discharge wastewater system. . E&L Westcoast, LLC, initiated the permit process with the California Energy Commission and then transferred ownership of the plant to Pacific Gas & Electric Company, which now operates the plant.

Imperial Irrigation District, El Centro Generating Station Project, El Centro, California. Prepared the water resources section for a small power plant exemption application for the construction and operation of the El Centro Generating Station Unit 3 Repower Project. This project would increase the Unit 3 generating capacity by 84 megawatts. Also assisted with the preparation of a US Environmental Protection Agency underground injection control permit application to install new deep-injection wells at the plant for the injection and disposal of the plant's wastewater.

Chevron, Pacific Coast Pipeline Redevelopment, Filmore, California. Evaluated the regional and local flood hazards impacting the site of a proposed redevelopment project located on approximately 56 acres adjacent to the city of Fillmore in unincorporated Ventura County. A hydrology study report was prepared and submitted to the city of Fillmore. Chevron intends to undertake environmental remediation activities at this former Superfund site and then subsequently develop a commercial and light industrial park on the site. The city of Fillmore is preparing an environmental impact report to fulfill its obligations under the California Environmental Quality Act in support of the general plan amendment required for the project.

San Francisco Public Utilities Commission, Sunol Long-Term Improvements, Sunol, California. Prepared the environmental analysis with respect to hydrology and water quality impacts due to construction and operation for the proposed improvements to the existing Sunol Corporation Yard and development of the new Alameda Creek Watershed Center. The initial study/mitigated negative declaration will be used to support the permit and approval process, including the California Environmental Quality Act process.

Chevron, Lokern Habitat Conservation Plan Environmental Impact Statement/Environmental Impact Report, Buttonwillow, California. Responsible for analyses of potential impacts to groundwater as a result of oil and gas activities, such as hydraulic fracturing, increases in stormwater runoff and erosion, and degradation of water quality. Climate change impacts on flooding were assessed. Also responsible for the preparation of the hydrology, groundwater, and water quality section of the environmental documents.

GE Energy, GE Tehachapi Photovoltaic Solar Project, Tehachapi, California. Prepared responses to comments received from the California Regional Water Quality Control Board, Lahontan Region in regards to circulation of the mitigated negative declaration and initial study prepared for the 40-megawatt photovoltaic solar energy project located on 330 acres in Kern County, California.

Mirant Corporation, Potrero Power Plant Application for Certification, San Francisco, California. Provided technical support related to hydrologic issues in preparation for expansion of the power plant. Evaluated potential impacts and prepared responses to comments related to hydrologic and water quality issues. Responded to requests from the California Energy Commission and other interested groups for additional information and clarification regarding hydrologic and water quality issues. Also updated and prepared the draft stormwater pollution prevention plan, the erosion and sedimentation control plan, and the spill prevention control and countermeasure plan.

Stauffer Management Company, Iron Mountain Mine Superfund Site, Redding, California. Project Manager for the various remedial actions evaluated and implemented to help reduce the mass discharge of heavy metals from acid mine drainage (AMD), which consisted of low pH sulfuric acid solution with elevated concentrations of metals, mainly copper and zinc. Projects included consolidation and isolation of priority waste rock piles in an engineered disposal cell; 11,600 foot-long pipeline to transfer AMD

from mine workings to the existing aerated, simple-mix, lime treatment plant; 150 foot-high earth embankment to create a 200 acre-foot retention pond to temporarily store AMD to be treated; site drainage improvements; storage tanks for AMD; and tunnel improvements. The work included field investigations (geotechnical and water quality sampling), assessment of remedial alternatives, design, cost estimates, preparation of construction bid documents, litigation support, and assistance in negotiations with agencies.

The McColl Site Group, McColl Superfund Project, Fullerton, California. Assisted with management of the project, litigation support, technical support, the assessment of remedial alternatives, and negotiations with regulatory agencies. Also prepared sampling and analysis plans for field investigations, treatability evaluations, and geotechnical testing. The McColl Superfund site is a 22-acre, inactive, disposal facility for refinery waste—primarily acidic sludge waste generated during the refining process for high-octane aviation fuel during the 1940s. The site includes12 waste sumps that contain about 97,100 cubic yards of contaminated refinery waste and drilling mud.

Mirant Corporation, Contra Costa Power Plant Application for Certification, Antioch, California. Provided technical support related to hydrologic issues in preparation for the expansion of the power plant. Evaluated potential impacts and prepared responses to comments related to hydrologic and water quality issues. Responded to requests from the California Energy Commission and other interested groups for additional information and clarification regarding hydrologic and water quality issues. Also updated and prepared the draft stormwater pollution prevention plan, the erosion and sedimentation control plan, and the spill prevention control and countermeasure plan.

Pacific Gas & Electric Company, Hydroelectric Facility Re-Licensing, San Francisco, California. Reviewed and developed water and power studies, project hydrology, and economic analyses for the re-licensing of several hydroelectric projects in the Mokelumne and Kings River basins, including the Mokelumne River, Kings River, DeSabla-Centerville, and Narrows hydroelectric systems. Assisted in negotiation with outside agencies regarding water rights and prepared exhibits for Federal Energy Regulatory Commission license applications. Also conducted dam safety analyses for an existing dam, which included determining the probable maximum flood, modeling a hypothetical dam failure, and assessing the resulting inundation downstream.

Reliant Energy, Colusa Power Plant Application for Certification, Colusa, California. Technical lead on the project to prepare an application for certification for construction of a nominal 500-megawatt, combined-cycle, gas-fired, power plant in rural Colusa County. The application for certification is the California Energy Commission's California Environmental Quality Act-equivalent document requiring more stringent information regarding power plant efficiency, reliability, and related issues. The application for certification was completed on time and on budget in 3½ months, and was deemed complete within 30 days. Significant issues included air quality, public health, biological resources, impacts on a rural community, and changes in land use. The project also entailed the preparation of all permits and responses to comments from the California Energy Commission. Project responsibilities included an evaluation of the

environmental setting and project impacts, the development of mitigation measures for site water resources, preparation of the section on water resources, assistance with permit applications, including an application for a permit to transport water from a canal managed by the US Bureau of Reclamation, and a notice of intent for low-threat discharge to surface waters.

4. Mark Hale

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State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF MARK HALE REGARDING CULTURAL RESOURCES – ARCHAEOLOGY

I, Mark Hale, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor of Arts degree in Anthropology from the University of California, Berkeley in 1983. I also successfully completed all classwork, examinations, and defense of Master's thesis towards a Master's degree in Cultural Resources Management from Sonoma State University. I have over 30 years of experience regarding the evaluation of archaeological resources. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1009: Application for Certification (AFC) Section 4.3, Cultural Resources (portions pertaining to archaeological resources) (CEC TN #204219-10);

- Applicant's Exhibit No. 1029: AFC, Confidential Appendix E-1, Archaeological Resources Technical Report (CEC TN #205531);
- Applicant's Exhibit No. 1031: AFC, Confidential Appendix E-3, Cultural Resources Records Search (CEC TN #204223);
- Applicant's Exhibit No. 1064 : Project Enhancement and Refinement- Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.3; portions pertaining to archaeological resources) (CEC TN #206698);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (portions pertaining to archaeological resources) (CEC TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.3; portions pertaining to archaeological resources) (CEC TN #213802);
- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 87, 88, 90) (CEC TN #214336); and
- Applicant's Exhibit No. 1096: Supplement to the Confidential Archaeological Resources Technical Report for the Puente Power Project (CEC TN #214397).

I hereby sponsor this declaration (Applicant's Exhibit No. 1105) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.4, Cultural Resources (portions pertaining to archaeological resources) (CEC TN #214712); and
- CEC FSA, Part 1, Cultural Resources Appendix CR-1 (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify

competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Archaeological Resources Inventory.* The archaeological resources inventory for the Project included a literature review and records search, archival research, review of collected data, consultations with the Native American Heritage Commission (NAHC), contact with all Native American groups and individuals identified by the NAHC, and pedestrian surveys. A literature review was completed by staff from the Southern Central Coast Information Center (SCCIC) and was supplemented by additional archival research. Consultation was carried out with the State of California's NAHC and through subsequent contact with all Native American groups and individuals identified by the NAHC. Pedestrian surveys were performed for the Project Area of Analysis (PAA).

b. *Project Area of Analysis (PAA).* The PAA for archaeological resources as analyzed in the Applicant's AFC consists of the project areas where ground-disturbing activities would occur and includes a buffer of 200 feet around the Project site and staging areas.

c. *Identification of Archaeological Resources.* No archaeological resources were identified within the PAA as analyzed in the AFC.

d. *Mitigation Measures/Conditions of Certification*. I concur with the Proposed Conditions of Certification pertaining to archaeological resources contained in CEC FSA Part 1, Section 4.4, Cultural Resources, including those required to manage archaeological site CA-VEN-1807/H that was recorded by CEC staff in the FSA.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification CUL-1 through CUL-9 contained in the Final Staff Assessment (CEC TN #214712), the Project, as proposed, will not result in any significant

environmental impacts with respect to known archaeological resources and will comply with all applicable laws, ordinances, regulations and standards pertaining to archaeological resources.

Executed on January 17, 2017, at SAN FRANCISCO, CA.

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

Mark Hale

ATTACHMENT A

AECOM

Mark Hale
Environmental Documentation: Cultural Resources, Archaeology

Professional History

06/1986 – 11/1990, USDI National Park Service, Yosemite National Park (Archaeologist)
01/1983 - 06-86, Sonoma State University Cultural Resources Facility Employee (Archaeologist)
01/1982 - 12/1982, USDA National Forest Service Employee (Archaeologist)
01/1982 - 01/1983, Santa Rosa Junior College Employee (Anthropology Tutor)

Education

BA, Archaeology, University of California - Berkeley, 1983
Successfully completed all coursework, examinations, and research including thesis defense towards M.A. in Cultural Resources Management, Sonoma State University

Years of Experience

With AECOM: 26
With Other Firms: 7

Training

40-Hour Training OSHA Hazardous Waste Operations

Professional Affiliations

Society for California Archaeology
Archaeological Conservancy

Mr. Hale is responsible for directing cultural resources projects throughout the western United States and Pacific Islands. His professional experience spans over 30 years and includes more than 100 surveying, testing, and data recovery projects conducted within various pacific states and territories. Mr. Hale also has extensive experience conducting Section 106 and/or National Environmental Policy Act (NEPA)-related projects for private developments as well as for federal agencies, including the Federal Emergency Management Agency, National Park Service, Bureau of Land Management, Forest Service, U.S. Army Corps of Engineers, Department of Energy, Postal Service, and various branches of the Department of Defense.

Experience

Senior Project Archaeologist/Cultural Lead, Puente Power Project, Oxnard, California, NRG Oxnard Energy Center, LLC: Directed cultural resource inventory, authored technical report, and authored cultural resources section within environmental compliance document under CEC guidelines.

Senior Project Archaeologist/Cultural Lead NERC Project, PG&E Service Territories, California. Cultural Resources lead for multi-county transmission line improvement project. Team under his direction is responsible for assessing cultural resources sensitivity, providing management recommendations, conducting requisite fieldwork, and cultural resources reports for Pacific Gas and Electric Company.

Senior Project Archaeologist/Cultural Lead Hydrogen Energy California SCS Project, Bakersfield, CA. Directed cultural resource inventory, authored technical report, and authored cultural resources section within environmental compliance document under CEC guidelines for Hydrogen Energy and Department of Energy.

Senior Project Archaeologist/Cultural Lead, Marsh Landing Generating Station, Contra Costa County, California, Mirant Marsh Landing, LLC: Directed cultural resource inventory, authored technical report, and authored cultural resources section within environmental compliance document under CEC guidelines.

Senior Project Archaeologist/Cultural Lead, Willow Pass Generating Station, Pittsburg, California, Mirant Willow Pass, LLC: Directed cultural resource inventory, authored technical report, and authored cultural resources section within environmental compliance document under CEC guidelines.

Senior Project Archaeologist/Cultural Lead, Hydrogen Energy California Project, Bakersfield, California, Hydrogen Energy International, LLC: Directed cultural resource inventory, authored

technical report, and authored cultural resources section within environmental compliance document under CEC guidelines.

Senior Project Archaeologist/Cultural Lead, Ten Section Oil Field Project, Bakersfield, California. Directed cultural resource inventory and authored technical report under FERC guidelines of the 1700 acre gas storage project area for TRICOR.

Senior Project Archaeologist/Cultural Lead, San Francisco Public Utilities Commission, San Joaquin Pipeline No. 4 Project Environmental Analysis Services, San Joaquin Valley, California. Senior project archaeologist responsible for archaeological survey of 47-mile-long pipeline, authored a technical report, and was member of the administrative draft environmental impact report (ADEIR) team. Initiating cultural resources permitting activities for archaeological resources.

Project Archaeologist, Pine Tree Canyon Wind Energy Project, Kern County, California, Los Angeles Department of Water and Power: Archaeological inventory and evaluation of a wind energy project in the Tehachapi Range, California.

Project Archaeologist, Cotterel Wind Energy Project, Idaho, Windland Corporation: Archaeological inventory of a wind energy project in the Cotterel Mountains, Idaho.

Project Archaeologist/Cultural Lead, Vista del Sol LNG Terminal and Pipeline, FERC Section 3 and 7c Applications (Confidential Client): Prepared Archaeological Study in support of the EIS and FERC application for LNG terminal on the Gulf Coast.

Project Archaeologist, Salton Sea Unit 6 Project, Imperial County, California: Archaeological inventory of proposed geothermal energy facilities in the Colorado Desert, southern California.

Project Archaeologist, Bighorn Power Generation Project, Clark County, Nevada, Reliant Energy: Archaeological inventory, evaluation, and data recovery for a proposed energy generation facility and transmission line in southern Nevada.

Project Archaeologist, Meadow Valley Generation Project, Lincoln and Clark counties, Nevada, PG&E National Energy Group: Archaeological inventory and evaluation for a proposed energy generation facility and transmission line in southern Nevada.

Project Archaeologist/Cultural Lead, Colusa Power Plant Application for Certification, Colusa County, California, Reliant Energy: Completed record search, conducted archaeological survey, and authored technical section for environmental document proposed power plant in Colusa County, California.

Project Archaeologist, Goldendale Power Plant Project: Completed record search, conducted archaeological survey, and co-authored technical section for environmental document for proposed power plant within the City of Goldendale, Washington.

Project Archaeologist/Cultural Lead, Potrero Power Plant Application for Certification. San Francisco, California, Mirant Corporation: Completed record search, conducted archaeological survey, and authored technical section for environmental document in preparation of power plant expansion, San Francisco, California.

Project Archaeologist/Cultural Lead, Contra Costa Power Plant Application for Certification, Contra Costa County, California, Mirant Corporation: Completed record search, conducted archaeological survey, and authored technical section for environmental document in preparation of power plant expansion.

Project Archaeologist/Cultural Lead, City of Pittsburg, Trans Bay Cable Project Environmental Impact Report (EIR), San Francisco Bay Area, California. Project entails the installation of a 53-mile long cable under San Francisco Bay from the City of Pittsburg to the City of San Francisco. Directed portions of the archaeological field investigation and authored a technical report and the cultural resources section of environmental document.

Project Archaeologist, Olympic Pipeline Company, Cross Cascades Transmission, Seattle and Pasco, Washington. Archaeological survey of transmission corridor between Seattle and Pasco, Washington.

Project Archaeologist, Project Archaeologist, Sierra Pacific Power Company, Alturas Intertie, Reno, Nevada. Conducted archaeological survey and test excavations along route of proposed transmission line across northeastern California.

Project Archaeologist/Cultural Lead, Project Archaeologist, Los Angeles Department of Water and Power, Pine Tree Canyon Wind Energy, Los Angeles, California. Archaeological inventory and evaluation of a wind energy project in the Tehachapi Range.

5. Jeremy Hollins

Michael J. Carroll
LATHAM & WATKINS LLP
650 Town Center Drive, 20th Floor
Costa Mesa, California 92626-1925
Tel.: (714) 540-1235
michael.carroll@lw.com

Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF JEREMY HOLLINS REGARDING CULTURAL RESOURCES – HISTORIC RESOURCES

I, Jeremy Hollins, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I earned a Masters of Arts in Public History from the University of San Diego in 2005. I have over 14 years of experience regarding the evaluation of historic architectural resources. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1009: Application for Certification (AFC) Section 4.3, Cultural Resources (portions pertaining to historic architectural resources) (CEC TN #204219-10);
- Applicant's Exhibit No. 1030: AFC, Appendix E-2, Historic Architectural Resources Technical Report (CEC TN #204220-5);

- Applicant's Exhibit No. 1031: AFC, Confidential Appendix E-3, Cultural Resources Records Search (CEC TN #204223);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement- Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.3; portions pertaining to historic architectural resources) (CEC TN #206698);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (portions pertaining to historic architectural resources) (CEC TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.3; portions pertaining to historic architectural resources) (CEC TN #213802); and
- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 87, 89, 90) (CEC TN #214336).

I hereby sponsor this declaration (Applicant's Exhibit No. 1106) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.4, Cultural Resources (portions pertaining to historic resources) (CEC TN #214712); and
- CEC FSA, Part 1, Cultural Resources Appendix CR-2 (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I

prepared in response to Project modifications and input from the other parties and the public.

a. *Historic Resources Inventory* The historic resources inventory for the Project included a literature review and records search, archival research, review of collected data, and pedestrian surveys. A literature review was completed by staff from the Southern Central Coast Information Center (SCCIC) and was supplemented by additional archival research. Pedestrian surveys were performed for the historic architectural resources Project Area of Analysis (PAA).

b. *Project Area of Analysis (PAA).* The PAA for historic architectural (built environment) resources consists of the Project site, and includes a buffer for projects in rural settings of no less than 0.5 mile out from the Project site and not less than 0.25 mile on each side of aboveground linear facilities.

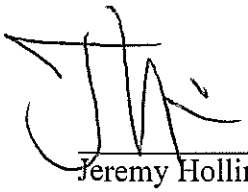
c. *Identification of Historic Resources.* None of the built environment resources surveyed met the criteria for listing in the California Register of Historical Resources and none were considered historical resources as defined in the California Environmental Quality Act.

d. *Mitigation Measures/Conditions of Certification*. I concur with the conclusion in the CEC FSA, Part 1, Section 4.4, Cultural Resources that no Conditions of Certification are necessary for protection of historic resources.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts with respect to historic resources, and will comply with all applicable laws, ordinances, regulations and standards pertaining to historic resources.

Executed on January _17_, 2017, at _San Diego, CA_

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



Jeremy Hollins

ATTACHMENT A

Jeremy Hollins, MA
Senior Architectural Historian and Architectural History Team Lead

Professional History

01/2006 - Present, AECOM Senior Architectural Historian
1/2005 - 12/2005, New School of Architecture Adjunct Instructor
12/2004 - 12/2005, IS Architecture Architectural Historian
12/2003 - 12/2005, La Jolla Historical Society Archivist and Preservation Specialist

Education

BA, Environmental History, University of Rhode Island, 2003
MA, Public History, University of San Diego, 2005

Years of Experience

With AECOM: 11
With Other Firms: 2

Training

Annual Conference
Building Partnerships in Tribal Communities
Coordinating Environmental & Historic Preservation Compliance
Introductory and Advanced California Environmental Quality Act Workshop Series
Section 106: Principles and Practice

Certifications

Certificate in Urban Planning (In Progress)

Mr. Hollins is a US Secretary of Interior professional qualified architectural historian and historian who has performed numerous historic evaluations, context studies, and determinations of eligibility and effect for a range of resources. He has extensive experience applying local, state, and National Register criteria to prepare technical reports, California Office of Historic Preservation DPR 523 series forms, historic American buildings survey reports, cultural landscape reports, historic structures reports, and resolution documents. Mr. Hollins has detailed knowledge of the laws and ordinances affecting historic properties, including Section 106 of the National Historic Preservation Act, the California Environmental Quality Act, NEPA, Department of Transportation Act Section 4(f), California Public Resources Code, California state historic building codes, and US Secretary of Interior standards for the treatment of historic properties. Additionally, Mr. Hollins' work has been published in academic journals and he has served as an adjunct instructor in World Architectural History at the New School of Architecture.

Experience

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Historic Architecture section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included coordination of field survey, CHRIS records search, Native American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, and analysis of effects

Carson Cogeneration Plan Expansion, BP, Inc., Los Angeles, California. Served as Task Manager for cultural resources assessment for a cogeneration plant expansion. Performed fieldwork and co-authored Cultural Resources AFC section and technical reports. Deliverables were submitted to the CEC in support of a CEQA-level assessment. Duties included coordination of field survey, CHRIS records search, Native American consultation, primary and secondary research, development of historic context, recordation and evaluation of historic-period properties through DPR 523 series forms, analysis of effects, and development of mitigation measures

Carrizo Energy Solar Farm 177 MW Solar Plant, CEC, Ausra, Inc., San Luis Obispo County, California. Served as Task Manager for cultural resources assessment. Performed fieldwork and authored Cultural Resources AFC section and technical report for a 177 MW solar power project located in San Luis Obispo County, California (640 acre solar farm; 380 acre construction laydown). Deliverables were submitted to the CEC in support of a CEQA-level assessment. Duties included coordination of field survey, CHRIS records search, Native American consultation, primary and

secondary research, development of historic context, recordation and evaluation of historic-period properties, analysis of effects, and development of mitigation measures.

Stirling Energy Systems, Solar 2 and Data Request 125 - California Energy Commission, Imperial County, California. Performed primary and secondary source research to develop a historic and evaluative context for the project area. Context focused on Imperial County transportation/ circulation networks (Highway 80), local military activities, irrigation agriculture, and the San Diego-Arizona Railroad. Recorded and performed determination of eligibility, analysis of integrity, and identification of effect for six historic period properties.

BrightSource Energy, Rio Mesa Solar Energy Certification Application, Riverside County, California. Field survey and archival research task lead for an approximately 20,000-acre solar project in the Colorado Desert of California. Authored the architectural history portion of cultural resources section of the certification application, which evaluated the direct and indirect impacts of the project to cultural resources. Completed determination of eligibility, analysis of integrity, and identification of effect for 30 resources in accordance with the National Historic Preservation Act, NEPA, California Environmental Quality Act, and California Energy Commission guidelines. Resources were primarily associated with World War II training exercises, desert training center, and other military resources.

US Coast Guard, National Register Evaluations, Various Locations, California. Oversaw the preparation of National Register of Historic Places evaluations of the Point Loma Lighthouse historic district, Air Station Sacramento, and the Morro Bay Harbormaster Office. Developed historic contexts, full-scale evaluations, and integrity assessments based on exhaustive research and field work.

US Marine Corps, Area 26 Museum District, MCB Camp Pendleton, California. Task lead for asset evaluations and site analysis for the museum area district at Camp Pendleton, consisting of the Mechanized Museum and several warehouses constructed during World War II through the end of the Cold War. Developed field forms for each building and created individual timelines, outlining the historic use of each. Provided treatments to meet Secretary of Interior standards for rehabilitation for proposed improvements to the Mechanized Museum to retain the building's character, feeling, and visual quality, while making compatible changes.

US Marine Corps, Bachelor Enlisted Quarters Siting Study, MCB Camp Pendleton, California. Reviewed MCB Camp Pendleton GIS layers and cultural resources records and data to identify potential direct impacts to previously recorded cultural resources located within a 500-foot radius of proposed bachelor enlisted quarters (BEQ). Provided cultural resources analysis as part of a preliminary NEPA constraints and siting study to support the preparation of the project's design-build request for proposal for fiscal years 2008, 2009, and 2010. In total, 25 potential BEQ sites were analyzed for potential direct impacts to cultural resources.

Naval Facilities Engineering Command Southwest, Building 158 Business Case Analysis (BCA), NB Point Loma, California. Architectural

history task manager for a BCA to present and evaluate scenarios regarding the future of Building 158, constructed in 1908 by the Army Quartermaster Corps on present-day NB Point Loma. The BCA included a descriptive scope and viability assessment of five scenarios, the identification and analysis of key events/milestones, opportunities and constraints, stakeholders, decision-making processes, associated estimated costs, and timelines. The five future use scenarios included building rehabilitation, rehabilitation with an expanded footprint, building lay-up (i.e., mothballed), demolition for future use as a parking area, and demolition for use as a buildable site. The report analyzed each of the scenarios, while considering different uses and various occupancies for the building.

US Marine Corps and US Navy, Electrical and Communication Upgrade Military Construction P1093/P1094, MCB Camp Pendleton, California. Coordinated with the MCB Camp Pendleton Environmental Security division archaeologist and Naval Facilities Engineering Command Southwest project manager, as well as the AECOM design and engineering team, to ensure the 100 percent design plans to be submitted to State Historic Preservation Office are in compliance with the project final environmental impact statement and the programmatic agreement. Worked with base staff to identify compatible substitute materials for the replacement of a historic concrete roadway associated with El Camino Real, located at Camp Pendleton. Developed plan for the monitoring of the roadway's removal and replacement.

Marine Corps Recruit Depot (MCRD), Cultural Resources Internal Audit, San Diego, California. Oversaw completion of an internal audit of the MCRD cultural resources program. Task included review of Marine Corps and Department of Defense cultural resource policies and National Historic Preservation Act Section 106 requirements against MCRD records. Produced a report detailing the compliance status of each requirement and presented solutions for the resolution of out-of-compliance items.

US Navy and US Marine Corps, Chocolate Mountain Aerial Gunnery Range Land Withdrawal Renewal, MCAS Yuma, California. Conducted historic research to identify potential cultural resources in the project area of potential effects for the cultural resources section of the legislative environmental impact statement (LEIS). Assumed responsibilities as project manager and oversaw the final studies and certification of LEIS.

Naval Facilities Engineering Command, Desert Installation Appearance Plan and Airfield Security Study, Various Locations, California. Architectural historian responsible for developing cultural resources considerations, basewide historic contexts, design guidelines for historic structures and districts, and basewide visual themes for NAF El Centro, NAS Fallon, NWS Seal Beach, NAS Lemoore, and NAWS China Lake. The bases are desert installations associated with Cold War-era missile and space programs and research and design. NAWS China Lake and NWS Seal Beach feature historic districts associated with NASA's Saturn rocket program, and officers' quarters which housed civilian researchers and military personnel together for the first time. The architecture of the districts reflected the unique functions of each property and the cutting-edge technological and engineering advances conducted onsite. District architecture was distinctively Modern, ranging from the international style to the high-tech style. Architectural historians followed the guidance outlined in

the National Register Bulletin Guidelines for Evaluating and Nominating Properties that Have Achieved Significance Within the Past 50 Years and the California Historic Military Buildings and Structures Inventory. A thematic approach was developed to classify each resource within its proper Cold War-era context and ensure each evaluation was rooted in a clear historical perspective.

US Coast Guard, Maintenance Augmentation Team (MAT)/Fast Response Cutters (FRC) Support Facility, USCG Base Los Angeles - Long Beach, California. Completed a constraints study and environmental assessment for locating and planning a MAT/FRC support facility at the base. AECOM evaluated several historic properties at USCG Base San Diego, including an airfield hangar, and at Base Los Angeles - Long Beach, including several industrial piers, docks, and support buildings. Developed historic contexts, historic research, field surveys, and an evaluation and integrity analysis of each property.

US Coast Guard, Novato Spanish Housing Environmental Assessment (EA), Novato, California. Prepared an EA of rehabilitation or demolition of historic properties at the USCG Spanish housing site in Novato. Approximately 132 Spanish-style housing units were reevaluated to determine if they were contributing resources to the National Register-listed Hamilton Army Air Field discontinuous historic district. AECOM also prepared alternatives for rehabilitation, including complete interior demolition and upgrades to interior facilities, and demolition of the housing units and potential construction of new houses or a recreation area, with an emphasis on evaluating character-defining features and the integrity of the historic properties to adhere to US Secretary of the Interior standards for the treatment of historic properties.

University of California - Irvine, International Education Research Foundation Building Historic and Architectural Documentation, Irvine, California. Performed equivalent of historic American buildings survey (HABS) Level 2 survey of a 1986 Frank Gehry-designed academic complex at the University of California – Irvine. Responsible for architectural investigation, physical history, historic context, and coordination with HABS photographer.

Bailey Ranch Historic Resource Assessment, Santa Clara County, CA. Completed historic resource assessment for Bailey Ranch including overseeing architectural history survey, integrity assessment, and assessment of effects for compliance with Section 106 of the NHPA, CEQA, and . Projects considering effects from demolition or relocation of locally historical resource. Required extensive regulatory knowledge of local, state, and federal laws, and strategic planning with Santa Clara Valley Water District to identify best path forward, considering regulatory approvals,

Santa Ana Fixed Guideway, Santa Ana, CA. Cultural Resources Task Manager. Oversaw determination of eligibility, analysis of integrity, and application of criteria for adverse effect for approximately 100 cultural resources in accordance with the NHPA, NEPA, CEQA, and FTA guidelines. Led consultation efforts with SHPO and authored the project MOA. Also, oversaw APE map delineation, stakeholder consultation, historic context development, primary and secondary source research, field map and field form creation, and impact analysis. (Cost: $60,000)

Caltrans and City of Santa Ana, Bristol Street HPSR and HRER, Phase 3 and Phase 4 – Santa Ana, CA. Task manager for an intensive architectural history field survey of the direct APE and a reconnaissance survey of the indirect APE in accordance with the Programmatic Agreement between the FHA, the Advisory Council on Historic Preservation, the California OHP, and Caltrans. Managed archival research, wrote a historic context, evaluated the APE for eligibility for listing in the NRHP and the CRHR (or as historical resources for purposes of CEQA), recorded 66 resources (primarily early to mid-century residences in planned subdivisions) on the appropriate DPR 523 forms, and authored the HPSR and HRER. Adapted unique approach for recordation based on historic subdivisions and property types to facilitate and streamline compliance. (2010-2011)

Caltrans and SANBAG, Lenwood Road HPSR, ASR, and HRER – Barstow, CA. Task manager for cultural resources studies, and preparation of HPSR, ASR, and HRER. Oversaw archival research, historic context, evaluated the project APE for eligibility for listing in the NRHP and the CRHR (or as historical resources for purposes of CEQA), recorded forty-one resources (Historic Route 66-related commercial buildings and single-family residences) on the appropriate DPR 523 forms, and drafted the Historic Resources Evaluation Reports and Historic Properties Survey Reports. (2009-2011).

6. Louise Kling

Michael J. Carroll
LATHAM & WATKINS LLP
650 Town Center Drive, 20th Floor
Costa Mesa, California 92626-1925
Tel.: (714) 540-1235
michael.carroll@lw.com

Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF LOUISE KLING REGARDING VISUAL RESOURCES

I, Louise Kling, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a degree in ecology from Lewis and Clark College in 1992 and completed Masters level coursework in landscape ecology at Utah State University in 2001. I have over 10 years of experience regarding the evaluation of visual resources and potential impacts thereon. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1019: Application for Certification (AFC) Section 4.13, Visual Resources (CEC TN #204219-20); and
- Applicant's Exhibit No. 1040: AFC Appendix L, KOP Rating Sheets (CEC TN #204220-12).

I hereby sponsor this declaration (Applicant's Exhibit No. 1114) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.14, Visual Resources (CEC TN #214712); and
- CEC FSA, Part 1, Visual Resources Appendix 1 (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Visual Sphere of Influence*. The varying landscapes and intensity of uses in the vicinity (i.e., beach, coastal dunes, agricultural, residential, and industrial-oriented oil and gas/energy generation) collectively inhibit the Visual Sphere of Influence (VSOI) for the Project from developing a strong semblance of uniformity or harmony. This, in turn, reduces the overall visual quality of the existing landscape, specifically within the limits of the VSOI. The physical appearance of the VSOI is strongly influenced by the presence of the existing Mandalay Generating Station (MGS) and other industrial structures, including the McGrath Peaker Project.

b. *Key Observation Points.* Various factors were considered in the analysis of existing conditions for each Key Observation Point (KOP), including the character of the landscape, viewer/user groups with views of the project, and the visibility of the project. Overall, although there are several designated scenic resources visible from each KOP, the intactness or harmony of the views of those resources is either strongly or moderately disrupted

by the scale, mass, and geometric form of MGS and other industrial structures. Most pronounced is the strong degree of contrast the bright orange-and-white coloring on the existing MGS stack creates in the landscape. The coloring attracts and holds viewer attention in the VSOI when visible; therefore, the existing visual character and quality in the VSOI is heavily influenced by the existing MGS facility and other industrial structures. Overall, the Project would incrementally alter existing views of the Project site; however, the Project would not significantly change the existing visual character and quality of these views.

c. *Visible Plumes.* The Project will use evaporative cooling for air intake cooling for the gas turbine. This will not create a visible plume because the resulting moisture in the gas turbine exhaust will be approximately 900 degrees Fahrenheit. Therefore, no visible steam plumes will be created by the Project.

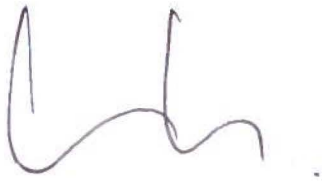
d. *Light and Glare.* The Project would not create a new source of substantial glare or light that would adversely affect daytime or nighttime views. Project design features and proposed Conditions of Certification VIS-2 and VIS-3 in the CEC Staff FSA would ensure no significant impacts occur from lighting during the construction, demolition, and operation phases of the Project.

e. *Mitigation/Conditions of Certification.* I concur with the proposed Conditions of Certification pertaining to visual resources contained in CEC FSA Part 1, Section 4.14, Visual Resources.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that, with implementation of proposed Conditions of Certification VIS-1 through VIS-3 contained in the Final Staff Assessment (CEC TN #214712), the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts with respect to visual resources and will comply with all applicable laws, ordinances, regulations and standards pertaining to visual resources.

Executed on January 17, 2017, at Portland, Oregon.

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



Louise Kling

ATTACHMENT A

Louise S.T. Kling
Senior Environmental Planner

Professional History

05/2006 - Present, URS Senior Environmental Planner

Education

MS, Fisheries, Utah State University, 0
BS, Biology, Lewis & Clark College, 1993
BS, Biology, Lewis & Clark College, 1994

Years of Experience

With AECOM: 10
With Other Firms: 13

Professional Affiliations

River Management Society
National Association of Environmental Professionals

Louise Kling is a senior environmental planner with more than 20 years of experience in environmental research and planning. Her career began with nearly a decade with the U.S. Forest Service in Washington State. She applied this experience to projects requiring federal- and state-specific environmental documentation. Her technical practice focusses on land use, visual resource impact assessment, and recreation resources.

Ms. Kling's experience in visual resources assessment includes projects with the Bureau of Land Management, U.S. Forest Service, the Federal Highway Administration, and the U.S. Army Corps of Engineers' VIA methodologies, along with management of photosimulation production. She has applied her expertise to diverse projects such as renewable energy, oil and gas, transmission, hydropower, pipeline, port, transportation, mining, and fire management.

Her work emphasizes innovative and solution-orientated approaches for projects sited in or adjacent to special management areas such as Wild and Scenic Rivers, Wilderness Areas, and National Scenic and Historic Trails. She maintains an active professional role in the field of visual resources, and is widely respected for her role in advancing knowledge of this topic. Ms. Kling has served on several national panels and recently participated as an expert reviewer for the Bureau of Land Management best management practices for visual resources for renewable energy facilities.

Experience

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Visual Resources section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying key observation points for potential impacts, determining the applicable laws, ordnances, regulations, and standards governing visual resources in the vicinity, and evaluating the potential impacts and mitigation measures to be implemented for the project.

Hydrogen Energy California, Integrated Gasification Combined Cycles Environmental Impact Statement, Kern County, California. Visual resource lead for a proposed energy production facility study, which included a coal/petcoke processing facility and associated linear structures (natural gas line, transmission line, rail line, and CO2 line). Tasks included management of the production of California Energy Commission-compliant photosimulations and preparation of the environmental impact statement in support of California Environmental Quality Act processes.

Idaho Power Company, Boardman to Hemingway Transmission Permitting, Multiple Locations, Idaho. Scenic resource lead, lead analyst, and author of Exhibit R (scenic resources) for the application of a site

certificate for the Boardman to Hemingway transmission line. This effort involved analyzing potential impacts to scenic resources, protected areas, and recreation sites that could result from construction and operation of the approximately 300 miles of 500-kV electrical transmission corridor.

Portland General Electric, Mt. Hood National Forest Environmental Assessment, Zig Zag, Oregon. Visual resources lead provided analysis and design recommendations for a successful categorical exclusion that permitted the relocation of approximately five miles of an existing 57-kV transmission lines. The project required construction and of approximately 1.5 miles of new transmission along a national scenic byway.

Portland General Electric, Cascade Crossing Critical Issues Analysis, Portland, Oregon. Federal, tribal, and state land use and visual resources lead conducted a critical issues assessment for a proposed Cascade Crossing project on federal and tribal lands crossed by a 210-mile transmission corridor. Analyzed land use data, including land and resource management plan data, hydrologic, roadway, and trail system data; completed alternatives analysis for U.S. Forest Service-administered lands; conducted comparison of six different route segments; and prepared the Oregon Energy Facility Siting Council's notice of intent.

Land Use and Protected Areas Scope of Services Study, Multiple Locations, Oregon. Deputy project manager and technical lead for the development of a scope of services estimate to permit a 40-mile transmission line. This project required knowledge of federal, state, and local land use within western Oregon, and the ability to assess management of specific resources across multiple jurisdictions. It also required the management of a suite of resource experts, and oversight to ensure consistent products were submitted across disciplines. Provided input and oversight to estimate permitting costs for the proposed project and played a key role in compiling the final report.

Alaska Energy Authority, Susitna-Watana Hydroelectric Study, Various Counties, Alaska. Aesthetics technical lead for a large-scale 700-MW hydroelectric project located in the Railbelt Region of Alaska. The proposed project includes construction of a new 735-foot dam, access roads, and approximately 120 miles of electrical transmission lines. Additional responsibilities included the preparation of the Federal Energy Regulatory Commission resource reports for aesthetics, license application, and development of a recreation resource management plan.

Portland General Electric, Bowman Dam Visual Resource Impact Assessment, Crook County, Oregon. Project manager completed the visual resource impact assessment for a proposed hydroelectric retrofit project located in eastern Oregon on a federally-designated wild and scenic river area administered by the Bureau of Land Management.

Bureau of Ocean Energy Management, Offshore Wind Visibility Study, Long Island, New York. Technical manager was responsible for a visibility study to identify an offshore area suitable for a renewable energy development. This included management of GIS, meteorology, and simulation subject matter experts and integration of data inputs and outputs across technical tasks in production of accurate and realistic visual simulations of an offshore wind energy facility. Work required extensive

coordination with the National Park Service and managers of National Historic Landmarks.

Bureau of Land Management, Mohave County Wind Environmental Impact Statement, Mohave County, Arizona. Visual resources lead served as a subject matter expert at public meetings and authored the visual resource impact analysis section of an environmental impact statement (EIS) for a proposed 258 turbine wind farm located northwest of Kingman, Arizona. The proposed project provided up to 500 megawatts of electricity. The EIS provided the framework for the record of decision (ROD) by the Bureau of Land Management.

Bureau of Land Management, China Mountain Wind Environmental Impact Statement, Twin Falls, Idaho. Visual resources lead for completion of an environmental impact statement for a proposed 170 turbine wind farm located in Idaho and Nevada. The proposed project would provide up to 425 megawatts of electricity. The permitting effort required coordination with two state and district Bureau of Land Management offices. Included in this effort was the management of visual simulation production to render the appearance of wind turbines and transmission lines, which informed the determination of land use consistency and the need for a proposed land use plan amendment.

Bonneville Power Administration, Whistling Ridge Energy Transmission Environmental Impact Statement, Skamania County, Washington. Visual resources / recreation technical resource team member in support of a wind farm development located in Columbia River Gorge. The visual resource impact assessment used Federal Highway Administration methods to identify potential impacts to the resource. The results of the assessment were used to support the Energy Facility Site Evaluation Council's application for site certification.

Horizon Wind Energy, Wind Farms Environmental Assessments, San Bernardino County, California. GIS lead conducted a natural resource inventory using federal, state, and local data sources. Resource evaluation inventory also included using the California Natural Diversity Database. Inventory then was used to inform the micrositing corridor for three proposed wind farms located on Bureau of Land Management acreage.

British Petroleum Alternative Energy, Wind Energy Facility Site Characterization Study, Washington. Technical resource lead implemented a site characterization study to identify potential cultural or natural resource constraints. Coordinated the assessment of potential impacts from the proposed project on non-government microwave telecom systems.

First Solar, Desert Quartzite Solar Environmental Report, Riverside, California. Visual resource technical lead for the preparation of an environmental report for a proposed 300-MW solar project located within the Bureau of Land Management's Riverside East Solar Energy Zone.

Bright Source Energy, Bright Source Energy Environmental Impact Report, San Bernardino, California. Senior visual resource specialist provided leadership and expert review to compete the application for certification, which was filed with the California Energy Commission. The

project included development of two 250-megawatt solar power plants (500 megawatts nominal combined) in California's Riverside County.

Palomar Gas Transmission, Mt. Hood National Forest/West-wide Energy Corridor, Federal Energy Regulatory Commission Land Use, Recreation and Aesthetics Resource Report, Mt. Hood National Forest, Oregon. Visual resources lead conducted a resources assessment of portions of the Mt. Hood National Forest crossed by the proposed pipeline. Also updated lands classified using the outdated Visual Management System so as to be consistent with the scenery management system, per guidance contained in the energy corridor record of decision.

Authored the scenery management plan and worked with a diverse inter-disciplinary team to develop precedent-setting mitigation and design options focused on sensitive areas. These included the Pacific Crest Trail, designated areas, and federally-designated wild and scenic rivers.

Palomar Gas Transmission, Deschutes River Crossing: Federal Energy Regulatory Commission Land Use, Recreation, and Aesthetics Resource Report, Bend, Oregon. Visual resources lead conducted a visual resources inventory of a segment of the Deschutes River using Bureau of Land Management guidelines. Analysis included three bridge design options and provided a consistency determination based on existing management objectives for private lands located within federal and state-designated areas.

NorthernStar, Bradwood Landing Liquefied Natural Gas Terminal, Bradwood, Oregon. Data management / GIS analyst assisted with the preparation and planning of state and federal permits associated with the liquefied natural gas terminal and the 36-mile distribution pipeline. Permitting assistance included spatial analysis and data acquisition using GIS. Data was used for the Federal Energy Regulatory Commission resource reports, Oregon's joint permit application and Washington State's joint aquatic resources permit application.

Horizon Wind, Energy Wind Farms, San Bernardino County, California. Environmental task lead planned and implemented a natural resources and land use assessment to support National Environmental Policy Act compliance for three wind farms and four meteorological tower projects. Resource evaluation included an inventory of spatial data, including the California Natural Diversity Database and coordination of filed surveys.

7. Julie Love

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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF JULIE LOVE REGARDING BIOLOGY

I, Julie Love, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I earned the degree of Master of Environmental Science and Management in Environmental Science and Management from the University of California, Santa Barbara in 2003. I earned the degree of Bachelor of Science in Marine Biology from the University of California, Los Angeles in 2000. I have over 15 years of experience regarding the evaluation of biological resources. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1008: Application for Certification Section 4.2, Biological Resources (CEC TN #204219-9);
- Applicant's Exhibit No. 1028: Application for Certification, Appendix D Biological

Resources (CEC TN #204220-4);

- Applicant's Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 25) (CEC TN #205765);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement - Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.2) (CEC TN #206698);
- Applicant's Exhibit No. 1086: Response to Recommended Specific Provisions in August 26, 2016 Proposed Report (CEC TN # 213624);
- Applicant's Exhibit No. 1087: Comments on California Coastal Commission Report to California Energy Commission on AFC 15-AFC-01 - NRG Puente Power Project (CEC TN # 213625);
- Applicant's Exhibit No. 1088: Final NRG Comment Letter to California Coastal Commission re: Agenda Item F10a, September 9, 2016 (CEC TN # 213626);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.2) (CEC TN #213802);
- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 77, 83 - 86) (CEC TN #214336); and
- Applicant's Exhibit No. 1098: Applicant's Comments on the Proposed Conditions of Certification in the Final Staff Assessment for the Puente Power Project (portions pertaining to biological resources) (CEC TN #215352).

I hereby sponsor this declaration (Applicant's Exhibit No. 1104) and the above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.3, Biological Resources (CEC TN #214712); and
- CEC FSA, Part 1 Biological Resources Appendix-2: Cumulative Projects (CEC TN

#214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. Project Site and Vicinity. The Project "site" is generally understood to be the vacant three-acre parcel situated entirely within the boundaries of the existing Mandalay Generating Station (MGS) on which the new generating facility will be located. However, with the decision to include removal of the existing ocean outfall as part of the Project, the geographic scope of the Project technically includes areas outside of the Project site proper. The site itself has been subjected to soil compaction and complete vegetation removal in the past. Vegetation on the Project site is currently dominated by ice plant mats, an invasive plant community, with coyote brush scrub (a common, native plant community) also present. The proposed laydown area on the southern portion of the MGS property has also been previously disturbed, and contains ruderal vegetation. Except for removal of the existing outfall, Project construction activities would be confined to these designated areas, with the exception of access routes along existing graveled and paved access roads on the MGS site. The removal of the outfall structure will occur on the beach adjacent to and west of the MGS property. No new offsite linear facilities are required for the Project. The regional study area for evaluation of biological resources is defined as the area within a ten-mile radius of the Project site, and the detailed study area is within one mile of the Project site.

b. *Vegetation Communities.* The Project site has been graded and subjected to various human uses in the past, and the vegetation is significantly disturbed.

Dominant plants include many invasive weeds, including freeway iceplant (Carpobrotus edulis), slenderleaf ice plant (Mesembryanthemum nodiflorum), and Russian thistle (Salsola tragus); and horticultural species such as lollypop tree (Myoporum laetum). Remnant coastal dune scrub habitats occur in the southern portion of the site, supporting native species including coyote brush (Baccharis pilularis) and woolly seablite (Suaeda taxifolia). However, even this area is disturbed, and invasive species are prevalent. The habitats contained in, and immediately adjacent to, the outfall structure include open water, sandy beach, and dune mats.

c. *Species Present.* The majority of the MGS property, including the Project site, is composed of industrial use impervious surfaces (i.e., buildings, tanks, and paved lots/roads) that have little to no wildlife value. Animals that may use these areas likely are limited to species highly adapted to developed lands, such as western fence lizard (Sceloporus occidentalis), house sparrows (Passer domesticus), rock doves (Columba livia), and European starlings (Sturnus vulgaris). Ruderal areas in the facility may provide foraging and nesting habitat for these species. The sandy beaches near the Project site, including McGrath State Beach to the north and Mandalay State Beach to the south, are known nesting sites for sensitive shorebirds, including the western snowy plover and California least tern. In the immediate Project vicinity, McGrath Lake and the dunes that support western snowy plover and California least tern breeding habitat within McGrath State Beach are considered environmentally sensitive habitat areas (ESHA) per the California Coastal Act and City of Oxnard's Coastal Land Use Plan. The Edison Canal abuts the MGS property to the south and is the current source of cooling water for the once-through cooled MGS Units 1 and 2. Discharge of limited amounts of process wastewater and stormwater will be discharged to the canal with the development of the Project. The open water of the canal may provide habitat for common coastal saltwater fishes, and in areas more distant from the MGS property, may also support sensitive species such as the tidewater goby (Eucyclogobius newberryi). However,-based on water quality and habitat requirements for tidewater goby, the portion of Edison Canal near the proposed discharge point for the Project is not suitable habitat for the tidewater goby due to factors such as high salinity, lack of emergent vegetation, and deep water.

d. *On-Site Wetlands.* I disagree with the determination made by staff of the California Coastal Commission, which has been incorporated into the CEC FSA, that a portion of the Project site constitutes a "wetland." This is an issue that is likely to be a topic of further discussion during evidentiary hearings.

e. *Potential Impacts to Plants and Wildlife.* Applicant's Exhibit Nos. 1008 and 1090, as well as CEC FSA, Part 1, Section 4.3, Biological Resources, identify and quantify potential impacts to biological resources from implementation of the Project through direct means such as injury, mortality, and removal of habitat, as well as indirect impacts, including construction dust and noise, nighttime illumination, and increased levels of atmospheric nitrogen deposition. These same documents also identify and quantify potential cumulative impacts.

e. *Mitigation Measures/Conditions of Certification.* Except as set forth in Applicant's Exhibit No. 1098, Applicant concurs with the proposed Conditions of Certification contained in CEC FSA Part 1, Section 4.2, Biological Resources.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification BIO-1 through BIO-10 contained in the Final Staff Assessment (CEC TN #214712), modified as proposed in Applicant's Exhibit No. 1098, the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts to biological resources, and will comply with all applicable laws, ordinances, regulations and standards pertaining to biological resources.

Executed on January 18, 2017, at Santa Barbara, CA.

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

Julie Love

Julie Love

ATTACHMENT A

AECOM

Julie Love
Senior Restoration Ecologist and Biologist

Education

MESM/Environmental Science and Management/2003/Bren School of Environmental Science and Management, University of California, Santa Barbara
BS/Marine Biology/2000/University of California, Los Angeles

Permits

CDFW Scientific Collecting Permit
USFWS Recovery Permit for Tidewater goby
CDFW Collecting Permit for Plants

Years of Experience

With AECOM: 11
With Other Firms: 4

Training

Surface Water Ambient Monitoring Program (SWAMP), field procedures and bioassessment concepts, presented by California Waterboard, April 2016
California Rapid Assessment Method (CRAM) Estuarine Module, presented by UC Davis Extension, October 2012
California Rapid Assessment Method (CRAM) Practitioner Training and Riverine Module, presented by UC Davis Extension, March 2012
Basic Wetland Delineation Training (40-hour), presented by the Wetland Training Institute, August 2008Basic Wetland Delineation Training (40-hour), presented by the Wetland Training Institute, August 2008

Ms. Love's combined work experience and education provide a wide range of ecological training with over 15 years of experience working in the fields of habitat restoration, botany, marine biology, terrestrial and aquatic wildlife, and ecosystem inventory, assessment, and monitoring. Ms. Love's position at AECOM involves managing and coordinating habitat restoration planning and monitoring, wetland delineations and jurisdictional determinations, biological resource evaluations, botanical surveys and mapping, special-status wildlife surveys, stormwater monitoring, stream and algae monitoring, fish relocation, and database management.

Experience

Biological Resource Evaluation

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Conducted field efforts for the biology section of the Application for Certification (CEQA-equivalent document) and prepared biological resources sections for the various exhibits prepared thereafter for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying and mapping sensitive biological resources, determining the applicable laws, ordnances, regulations, and standards governing biological resources at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Gaviota Marine Terminal, Gaviota Terminal Company, Gaviota, California, 2014-Present. Lead author for the Biological Resources Assessment Report and task leader for the associated biological surveys for the 28 acre remediation and restoration project. The BRAR provided a description of existing biological resources within the Project site and surrounding area, identified any significant impacts to these resources that may result from the proposed Project, and recommended feasible mitigation measures that would avoid or substantially lessen these impacts to biological resources, including monarch butterflies. Lead author of the Conceptual Restoration Plan to restore riparian and upland habitats after remediation is completed in phases, with specific emphasis on improving foraging habitat for the monarch butterfly.

Ekwill Street and Fowler Road Extensions Project, City of Goleta, Goleta, California, 2010 – Present. Lead author of Biological Mitigation and Monitoring Plan for a road construction and extension project crossing over Old San Jose Creek. Components of the Plan include implementation of all mitigation measures including the conceptual restoration plan, native tree inventory and protection plan, pre-construction biological surveys, and avoidance and minimization measures to be implemented during project construction. Co-author of the Biological Resources Report, and lead author of the wetland delineation/jurisdictional determination section.

Wetland Delineations/Assessments and Jurisdictional Determinations Hyla Crossing, Freeport-McMoRan Oil & Gas, Arroyo Grande, California, 2013 – 2015. Field crew leader and lead author for the wetland delineation/jurisdictional determination of Pismo Creek at the Hyla crossing within the Arroyo Grande Oilfield.

Arroyo Grande Oilfield Phase V, Freeport-McMoRan Oil & Gas, Arroyo Grande, California, 2013. Field crew leader and lead author for the wetland delineation/jurisdictional determination of Pismo Creek and several unnamed drainages within the Arroyo Grande Oilfield. Lead author of off-site mitigation plan. Field crew leader and lead author for the wetland delineation/jurisdictional determination of Pismo Creek and several unnamed drainages within the Arroyo Grande Oilfield. Field crew leader for focused botanical surveys within the Arroyo Grande Oilfield. Technical reviewer for associated report.

Point Pedernales Repair Site, Freeport-McMoRan Oil & Gas, Vandenberg Air Force Base, California, 2013. Field crew leader and lead author for the wetland delineation/jurisdictional determination of three <1 acre sites along three drainages intersecting a pipeline repair site.

Gaviota Road Repair Site, Freeport-McMoRan Oil & Gas, Gaviota, California, February 2013. Field crew leader and lead author for the wetland delineation/jurisdictional determination of a <1-acre site along an unnamed tributary to Gaviota Creek intersecting a pipeline repair site.

Former Hercules Gas Plant, Shell Exploration and Production Company, Gaviota, California, 2009 and 2012. Field crew leader and lead author for the wetland delineation/jurisdictional determination for a 2-acre site along Cañada de la Huerta in 2009. Field crew leader and lead author for the wetland delineation/jurisdictional determination of a <1 acre site along Cañada de la Huerta in 2012.

Mission Village, Legacy, and Entrada Projects, Newhall Land and Farming Company, Santa Clarita Valley, California, 2012-2014. Field crew leader and lead author for the wetland delineation/jurisdictional determination of several canyons in the Santa Clara River watershed within the vicinity of the 12,000 acre Newhall Ranch site in the Santa Clarita Valley, California. Assessed the condition of the canyons using California Rapid Assessment Method (CRAM) and a methodology that was based on a combination of three established methods (CRAM, Hydrogeomorphic Approach [HGM], and Special Area Management Plan Landscape Level Functional Assessment [SAMP LLFA]). Conducted 36 riverine and 2 depresssional CRAMs.

Former Hercules Gas Plant, Shell Exploration and Production Company, Gaviota, California, July 2012. Field crew leader and lead author for the wetland delineation/jurisdictional determination of a <1 acre site along Cañada de la Huerta.

California High Speed Train Project, High Speed Rail Authority, Fresno to Bakersfield, California, September 2011. Assessed the condition of jurisdictional waters, including wetlands, along several alternative high-speed rail alignments between Fresno and Bakersfield in California's Central Valley using CRAM. The aquatic features assessed included

individual vernal pools, vernal pool complexes, and depressional wetlands located on the floor of the Central Valley, as well as riverine wetlands along the Kings River and Poso Creek. A certified CRAM instructor supervised the assessment.

Resource Management and Development Plan Environmental Impact Study/ Environmental Impact Report, Newhall Land and Farming Company, Santa Clarita Valley, California, July and August 2010. Assessed the condition of reference-quality sites, as well as a number of existing compensatory mitigation sites, in the Santa Clara River watershed within the vicinity of the 12,000-acre Newhall Ranch site in the Santa Clarita Valley, California. The assessment methodology was based on a combination of three established methods (CRAM, HGM, and SAMP LLFA).

California High Speed Train Project, High Speed Rail Authority, Bakersfield to Palmdale, California, April 2011. Performed wetland delineations/jurisdictional determinations, and GIS mapping for various segments along the High Speed Rail alignments from Bakersfield to Palmdale, California.

California High Speed Train Project, High Speed Rail Authority, Fresno to Bakersfield, California, 2010. Performed wetland delineations/ jurisdictional determinations, and GIS mapping for various segments along the High Speed Rail alignments from Fresno to Bakersfield.

San Jose Creek Bikeway, City of Goleta, Goleta, California, 2009. Field crew leader and lead author for the wetland delineation/jurisdictional determination for a 0.5-acre site in Goleta Slough.

Former Hercules Gas Plant, Shell Exploration and Production Company, Gaviota, California, 2009. Field crew leader and lead author for the wetland delineation/jurisdictional determination for a 2-acre site along Cañada de la Huerta for the project's Streambed Alteration Agreement and Section 404 Permit.

Resource Management and Development Plan Environmental Impact Study/ Environmental Impact Report, Newhall Land and Farming Company, Santa Clarita Valley, California, 2008. Assisted with the wetland delineation and mapping of jurisdictional waters within the 12,000-acre Newhall Ranch site in the Santa Clarita Valley, California. Assisted with the wetland delineation report.

Botanical Surveys and Mapping

Point Arguello Pipeline Company Repair Site, Freeport-McMoRan Oil & Gas, Gaviota, California, Spring 2015. Performed focused Gaviota tarplant (Deinandra increscens ssp. villosa) surveys for the repair and reference site. Technical reviewer for associated report.

Point Pedernales Pipeline, Freeport-McMoRan Oil & Gas, Lompoc and Vandenberg Air Force Dates, California, Spring 2014. Performed focused Vandenberg monkey flower (Mimulus fremontii var. vandenbergensis) and beach layia (Layia carnosa) surveys along 10-mile pipeline and reference locations.

Special-status Wildlife Surveys

Tidewater Goby Presence/Absence Survey, Basin E/F Tidal Basin Restoration Project, City of Santa Barbara, Santa Barbara, California, October 2010 and 2011–2012. In 2010, performed presence/absence USFWS protocol surveys for tidewater goby in Tecolotito Creek, Foxtrot Drain, and an existing tidal basin adjacent to the creek prior to construction. Medium water body protocol. Installed and monitored block nets downstream of the work area. Co-author of final report. 8.5 hours. From 2011–2012, performed post-construction presence/absence USFWS protocol surveys for tidewater goby in Tecolotito Creek and a constructed tidal basin. Lead author of final report. 24 hours.

Tidewater Goby and Fish Relocation, Santa Barbara Airport Tecolotito and Carneros Creek Relocation Project, City of Santa Barbara, Santa Barbara, California, August 2006 – November 2008. Captured and relocated tidewater gobies and other fish species from Tecolotito and Carneros Creeks. Performed initial presence/absence USFWS protocol surveys for tidewater goby in all locations prior to construction. Performed presence/absence protocol surveys for tidewater goby in all locations after construction. Medium water body protocol. Managed data collection and compilation. Included as a permitted handler on USFWS Biological Opinion 1-8-06-F-42. Assisted in authoring the final report. 145 hours.

Western Snowy Plover and California Brown Pelican Construction Monitoring, Laguna Channel Tidal Gate Repair Project, City of Santa Barbara, Santa Barbara, California, October – December 2006. Performed clearance survey prior to moving sand from near the launch area at the Santa Barbara Harbor. Monitored for impacts to the birds during construction at the tidal gate.

Habitat Restoration

Santa Barbara Airport Tidal Basin Restoration Project, City of Santa Barbara, Santa Barbara, California, 2007 – Present. Project Manager. Assisted in planning and implementing restoration for the Tidal Basin consisting of 14 acres of newly created tidally influenced habitat. Organized monitoring program consisting of point-intercept transect data collection and maintenance monitoring. Managed and analyzed resulting data. Aided with benthic macroinvertebrate sampling. Created water quality monitoring program. Lead author for annual reports detailing restoration success. Co-author of Biological Assessment. Lead author of Storm Water Pollution Prevention Plan. Currently, the restoration site has met or exceeded permit issued performance criteria.

Santa Barbara Airport Airfield Safety Projects Restoration Project, City of Santa Barbara, Santa Barbara, California, 2007–2013. Project Manager. Assisted in planning and implementing restoration for 65 acres of wetland, coastal sage scrub, and riparian habitats. Organized and implemented monitoring program consisting of point-intercept transect data collection and maintenance monitoring. Managed and analyzed resulting data. Organized native seed collection. Lead author for annual and quarterly reports detailing restoration success. Three restoration sites have been completed and met or exceeded permit issued performance criteria.

Permits

California Department of Fish and Wildlife Scientific Collecting Permit for mammals, reptiles, amphibians, vernal pool/terrestrial invertebrates, freshwater and anadromous fishes, and freshwater invertebrates #SC-10045, December 2008 – Present.

U.S. Fish and Wildlife Service Recovery Permit for Tidewater Goby (Eucyclogobius newberryi) #TE-217402-0, February 2010 – present.

California Department of Fish and Wildlife Collecting Permit for State-Designated Endangered, Threatened, or Rare Plants #2081(a)-13-35-V, April 2010 – Present.

Specialized Training

Surface Water Ambient Monitoring Program (SWAMP), field procedures and bioassessment concepts, presented by California Waterboard, April 2016

California Rapid Assessment Method (CRAM) Estuarine Module, presented by UC Davis Extension, October 2012

California Rapid Assessment Method (CRAM) Practitioner Training and Riverine Module, presented by UC Davis Extension, March 2012

Basic Wetland Delineation Training (40-hour), presented by the Wetland Training Institute, August 2008

8. Vince Menta

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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF VINCE MENTA REGARDING THE PUENTE POWER PROJECT

I, Vince Menta, declare as follows:

1. I am employed by NRG Energy, Inc. as Senior Director, Engineering and Construction, and am duly authorized to make this declaration.

2. I earned a BSME in Mechanical Engineering from University of Delaware in 1978. I have over 40 years of experience in the area of engineering, design and construction of power generation and transmission facilities. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1005: Application for Certification (AFC) Section 3.0 Transmission (CEC TN #204219-6);
- Applicant's Exhibit No. 1025: AFC Appendix A, Project Description Facilities (CEC TN #204220-1);
- Applicant's Exhibit No. 1026: AFC Appendix B, Transmission Facilities (CEC TN

#204220-2);

- Applicant's Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 14-18, 30, 37-39, 47) (CEC TN #205765);
- Applicant's Exhibit No. 1056: Supplemental Information Regarding Transmission System Engineering (CEC TN #206212);
- Applicant's Exhibit No. 1059: Applicant's Responses to City of Oxnard Data Requests Set 2 (DR 66) (CEC TN #206310);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement, Demolition of Mandalay Generating Station Units 1 and 2 (Sections 1, 2 and 3) (CEC TN #206698);
- Applicant's Exhibit No. 1070: Applicant's Responses to City of Oxnard Data Requests, Set 4 (DR 80-82) (CEC TN #207179);
- Applicant's Exhibit No. 1073: Synchronous Condenser Analysis (CEC TN #210450);
- Applicant's Exhibit No. 1076: Applicant's Responses to Robert Sarvey's Data Requests, Set 1 (DR 1) (CEC TN #210965);
- Applicant's Exhibit No. 1077: Applicant's Responses to City of Oxnard Data Requests Set 5 (DR 101-103) (CEC TN #210971);
- Applicant's Exhibit No. 1081: Final Draft AECOM Fire Protection System Study (CEC TN #212358);
- Applicant's Exhibit No. 1082: Letter re: Fire Protection System Study – Final Draft (CEC TN #212359);
- Applicant's Exhibit No. 1084: Refinement to Transmission Interconnection (CEC TN #213000);
- Applicant's Exhibit No. 1090: Puente Power Project, Project Enhancement – Outfall Removal and Beach Restoration (Sections 1 and 2) (CEC TN #213802);
- Applicant's Exhibit No. 1092: Applicant's Responses to Robert Sarvey's Data Requests, Set 2 (DR 3 - 5) (CEC TN #214303);
- Applicant's Exhibit No. 1093: Applicant's Responses to City of Oxnard Data Requests, Set 6 (DR 109, 111) (CEC TN #214330); and

- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 91-96, 99, 100, 102-107) (CEC TN #214336).

I hereby sponsor this declaration (Applicant's Exhibit No. 1102) and the above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 3, Project Description (CEC TN #214712);
- CEC FSA, Part 1, Section 4.2, Alternatives (technology alternatives) (CEC TN #214712);
- CEC FSA, Part 1, Section 4.13, Transmission Line Safety and Nuisance (CEC TN #214712);
- CEC FSA, Part 2, Section 5.1, Facility Design (CEC TN #214713);
- CEC FSA, Part 2, Section 5.3, Power Plant Efficiency (CEC TN #214713);
- CEC FSA, Part 2, Section 5.4, Power Plant Reliability (CEC TN #214713); and
- CEC FSA, Part 2, Section 5.5, Transmission System Engineering (CEC TN #214713).

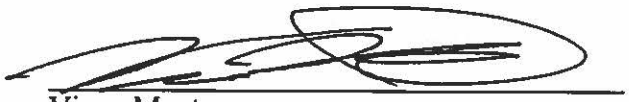
5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. I have overseen the preliminary civil, structural, mechanical, and electrical engineering design of the Project that has been undertaken to date to ensure that the Project will be built to applicable engineering laws, ordinances, regulations and standards.

7. It is my expert opinion that, with implementation of the proposed Conditions of Certification contained in the sections of the FSA identified in paragraph 4 above the design, construction, and eventual closure of the Project would comply with applicable engineering laws, ordinances, regulations and standards.

Executed on January 18, 2017, at Houston Tx.

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



Vince Menta

ATTACHMENT A

Vincent L. Menta Jr

Mr. Vincent Menta is a Senior Director of Project Development Engineering for NRG's Engineering and Construction Team. Mr. Menta has over 40 years of extensive power sector experience and has held leadership roles in power plant engineering, operations, and maintenance. His career is singularly focused on power the sector since 1975. He has held construction and engineering position with major Architect Engineering firm. In 1986 he shifted to Utility/Independent Power Producer organizations holding positions as plant engineer, plant operations manager, plant manager, Sr. Director of Operations at conventional steam and combustion turbine base power plants. He also has held senior leadership roles in central engineering supporting Reliant Energy/GenOn's operating fleet. He joined NRG via merger in 2012 where he assumed his present position in the Engineering and Construction Team.

Professional Experience:

2012 to Present **NRG Energy** **Houston, TX**
Senior Director Project Engineering – Engineering & Construction Team
Management of the Project Development Engineering Team for the NRG project portfolio including conventional steam, gas turbine combined and simple cycle, combined heat and power, energy storage, steam plant gas conversion, district heating and cooling and energy storage. Responsibilities include plant configuration determination, project development engineering, project justification, permitting support, major equipment selection, equipment & construction contract formation, evaluation of emerging technology, and due diligence for mergers and acquisition.

2007 to 2012 **GenOn Energy, RRI Energy, Reliant Energy** **Canonsburg, PA**
Senior Director/Vice President – Engineering and Technical Services (ETS)
GenOn Energy generating assets consist of 24,000MW of steam and combustion turbine based generation with a fuel mix of coal, natural gas and fuel oil. Responsibilities include plant modification project management and engineering, engineering and field support for major plant equipment inspections and overhauls, technical support to resolve plant operational and equipment issues, technical services for the fleet to include; major plant equipment condition and risk assessment program, plant heat rate and equipment performance program, root cause analysis process, quality assurance/quality control program, equipment monitoring program (SmartSignal), high energy piping & pipe hanger inspection program, plant water chemistry program, metallurgical laboratory management and drawing management process.

Provided leadership for a number of department and company improvement initiatives:

- Heat Rate tracking and improvement program – Program targets cycle isolation, and condenser, boiler and turbine performance. Developed real time operational controllable loss program. Annual fuel saving range from $3 to $6M
- Developed ETS Safety Program & Zero Accident Culture – resulting in 0 injuries since Jan 2009
- Implemented ETS Resource Management Process – Manage engineering support request and control cost. Reduced ETS annual spend by $2.0M
- Managed plant modifications projects with $200M to $300M annual spend. Projects include major boiler and turbine component replacements to minor plant upgrades.
- Lead EPRI engagement for GenOn ensuring business case for program engagement. GenOn team recognized with 2 EPRI Technology Transfer Awards in 2012
- Developed ETS processes to improve plant support & department management:
    - Major Equipment Condition Assessment Program – Formal program with documented equipment history, operational risk assessment and recommendations for inspections and upgrades.

- Water Chemistry Program – Real time monitoring of main cycle chemistry to EPRI standards. Implemented email notification for all out of spec conditions. Significant improvement in chemistry performance and reaction to out of specification conditions.
- High Energy Piping Inspection Program – Developed fleet inspection standard. Implemented program with annual funding of $5.5M with major discoveries annually.
- Engineering Process Manual – Developed standard for consistent development, engineering and installation of plant modification.

- Coordinating with Information Technology to utilizing technology to improve information availability and processes utilizing OSI PI historian.

2002 to 2007 **Reliant Energy** **Las Vegas, NV**

Senior Director – Operations / Plant Manager – Bighorn Power Plant

Responsible for operations, maintenance, safety and environmental management for Bighorn, Channelview, Desert Basin, El Dorado, Deer Park combined cycle/ cogeneration power plants (2250MW), and Houston area Land Fill Gas Plants (25MW). Provide operations oversight for co-owned Sabine cogeneration plant (110MW).

Provided leadership for the following Projects:

- OSHA Voluntary Protection Program (VPP) recognition – first in the Reliant fleet
- Managed Bighorn from start up to top performer worldwide for Siemens 501F combustion turbine fleet
- Teamed with commercial to develop successful PPAs for Bighorn
- Managed the Land Fill Gas Fleet to commercial operation and resolved technical issues improving performance to commercially acceptable levels
- Managed Siemens LTSA for Bighorn and Channelview combustion turbines maximizing value
- Asset divestiture and/or transition of the New York plants, Desert Basin, El Dorado, Liberty & Landfill Gas plants to new ownership
- Acquisition Team Technical Lead – Assessed condition of the plants and developed capital and O&M budgets to match commercial requirements
- Early Equipment Detection System Project Management – Largest fleet rollout of the SmartSignal product in the power industry
- RRI Fleet Benchmarking – Co-team leader for study highlighting gaps to top quartile/decile performing operating fleet.
- Reliant Values in Action Program – Co-team leader- developed company program celebrating employees living the Reliant values
- Non Exempt Operations and Maintenance Progression Program – successfully facilitated program implementation with plant leadership and Human Resources.
- Implemented the RRI Maintenance Processes to fleet leading performance
- Local 66 contract negotiations – Successfully transitioned the local to competitive wage package and onto the Reliant benefit program

1996- 2002 GPU Generation Corp/Sithe Energy/Reliant Energy
Milford, NJ
General Manager - Gilbert, Glen Gardner, Sayerville, Werner, Forked River Power Plants
Responsible for plant general management, including safe, efficient and reliable plant operation, environmental compliance, safety compliance, financial performance, labor relations and training. The five generating plants consist of gas & oil fired steam, combined cycle, simple cycle plants with a capacity of approx 1440 MW.

A major accountability has been to effectively transition the plants into the competitive market by educating the employees, controlling cost, and reducing staff, while maintaining plant availability and reliability at high levels.

1986 -1996 GPU/Met-Ed Reading, PA
Operations Superintendent / Plant Engineer – Titus Power Plant
Responsible operations and station engineering for three 80 MW coal fired steam units and two 18 Mw combustion turbines. Accountabilities include safe, efficient plant operations, environmental compliance, management of heat rate and performance program and management of plant modifications. Interface with bargaining union leadership on all issues affecting the departments and handling all first step grievances.

1980-1986 United Engineers & Constructors, Valley Forge, PA
Mechanical Engineer
Design office responsibilities include power plant system design engineering and analysis, equipment purchase and installation specification preparation, contract and purchase order technical administration.

Field responsibilities include plant outage coordination, contractor supervisions, and construction engineering support at various power plants within the United States and several international locations.

1979-1980 Stone&Webester Engineering Corp. Cherry Hill, NJ
Mechanical Engineer- River Bend Nuclear Project
Performed system engineering, prepared equipment specifications and technical administration for purchase orders.

1975-1979 Bechtel Power Corp. Hancocks Bridge, NJ
Piping Engineer - Hope Creek Nuclear Project
Responsible for the installation and testing of piping systems and the design and installation of temporary piping systems to support construction activities.

Education **1978 -** BSME, Mechanical Engineering, University of Delaware, Newark DE

9. Phil Mineart

Michael J. Carroll
LATHAM & WATKINS LLP
650 Town Center Drive, 20th Floor
Costa Mesa, California 92626-1925
Tel.: (714) 540-1235
michael.carroll@lw.com

Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF PHILLIP MINEART REGARDING COASTAL AND RIVERINE HAZARDS

I, Phillip Mineart PE, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I earned a Bachelor of Science degree in Environmental Engineering from Humboldt State University in 1979 and a Master of Science degree in Civil Engineering from Cornell University in 1983. I have over 30 years of experience in the fields of hydrologic, hydraulic and hydrodynamic analysis, erosion and sediment transport modeling, environmental restoration, risk assessments, climate change and sea level rise. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1010: Application for Certification, 4.4 Geological Hazards and Resources (Tsunami) (CEC TN #204219-11);

- Applicant's Exhibit No. 1021: Application for Certification (AFC) Section 4.15, Water Resources (CEC TN #204219-22);
- Applicant's Exhibit No. 1042: AFC Appendix N, Water Resources (N-2) (CEC TN #204220-14);
- Applicant's Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 41) (CEC TN #205765);
- Applicant's Exhibit No. 1059: Applicant's Responses to City of Oxnard Data Requests Set 2 (DR 47 – 65, 67) (CEC TN #206310);
- Applicant's Exhibit No. 1061: Applicant's Responses to City of Oxnard Data Requests Set 2, 30-Day Extension (59, 60, and 62) (CEC TN #206533);
- Applicant's Exhibit No. 1070: Applicant's Responses to City of Oxnard Data Requests Set 4 (DR 83 – 90, 92 - 94) (CEC TN #207179);
- Applicant's Exhibit No. 1077: Applicant's Responses to City of Oxnard Data Requests Set 5 (DR 95 – 99) (CEC TN #210971);
- Applicant's Exhibit No. 1086: Response to Recommended Specific Provisions in August 26, 2016 Proposed Report (CEC TN # 213624);
- Applicant's Exhibit No. 1087: Comments on California Coastal Commission Report to California Energy Commission on AFC 15-AFC-01 - NRG Puente Power Project (CEC TN # 213625);
- Applicant's Exhibit No. 1088: Final NRG Comment Letter to California Coastal Commission re Agenda Item F10a; Sept. 9, 2016 (CEC TN # 213626);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC Log No. TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.2) (CEC TN #213802); and
- Applicant's Exhibit No. 1093: Applicant's Responses to City of Oxnard Data Requests Set 6 (DR 104 - 108) (CEC TN #214330).

I hereby sponsor this declaration (Applicant's Exhibit No. 1116) and the above-referenced

Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.11, Soil and Water Resources (portions pertaining to coastal and riverine flooding) (CEC TN #214712);
- CEC FSA, Part 1, Appendix SW-1, Soil and Water Resources, Effects of Climate Change and Coastal Flooding on Puente (CEC TN #214712);
- CEC FSA, Part 1, Appendix SW-3, Soil and Water Resources, Estimating Flushing Times (CEC TN #214712); and
- FSA, Part 2, Section 5.2, Geology and Paleontology (portions pertaining to flooding and tsunami) (CEC TN #214713).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Site Elevation.* The Mandalay Generating Station ("MGS") site, of which the Project site is a part, is located at an elevation of between 12 and 14 feet (NAVD88). Relative to the local tidal datums, the MGS site is approximately 7-9 feet above Mean Higher High Water (MHHW) and 11-13 feet above Mean Lower Low Water (MLLW). The Project site is on the higher portion of the MGS site (~14 feet) and is, therefore, approximately 9 feet above MHHW. Compared to the local active tide gages (Santa Barbara and Santa Monica), the Project site is over 5 feet higher than the highest observed water level (8.31 feet in November 1982).

b. *Flooding Risk*. Potential sources of flooding risk for the proposed Project site are the Santa Clara River (riverine flooding) if it overtopped its banks, or coastal flooding if a large storm in the Pacific Ocean overwhelmed the beach and dunes fronting the site. The entire MGS site, including the proposed Project site, is outside the FEMA 100-year floodplain from either of these potential sources, riverine or coastal flooding.

i) *Riverine Flooding*. If the Santa Clara River were to overtop its banks, flood waters would need to flow overland 2 to 3 miles before reaching the MGS site, and would be expected to be shallow. As shown on FEMA's Flood Insurance Rate Map (FIRM) Community Panel Numbers, No. 06111C0885E and 06111C0905E (Effective Date of January 20, 2010), a portion of the MGS site, including a very small portion of the Project site on which nothing is planned for development, is shown in the FEMA "Zone X – Other Flood Areas" (areas protected by levees from 1 percent annual chance flood, areas of 0.2 percent annual chance flood; areas of 1 percent chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile). For the MGS site, including the Project site, this flood hazard zone would be best described as an area of 0.2 percent annual chance flood, which corresponds to the 500-year floodplain, or an area of 1 percent chance flood (i.e., 100-year flood event) with average depths of less than 1 foot.

ii) *Coastal Flooding*. The other potential source of flooding, coastal flooding, is shown on the 2010 effective FEMA maps at the MGS site as a VE zone. VE zones are defined as "areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action." Unlike the more common AE zones, which show the depth or elevation of flood water, VE zones show the elevation of wave run-up. The effective FIRM shows a VE zone with a value of 13 feet. FEMA is in the process of updating FIRMs for Ventura County. FEMA's Draft Work Map, which was included in the PSA as Soil & Water Figure 5 (PSA, p. 4.10-37), and is the precursor to preliminary maps, shows the VE zone has increased to 20 feet. This wave run-up level at 20 feet represents the ocean still water level (water level excluding waves) of approximately 7 to 9 feet in elevation plus the level of wave run-up on the beach, not the level of flooding. If FEMA determined that a

dune would be overtopped by wave run-up (e.g., dune was lower in elevation than the VE zone), FEMA would include an estimate of the depth of flooding on the back side of the dune due to the water that overtopped the dune, typically shallow flooding of a few feet (not the elevation of the VE zone). FEMA did not include any flood zones on the back side of the dune since no overtopping was predicted. . The dunes directly in front of the Project site are over 100 feet in width, and thus any future overtopping of shallow water, if it were to occur, would have to travel a significant distance prior to reaching the Project site. It is also overly simplistic to assume that 2 feet of SLR will result in a wave run-up level that is 2 feet closer to the top of the dune, because the dune itself could accrete and grow in size as demonstrated from the review of historic aerial photographs since 1947.

c. ***Coastal Erosion.*** The Project site is protected by coastal dunes immediately west of the MGS property, and by an artificial berm along the site's northern boundary. With respect to the coastal dunes, sediment discharge from the Santa Clara River has comprised the majority of the shoreline sediment supply, with sand bypassing from Ventura Harbor a secondary source. Based on a review of historic aerial photographs, since 1947, the beach fronting the MGS property has increased in width by more than 300 feet. The estimated width was calculated as the distance from the outfall headwall to the water line at the time of each photo. The estimate is approximate because the water level changes with the tides and season; however, all the photos, taken at different times over the decades, are consistent in showing the continual increase in beach width. In the 1950s and 1960s, a paved road ran along the beach just above the outfall headwall. The road is currently buried about 3 to 4 feet beneath the sand (based on an exploratory excavation done in 2014). It can be seen by comparing historic photos that the dunes have expanded farther towards the beach and ocean, and the old road is now partially covered by new dunes, indicating an increase in beach volume as well as width. The dunes' growth would appear to have been limited primarily by the outflow from the MGS outfall, rather than by erosion caused by extreme water levels or storms. This is indicated by the larger width in the dune field farther south from the outfall, where the outfall discharge impacts the beach less.

The January 1983 El Nino storm and other large storm events have occurred in the past, and the resulting waves and storm surges have had no identifiable impact on the MGS site – there was no flooding and no impact to MGS operations. Since the 1983 event, the beach fronting the MGS site has accreted and is now wider than it was in 1983. In addition, foredunes have formed and stabilized farther out towards the ocean. Thus, under current conditions, the Project site is not more vulnerable to coastal hazards than it was in 1983, but is actually less vulnerable. Under current conditions, the Project site is protected by a beach that is 300 feet wide, with dunes that are 20 to 30 feet high. If the same event occurred today, the waves would break onto a wider beach and would need to erode the newly formed foredunes before impacting the main dunes protecting the Project site. Given that no damage occurred in 1983, it is unlikely that any damage would occur under current conditions.

d. *Sea Level Rise*. I have analyzed the potential effects of long-term sea level rise (SLR) on the Project. For historical perspective, during the period of 1933-2016, SLR has been 0.005 foot per year (1.52 millimeters per year (mm/yr)), as measured at the Santa Monica gage. This amounts to about 3.6 inches since construction of the original MGS power plant approximately 60 years ago. Although the historical rate of SLR is less than the predicted future rate, the fact that the beach has grown in width notwithstanding SLR indicates a stable beach. I also note that for the projected SLR scenario of 24 inches by 2050 to occur, the rate of SLR would need to increase by almost than tenfold over recent historical levels.. If the supply of sand from the north is not sufficient to keep up with SLR, the beach will contract. The existing slope of the beach averages approximately 3 percent, based on the 2013 LiDAR data. Assuming the high-scenario SLR of 24 inches by 2050, and that the beach slope remains the same, the beach would be expected to shrink by about 70 feet (24 inches/0.03/12 inches/foot) by 2050. For the FEMA VE zone calculations a beach slope of 10% was used. In this case the beach erosion is expected to be 20 feet. Over the expected 30-year life of the proposed Project (2020 through 2050), the high-scenario SLR rate is considered to be extremely conservative, considering that recent historic rate of SLR is considerably less than the predicted future rate. Assuming the low or medium SLR scenarios, the estimated beach

reduction would be on the order of about 20 or 45 feet, respectively. The *2013 Coastal Resilience Study* (specifically, Figure 16 in that report) shows that the sediment yield from the Santa Clara and Ventura Rivers should remain about the same as the historical yield until about 2050. Thus, the existing data indicate that loss of beach is unlikely to occur over the life of the Project, and even under the most conservatives analysis, the width of the beach fronting the MGS site would continue to be over 200 feet wide.

e. *Tsunami*

Studies of distant earthquakes (teletsunamis) indicate that the Project site is unlikely to be in the inundation zone. Studies of tsunamis generated by local earthquakes indicate that the site is unlikely to be in an inundation zone for "frequent" events (events with return periods of 1,000 to 1,500 years or less). Studies that used conservative assumptions indicate that the Project site might be in an inundation zone for less frequent events, e.g., 2,500-year return period; however, the predicted water level is lower than the top of the dunes. Analysis of return periods for various tsunami sources indicate return periods of between 800 and 10,000 years. In all cases, the maximum projected wave height is well below the top of the existing dunes that protect the Project site.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification SOIL&WATER-6, GEO-1, GEO-2, GEN-1, GEN-5 and CIVIL-1 contained in the CEC FSA, Parts 1 and 2 (CEC TN #214712 and #214713), the Project, as proposed, can be designed and constructed to withstand the potential effects of flooding from both coastal (including tsunami) and riverine sources, including any effects resulting from or exacerbated by projected sea level rise over the anticipated life of the Project. Furthermore, in my expert opinion, the Project will not result in any significant direct, indirect or cumulative environmental impacts related to coastal (including tsunami) or riverine flooding, , and will not exacerbate any potential effects that might result from such hazards. In my expert opinion, the Project will comply with all applicable laws, ordinances, regulations and standards pertaining to

coastal and riverine hazards.[1]

Executed on January 18, 2017, at Oakland, California.

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

Phillip Mineart, PE

[1] The CEC FSA, Part 1, Section 4.7, Land Use, includes discussion regarding the status of the City of Oxnard 2030 General Plan Land Use Element Policy SH-3.5, and its applicability to the Project. Much of this discussion pertains to legal issues that are beyond the scope of this declaration, and as to which I offer no opinion herein. However, I am of the opinion that the Project as proposed will not be "threatened by . . . flooding or coastal hazards including tidal inundation, storm wave run-up, beach and dune erosion or retreat, and/or tsunami inundation," which are the risks Policy SH-3.5 appears to be intended to address.

ATTACHMENT A

AECOM

Phillip Mineart, P.E.
Hydrology, Hydraulics, Environmental Restoration and Water Quality

Areas of Expertise

Water Resources
Mathematical Modeling
Hydrology and Hydraulics

Education

MS/Civil Engineering/1983/Cornell University
BS/Environmental Resources Engineering/1979/Humboldt State University, Arcata, CA

Licenses/Registrations

Professional Engineer/CA/ #C44087/6/30/2017

Years of Experience

With AECOM (Formerly URS) 32
With Other Firms 2

Professional Associations

American Geophysical Union
American Society of Civil Engineers
American Water Resources Association

Mr. Mineart is a registered Professional Engineer in California. He has over 30 years of experience in the fields of hydrologic, hydraulic and hydrodynamic analysis, erosion and sediment transport modeling, environmental restoration, risk assessments, climate change and sea level rise. Below is a summary of his experience.

Experience

Coastal and Hydrodynamics

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Water Resources section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included analyzing impacts of flooding due to sea level rise, tsunamis, and riverine sources. Analysis also included coastal hazards such as impacts from beach and dune erosion and/or accretion.

Sediment Transport and Tidal Flow Study for Facility Improvements to the Ammunition Pier and Turning Basin, Project Manager, Seal Beach Ca., 2016. The study purpose was to determine if proposed improvements at the Seal Beach Naval Weapons Station could alter the hydrodynamic regime and sediment dynamics as changes in the tidal currents, waves, or sedimentation patterns and impact coastal resources and/or the Seal Beach National Wildlife Refuge (SBNWR). Hydrodynamic models for tidal flow and sediment transport were developed. In addition, a wave model was developed to determine potential Surfside and Sunset Beach impacts. This study is intended to support the Environmental Assessment currently underway.

Port of San Francisco, Sea Level Rise Study, Coastal Engineer, San Francisco, CA, 2011. Determined the 100-year design water levels (Still Water Level and Wave Runup) along the Port of San Francisco shoreline, under various scenarios of Sea Level Rise. The DHI-MIKE21 Nearshore Wave model was used for wind-wave generation, and the Delft SWAN wave model was used for breakwater analysis. The DHI-MIKE21 hydrodynamics model was used for still water level analysis. Flood inundation maps of the estimated 100-year flood at present day, in year 2050, and year 2100 were developed. The maps were used to identify locations along the shoreline that could be subject to flooding or wave damage under future sea levels. Boundary conditions were obtained from NOAA tidal gauges and wave buoys, NWS wind data, and DWR Delta outflow data.

Port of Oakland, Oakland Airport Perimeter Dike Wave and Water Level Analysis in San Francisco Bay, Hydrodynamic Task Leader, Oakland, California, 2008. This Project involved modeling with DHI-MIKE21 Near-Shore Waves model, data analysis of water level and wave runup return frequency, and analysis of levees for sufficient crest height and riprap armor

stability. Analysis was conducted for existing conditions and projected future conditions including sea level rise.

State Coastal Conservancy, South Bay Salt Ponds Restoration Project – Phase II, Senior Hydraulic Engineer, Southern San Francisco Bay, CA, 2012 – Ongoing. Responsible for hydrodynamic and sediment transport analysis for development of conceptual (10%) designs for restoration of former Cargill salt ponds in three pond complexes around southern San Francisco Bay. One and 2-dimentsional hydrodynamic modeling was conducted to develop optimal breach and channel sizes. Preliminary sediment transport analysis was conducted to aid in the decision on whether to use dredge material raise the level of subsided ponds or if natural sedimentation would be able to raise the level of the ponds in the presence of sea level rise.

Chevron, Kitmat LNG Project, Senior Hydraulic Engineer, 2014. URS developed a 3-dimensional hydrodynamic and sediment transport model of Clio Bay in British Columbia, Canada. In additional to the numerical modeling the project also included field data collection and laboratory analysis. The modeling and data were used to predict the behavior of soils excavated from the Kitimat LNG site, if the excavated materials were released from split-hull barges into Clio Bay with the objective of benthic habitat restoration. The computer modeling was used to predict the behavior of material single and multiple releases from barges and bottom mounding (STFATE and MDFATE models) and the dispersion of the suspended portion throughout Clio Bay (EFDC model).

San Francisco Public Utilities Commission (SFPUC), Tidal Power Feasibility Study, Technical Lead, San Francisco, CA, 2007. Technical lead for the hydrodynamic modeling of the San Francisco Bay to determine total extractable energy and percent of energy that can be extracted from tidal currents without adverse impacts to the Bay's tidal prism and overall ecosystem. The MIKE 21 model was used for two-dimensional modeling; the TRIM model was used for three-dimensional modeling.

Chevron, Castro Cove Sediment Remediation Project, Hydrodynamic Modeling Lead Engineer, Richmond, CA, 2012. Castro Cove is a small cove along the northern shore of San Francisco Bay. URS developed a remediation design for a contaminated mud flat. The mud flat was isolated from the tides during construction by a sheet pile wall. After remediation was complete URS developed a two-dimensional hydrodynamic model of Castro Cove including the sheet pile wall to determine the best approach to remove the sheet pile to minimize erosion of the remedial cap as each sheet pile was removed. The suggested approach was used in the removal of the sheet pile and remedial cap remained intact as the tide was gradually allowed to return to the construction site.

Knik Arm Bridge and Toll Authority, Knik Arm Crossing Hydrodynamic Study for EIS, Technical Leader, Anchorage, AK, 2005 – 2008. Developed two-dimensional hydrodynamic and sediment transport models for Knik Arm near Anchorage, Alaska. Knik Arm experiences 30-foot tides and has extremely large sediment inputs making modeling challenging. Model was calibrated to both historic and data collected specifically for this project. State-of –the-art sediment shear stress data were collected to aid in calibration. Modeling was conducted using the MIKE21 model.

Federal Aviation Administration (FAA), San Francisco Airport Reconfiguration EIR/EIS, Technical Leader, San Francisco, CA, 1999 – 2003. Technical leader for the hydrodynamic and sediment transport analysis for the San Francisco Airport Reconfiguration EIR/EIS. Two-and three-dimensional hydrodynamic models were developed using MIKE21 and TRIM. The models were calibrated/validated to over 30 current stations with a least 29 days of record, 7 suspended sediment stations with 5 months or longer records and 18 tide stations. The model study was used to predict changes to currents, sediment transport and morphology of the Bay due to the project. Mr. Mineart provided technical review for the concurrent water quality analysis of PCBs, Mercury, and trace metals. PCBs and Mercury were modeled using the MIKE two-dimensional sediment transport model, trace metals were simulated using the MIKE21 heavy metals model.

U.S. Department of the Interior (DOI), Bureau of Reclamation (USBR), San Joaquin River Restoration Program Reach 2B and Mendota Pool Bypass Project, Task Leader Water Resources and Climate Change Sections, Fresno and Madera Counties, CA, 2009 – Est. 2015. This project primarily involves developing project alternatives, preparing an Environmental Impact Statement/Environmental Impact Report (EIS/EIR), and providing permitting support for the project. Components of the project include increasing channel capacity, incorporating riparian habitat, and providing fish passage through the reach via the modification of existing structures, installing fish screens and diversions, and constructing a new channel. Mr. Mineart is responsible for the completion of the water resources section of the EIR/S (hydrology, geomorphology and water quality) and the climate change sections.

Elkhorn Slough Foundation, Parsons Slough Sill Project, Senior Hydraulic Engineer, Monterey County, CA, 2009– 2010. Provided senior technical review and over site for hydraulic modeling and scour analysis of Elkhorn Slough and Parsons Slough near Monterey CA. The analysis was used to aid in the design of an adjustable sill structure at the mouth of Parsons Slough to limit erosive tidal energy in Parsons Slough while allowing for sufficient flushing to maintain water quality. Results from the HEC-RAS model were analyzed to evaluate whether design alternatives would meet specified design criteria. The scour analysis was conducted to determine if the project would result in increased erosion at the proposed structure or at a nearby by railroad bridge.

Bremerton Naval Complex Erosion Protection Study, Technical Lead, Bremerton, WA, 2009 – 2012. A riprapped embankment was replaced with a soft bank sloped beach covered with approximately a 3-foot layer of a sand-gravel mix. Subsequent to the action, erosion was observed and a 3-foot layer of the sand-gravel mix was mostly gone. The objectives of the project are to provide an engineering study, develop alternatives and a construction design, specification, and cost estimate that will provide long-term protection of the area. A field program was conducted to collect wave, current and tidal data. A beach erosion model was developed to predict erosion of the beach under historic conditions and to model alternative solutions.

US Navy, Site 10 Shoreline Erosion Study and Five-Year Review, Lead Coastal Engineer, Indian Island, WA, 2009– 2010. The objective of this study was to develop and evaluate alternatives for preventing future shoreline erosion at the remediated and capped Northend landfill on Indian

Island on Port Townsend Bay, WA. Previous methods used on the "high energy" portion of the beach had failed. The technical approach for meeting the objectives included performing a records and literature review to obtain data, performing field reconnaissance of the site, developing shoreline erosion protection alternatives, and performing a comparative analysis of the alternatives. A conceptual design and cost estimate for the recommended alternative was developed.

ARCO, Army Creek Marsh Remediation Project, Senior Hydraulic Engineer, New Castle, DE, 2009– 2010. Oversaw the development of a two-dimensional hydrodynamic model of a muted tidal wetland located on Army Creek, near Delaware Bay, in Delaware. Water levels in Army Creek Marsh were simulated using the two-dimensional MIKE 21 flow model. The digital terrain input consisted of a flexible mesh. Existing conditions were modeled with a tide gate structure that only allowed flow out of the marsh. Water levels computed for existing conditions were used to evaluate the proposed restoration plan, which consists of the excavation of contaminated material and re-grading as necessary to allow for a range of marsh habitat. Potential future water levels at the restoration site were also evaluated with the tide gate operating to allow tidal flows into the marsh.

California Department of Fish & Game, Napa Plant Site Saltpond Restoration Project, Senior Technical Reviewer for Hydraulics and Hydrology, Napa County, CA, 2005-2010. Provided technical review and oversite for hydrodynamic and salinity modeling and sediment transport studies for approximately 1,400 acre restoration of former saltwater evaporation ponds along the Napa River, near Napa, CA. The project area contained three separate units. Models were developed for each unit. Salinity modeling was conducted as part of permit compliance to insure that there would be no adverse impacts to the surround water bodies after breaching the former salt ponds.

Mt. View Sanitary District and Shell Oil Spill Litigation Trustees, Peyton Slough Studies, Task Leader, Martinez, CA, 1986-87 and 1994-95, 2008. Directed hydraulic and hydrologic study of Peyton Slough and surrounding wetlands, which receives wastewater wetland effluent. Modeled hydrologic scenarios to predict plant community response and evaluate restoration options. Developed MIKE11 model to analyze hydraulic capacity of the channels and develop specifications for hydraulic control facilities.

U.S. Steel, U.S. Steel Shearwater Remediation Project, Technical Lead, South San Francisco, CA, 1999 – 2002. Analyzed potential for erosion at the U.S. Steel Shearwater Remediation Project site at Oyster Cove in the San Francisco Bay. Determined hydraulic parameters used to calculate erosion of remediation cap in the sub-tidal zone from RMA2, a two-dimensional finite element hydrodynamic model. Evaluated potential for erosion in the intertidal zone based on the stability of the sandy slope.

Public Service Enterprise Group (PSEG), Dennis Township Wetland Restoration Project, Hydrodynamic Modeler, Delmont, NJ, 1994-95. Developed two-dimensional RMA2 model for abandoned hay farm along Delaware Bay. The model was used to analyze and design new channels and levee breaches that would optimize chances for successful restoration.

Public Service Enterprise Group (PSEG), Thompson's Beach – Maurice River Township Wetland Restoration Project, Hydrodynamic Modeler, Delmont, NJ, 1995-96. Developed two-dimensional RMA2 model for

abandoned and flooded hay farm along Delaware Bay. The existing levees has breached in several locations resulting in a severely muted tidal condition. The model was used to analyze and design new channels and levee breaches that would optimize chances for successful restoration.

Hayward Area Recreation and Park District, Hydraulic Analysis, Oliver Brothers Wetland Enhancement Project, Task Leader, Hayward, CA, 1996-2003. Evaluated existing hydrologic conditions and developed hydraulic design (e.g., culverts, channels) for adjacent wetlands. Plan integrated endangered species habitat enhancement with protection and interpretation of cultural resource values and public access.

Flooding and Hydrodynamics

State Coastal Conservancy, Bay Area Extreme Storm, Project Manager, 2014. AECOM developed a definition for an extreme storm event for the Bay Area. Hydrologic and hydraulic models were developed for major streams in the Bay Area including most streams in Santa Clara County; Lower Walnut Creek in Contra Costa County, San Francisquito Creek in San Mateo County, San Anselmo Creek in Marin County and San Francisco Bay. Results from these analyses were supplemented with a review a FEMA and local hydrologic flood studies to develop inundation depths and durations for major urban areas around the Bay Area. These were used by economists to estimate the potential damage from an extreme storm event.

Santa Clara Valley Water District, Almaden-Calero Canal Hydrology Study. Ongoing. The Almaden-Calero Canal is used to transport water from Almaden Reservoir to Calero Reservoir. Both reservoirs are used for water supply. A continuous simulation HEC-HMS model is being developed to estimate the inflow into the canal from storm water runoff. A long period of rainfall will be simulated and then used to generate a frequency curve for runoff into the canal.

State Coastal Conservancy and California American Water, Carmel River Reroute and San Clemente Dam Removal Project, Senior Review, Monterey County, California, 2008 – present. This project includes design and geotechnical exploration services for the San Clemente Dam Removal Project. The project will meet the steelhead passage and dam seismic safety goals through the removal of the dam, relocation of accumulated sediment in San Clemente Creek, and restoration of San Clemente Creek to pre-dam conditions. A portion of Carmel River will be permanently bypassed by cutting a 450-foot-long channel between Carmel River and San Clemente Creek, approximately 2,500 feet upstream from the dam. Mr. Mineart provided senior oversight for the hydraulic, flood inundation and sediment transport analyses. The sediment transport analysis included estimating the changes in morphology of the Carmel River with and without the project and how those changes could affect flooding. Analysis included the implementation of the HEC-HMS, HEC-RAS and SRH-1D models.

City of Daly City, Mussel Rock Landfill Stormwater Evaluation, Task Leader, 2015. Mussel Rock Landfill is a closed landfill located on the Pacific Ocean coastline in Daly City. The goal of the project was to evaluate the adequacy of the existing storm drain system under existing and future climate change conditions, recommend upgrades if needed and evaluate the adequacy of the adjacent seawall with sea level rise. An XPSWMM model was developed for the drainage system based on as-built drawings

and a field inspection. A range of design storms were simulated from a 2-year event to a 100-year event for existing climate conditions and accounting for climate change to the year 2050. Wave runup calculations were conducted for the seawall with and without sea level rise.

California Coastal Conservancy, Santa Clara River Restoration, Project Manager, Ventura County CA, 2003-2005. Technical Leader for hydrology and hydraulic analysis of the restoration of the Santa Clara River in Ventura County. He developed a water balance model for the river to identify all major sources and sinks of flow into and out of the river. A HEC-RAS hydraulic model of about 20 miles of the river was developed. A continuous simulation HEC-HMS hydrology model for the 1000+ square mile watershed was also developed.

Bay Area Rapid Transit (BART). Letter of Map Revision (LOMR). Alameda County. Hydraulic engineer responsible for completing and submitting LOMR application to FEMA. LOMR application was submitted as part of the Warm Springs Extension Project. A section of the project passed through a FEMA mapped floodplain that had been modified by previous projects, completed by others, but never remapped. LOMR was accepted by FEMA and the BART project area was removed from the floodplain.

City of San Jose. CLOMR and LOMR Application. San Jose, CA. A Conditional Letter of Map Revision (CLOMR) was submitted to and accepted by FEMA for a project undertaken by the City at a location adjacent to Coyote Creek in San Jose. After construction of the project was complete a Letter of Map Revision application was submitted to FEMA for review. The LOMR is still under review by FEMA.

Pacific Gas and Electric Company (PG&E), L400/402 Cache Creek Erosion Study, Project Manager, Yolo County, CA. Since the original installation of natural gas pipelines in the 1960s Cache Creek has incised almost 20 feet endangering the safety of the pipelines. URS conducted an assessment of the geomorphology, geologic and geotechnical conditions in the vicinity of the gas pipeline crossings. The study included an evaluation of the channel dynamics, stream hydraulics and erosion and sediment transport potential in the vicinity of the pipeline crossing. The study was updated in 2014 prior to repair of the pipeline crossing.

Pacific Gas and Electric Company (PG&E), Hydrologic Services Pipelines Crossing L400/401, L-400 MP 141.7, Project Manager, Tehama County, CA, 2014. In 2012 during an inspection of its natural gas pipelines the clearing crew discovered that about 50 feet of the pipeline was exposed in Salt Creek. The purpose of the project was to evaluate the causes of the exposed pipeline and determine possible repairs to protect the exposed pipeline. A field inspection with a hydrologist and geomorphologist was conducted; historic data including aerial photographs and historic surveys were analyzed; and hydrology and hydraulic modeling and sediment transport capacity was calculated. Based on the analysis possible protection measures were provided.

Rhodia, Inc., Rhodia-Peyton Slough Remediation and Restoration, Technical Leader, Martinez, CA, 2000 – ongoing. Technical lead for the design and analysis of a tidal channel, tide gates, groundwater water balance, and wetland design as part of a large remediation project in Martinez, CA. The tidal channel feeds over 100 acres of wetlands and ponds. Unsteady HEC-RAS, RMA2 and MIKE21 models were used in the

analysis of the channels, ponds and wetland. For the water balance analysis three double ring infiltrometers were installed to estimate infiltration rates. Two underwater seepage meters were installed to estimate seepage to groundwater from pond bottoms. Conducted screening level fate and transport groundwater modeling and participated in the review of higher level fate and transport modeling. Since construction was completed adaptive management activities have been conducted include shoreline repairs, data collection and erosion control.

Department of Water Resources (DWR), Delta Risk Management Strategy (DRMS), Hydrologic Engineer, Sacramento – San Joaquin Delta, CA, 2005 – 2009. This project was a comprehensive risk analysis of the Sacramento-San Joaquin Delta and Suisan March including the development of risk management strategies. The hazards included earthquakes, flooding, subsidence, normal operating conditions "sunny weather", and climate changes. The consequences of levee failures in the Delta include impacts to: the levee integrity, the water quality, the water reliability for export, the ecosystem, and the direct and indirect economic impacts. As a participant on the flood hazards working group Mr. Mineart helped develop innovative methods based on probabilistic models to identify flood risks to levees from storms and waves. The study assessed the risk due to the above stressing events for 50-year, 100-year and 200-year time horizons. Since the hydraulics in the Delta is strongly influenced by tidal conditions, sea level rise was incorporated into the future predictions of tides in the Delta. For stormwater runoff into the Delta, estimates from global climate models for future rainfall volumes and patterns were used to adjust flood frequency curves to account for changes that may occur by the year 2050 and 2100.

Kinder-Morgan, Inc., Rodeo Creek Stream Restoration, Project Leader, Contra Costa County, CA, 2003-2004. Project leader for stream restoration project on Rodeo Creek in Contra Costa County, CA. Rodeo Creek is deeply incised and URS developed environmentally friendly restoration techniques. Mr. Mineart directed the HEC-RAS and HEC6 analysis to estimate the long term erosion of the channel with and without mitigation. He conducted rainfall frequency analysis and HEC-HMS analysis. He analyzed the sediment transport capacity of the creek for major rainfall events in last 15 years. He oversaw development of alternative restoration measures.

Granite Rock, Wilson Quarry Inundation Study, Senior Engineer, Aromas, CA, 2011. Provided senior review of flood inundation study for the Pajaro River in San Benito County, Ca. GIS was used to develop cross-sections for a HEC-RAS model. A flood frequency analysis was performed using peak flows measured at a near-by USGS gage to obtain peak flow rates associated with the 100-year, 500-year, and 1,000-year floods.

U.S. Army Corps of Engineers (USACE), Natomas Levee Risk Assessment Methodology, Hydraulic Engineer, Nationwide, 2007 – 2008. As part of the USACE’s efforts to inventory and evaluate flood protection systems throughout the United States, URS developed probabilistic based tools to assess risk of failure due to wave or river erosion of levees. Mr. Mineart was Technical Leader for developing the methods to incorporate into the model for current and wave erosion rates.

City of Santa Barbara, Santa Barbara Airport Runway Safety Project, Task Leader, Santa Barbara, CA, 2003-2008. The Santa Barbara Airport is in the floodplain of five creeks and is immediately adjacent to extensive wetlands. Mr. Mineart developed sediment transport and hydrodynamic models of the streams and wetlands around Santa Barbara Airport to analyze alternative options for lengthening the safety area of the airport's main runway. A storm drain model using SWMM was developed to produce a storm drainage master plan for the airport property. A HEC-RAS model was developed to estimate flooding of the airport property and to complete a CLOMR and LOMR process for FEMA.

Calpine Energy, Flood Inundation Study for Pastoria Energy Facility, Task Leader, Grapevine CA, 1998 – 2000. Task leader for water resources section of the Pastoria Energy Facility AFC. Mr. Mineart's responsibilities included hydrology, flood analysis, water quality and development of mitigation measures. The hydrology and flood study included analysis of existing rainfall and flow data, development of design storm hydrographs, and implementation of the HEC-RAS model for flood plain delineation. Mitigation measures were developed to reduce the potential for flooding at the proposed facility site.

Roseville Energy LLP, Roseville Energy Facility AFC, Water Resources Task Lead, Roseville, CA, 2000 – 2002. Evaluated the potential for impacts as a result of construction and operation of the Roseville Energy Facility to assist in preparation of the Application for Certification. Proposed mitigation measures to minimize impacts to receiving waters from stormwater runoff. Measures included the implementation of Best Management Practices to control erosion, sediment, and other pollutants, as specified for compliance with the Stormwater Pollution Prevention Plan.

Sunrise Power Company, Sunrise II Power Project, Water Resources Task Lead, Bakersfield, CA, 2001 – 2004. Completed the Water Resources section of the Application for Certification of the Sunrise II Power Project. Compiled application for Underground Injection Control Program permit for deep well injection of wastewater.

City of Albany, Curtis-Neilson Storm Drain Analysis Project, Project Manager, Albany, CA, 2006 – 2007. Oversaw the development of an XPSWMM model for portion of the City of Albany's storm drain system. The model was used to identify local bottlenecks and to aid in the design of a 1,300-foot-long storm drain pipe to reduce local flooding. The proposed design replaced existing storm drains under private property with minimal disruption to the neighborhood.

U.S. Department of Energy (DOE), Yucca Mountain Nuclear Repository Flood Study, Task Leader, Yucca Mountain, NV, 1999 – 2003, 2007 – 2008. Managed hydraulic/hydrology study for the Yucca Mountain Nuclear Repository in Nevada. The project involved a flood risk assessment and preliminary design for mitigation measures. The analysis involved predicting rainfall and flood inundation in an alluvial fan with uncertain flow paths and high sediment transport. Channel geometry and substrate were used to predict water surface elevations, velocities, and bed shear stress. The effects of sediment transport on flow resistance were assessed. Directed HEC-1 and HEC-RAS analysis.

Dam Design and Analysis

San Francisco Public Utilities Commission (SFPUC), San Andreas Dam Inundation Mapping, Project Manager, San Mateo County, CA, 2015. Project Manager and engineer responsible for the analysis of the dam breach of the San Andreas Dam. Estimated breach characteristics and routed flood wave downstream to San Francisco Bay and mapped resulting inundated area. Project also included the analysis and mapping of the inundation area due to emergency releases from the dam. Inundation was primarily in urban areas. Analysis used the MIKE21 two-dimensional hydrodynamic model.

Contra Costa Water District (CCWD), CALFED Los Vaqueros Reservoir Expansion Studies, Hydraulic Engineer, Contra Costa County, CA, 2001 – 2007, 2011 – 2012. Responsible for the analysis of the dam breach and flood inundation modeling of Los Vaqueros Dam. Mr. Mineart modeled the failure of the earthen embankment dam using the BREACH model and routed the resulting flood wave downstream into the Sacramento-San Joaquin River Delta using the FLDWAV model. Mr. Mineart conducted the breach analysis and provided technical review for the flood routing and inundation mapping of the expansion of Los Vaqueros Reservoir. The flood routing was conducted using the MIKE21 two dimensional model.

San Francisco Public Utilities Commission (SFPUC), Lower Crystal Springs Dam Inundation Mapping, Independent Technical Review, San Mateo County, CA, 2010 – 2011. Provided technical review for dam breach and flood inundation mapping for the Lower Crystal Springs Reservoir and floodplain maps on San Mateo Creek. Analysis was conducted using the two-dimensional MIKE21 model. Inundation maps were developed in ArcGIS.

Empire Land, Pelona Vista Detention Basin Preliminary Design, Hydraulic Engineer, City of Palmdale, CA, 2004 – 2005. This 1000 acre-feet stormwater detention basin reduces the Los Angeles County 50-year flood event runoff from a maximum discharge of 6,400 cfs to 750 cfs to prevent downstream flooding. Mr. Mineart conducted hydrologic studies for various return period storm events including PMP as part of spillway design.

California American Water Company, San Clemente Dam, Hydraulic Engineer, Monterey County, CA, 1997 – 1999. San Clemente Dam is a concrete arch dam on the Carmel River that is almost completely full of sediment. Mr. Mineart conducted a dam breach and inundation study using the NWS DAMBRK model.

Outfall/Dilution/Intake Studies

City of Benicia, Benicia WWTP Effluent Initial Dilution at Long-Term Average, Design, and Peak Daily Flow Rates, Project Manager, San Francisco Bay, CA, 2012-2013. The City of Benicia operates a diffuser that discharges 500 feet offshore of its WWTP into the Carquinez Straits. The City's NPDES permit required the City to perform a dilution modeling study to justify the continued use of dilution credits for the determination of water quality based effluent limits. A dilution analysis was conducted using different effluent flow rates, seasonal conditions, and a year of current speed, direction and depth data to capture variability in dilution due to tidal conditions. The results of the dilution modeling confirmed that the original design and installation of the diffuser results in an initial dilution

considerably greater than 10:1 in the receiving water under a variety of conditions and under critical ambient conditions

Crockett Cogeneration, Dye Study and Near-Field Dilution Modeling for Crockett Cogeneration and C&H Sugar Outfall, Project Manager, San Francisco Bay, CA, 2010-2011. Crockett Cogeneration and C&H Sugar share an industrial discharge to San Francisco Bay. The dilution study was necessary to determine the initial dilution that can be obtained in the Carquinez Strait near slack tide. Dye studies were conducted on two days to determine the effluent dilution during periods with low current speeds and to validate the dilution model. The dilution modeling study was used to evaluate the expected dilution at slack tide for periods with average and maximum effluent flow rates. The US EPA's Visual Plumes model (Frick et. al, 2003) was used to simulate the dilution of the discharge.

Chevron, Plume Modeling of Hydrotest Water Discharge, MTOE Pipeline Project, Task Leader, Angola, 2008. An analysis of a proposed discharge of hydrotest water into coastal waters off the coast of Angola was conducted in response to a request from Chevron. The purpose of the analysis was to estimate the near-field dilution of hydrotest water with the surrounding ocean water. Data on ambient conditions were obtained from the National Oceanographic Data Center for the area offshore of Angola. Based on the modeling and toxicity data for Bactron B1150, the biocide used in the test, the extent of impact to fish and plankton was estimated.

EBMUD, Near-Field Dilution Study for East Bay Municipal Utility District (EBMUD) Outfall, Project Manager, San Francisco Bay, CA, 2008. East Bay Municipal Utility District (EBMUD) provides treatment of wastewater for several communities East of San Francisco Bay. The treated wastewater is discharged to the San Francisco Bay through an outfall diffuser. EBMUD retained URS Corporation to model the expected near-field dilution of the effluent and determine the ammonia concentration at the edge of the zone of initial dilution. The Monte Carlo method was used to generate a distribution of dilution values. The use of a probabilistic analysis provides a better understanding of the water quality impacts of a discharge then the more traditional "worst case" and sensitivity analysis.

New York, Dye Study and Modeling of Wastewater Outfall, SI Group, Project Engineer, Schenectady, 2009. Project engineer responsible for dilution study on the Mohawk River in New York for permit compliance. A winter and summer dye study was conducted to validate dilution model. The near-field and far-field dilution of a wastewater plume discharged into the Mohawk River was calculated using the Visual Plumes model and in-house analysis methods.

Larry Walker Associates, EBDA Anti-Degradation Analysis, Project Manager, San Francisco Bay, CA, 2004 – 2005. The MIKE 21 hydrodynamic model of the San Francisco Bay developed by URS was used to analyze the potential for changes in copper and nickel concentrations in San Francisco Bay due to increased discharge from the East Bay Dischargers Authority outfall offshore from Alameda, CA. Impacts to Bay water quality were analyzed for a large portion of the Bay. Discharges under current and projected future conditions (including numerous other discharges) were analyzed.

City West Water, Technical Oversight, Altoona Wastewater Treatment Plant Outfall Dilution Modeling Study, Peer Review, Altoona, Australia,

2008. City West Water is considering using a Recycled Water plant to purify and reuse Altona Treatment Plant (ATP) effluent for industrial and irrigation use. CWW hired URS to conduct a modelling study of the outfall under both existing conditions and future conditions (with the recycled water plant concentrate). To conduct the modelling study, URS utilized the Visual Plumes (VP) model. As input to the model, URS collected a full range of ambient and effluent data, so that a total of 17,472 independent cases were evaluated. Concentrations of Ammonia, BOD, TDS, E Coli, TN, TP, and TSS at the edge of the mixing zone were analyzed, and statistics were generated.

Marin Municipal Water District (MMWD), EIR for Desalinization Plant, Task Leader, Marin County, CA, 1991, 2003 – 2004. In 1991 Conducted diffuser dilution analysis for the Marin Municipal Water District (MMWD) as part environmental study of planned desalination plant for water supply. MMWD planned to use an underutilized existing wastewater treatment plant diffuser for disposal of desalination reject water. Because of the daily variation in the flow rates of the wastewater treatment plant, the discharge density fluctuated between positive and negative buoyancy. Used EPA's CORMIX II model to estimate dilution and mixing zone size. To verify model a dye study was undertaken to estimate dilution under existing operating conditions. In 2003-2004 conducted probabilistic study of the proposed discharge using EPA's Visual Plumes model. Calculated the probability that NPDES permit conditions would be violated under varying flow and ambient conditions. Determined that adding brine to wastewater discharge would result in an extremely small probably of exceeding NPDES permit conditions.

Potlatch Corp., Outfall Dilution Study, Project Manager, Clearwater, ID, 1998. Conducted mixing zone analysis, using EPA's Plumes model, of industrial discharge in the Snake River in Idaho. Mixing zone was calculated for temperature and water quality parameters. Detailed in-situ temperature and conductivity measurements were made to validate the model and estimate model error. A statistical event tree analysis was conducted to determine the uncertainty in model results based on variability in ambient conditions.

Dow Chemical Company, Brazos River Dilution Study, Modeling Lead, Freeport, TX, 2000. Based on a recommendation from the TNRCC, developed a quasi-three dimensional WASP5 model of the Brazos River. The model was used to calculate the transport of pollutants discharging into the Brazos River from groundwater. Three dimensional velocity and salinity data were collected to aid in model setup. Typical dilution factors were calculated for ebb and flood tides.

Kvaerner Metals, Outfall Dilution Study, Task Leader, Philippines, 1998. Conducted probabilistic modeling for negatively buoyant discharge from mining operation. Use a lattin-hyper cube technique to efficiently generate probably distribution of dilution from outfall. The results were used to determine uncertainty in model results to aid in design and permit compliance.

DuPont De Nemours & Company, NPDES Permit Renewal, Outfall Dilution Study, Project Manager, 1993. Conducted thermal discharge studies in the Niagara River in New York for chemical plant discharge. Surface discharge was modeled using empirical relationships since EPA

models were not capable of modeling buoyant surface discharge in a cross flow. Observed temperature data was used to calibrate empirical model.

Outfall Dilution Studies, Task Leader, Various Locations and Clients. Designed outfall diffusers for use in disposing of desalination reject water in San Diego Bay and off Santa Barbara, California. Used EPA PLUMES models for dilution estimation and in-house hydraulic model for diffuser design.

Echo Bay Mines, Near-field and Far-field Dilution Study, Task Leader, Juneau, AK, 1993. Conducted both near and far field dilution study and diffuser design study for tailings pond discharge into Gastineau Channel in Alaska. Two models were developed for the study, a dilution model to estimate near-field dilution and because of the low flushing rates in Gastineau Channel a far field pollutant build-up model. Estimated long- term build- up of pollutants in Channel due to long term continuous discharge.

Intake Studies, Task Leader, Various Locations and Clients. Developed and implemented two-dimensional hydrodynamic model of the lower end of Klamath Lake to determine the impacts to lake circulation of an industrial discharge and intake. Developed a two-dimensional CE-QUAL-W2 model for Lake Travis near Austin, Texas to simulate the transport of contaminants in the lake including the effects of the intake configuration. Analyzed different intake configurations for hydro-power intake on Lake Almanor in Northern California to determine how to best manage cold water resource. Analyzed potential recirculation between intake and outfall for proposed desalination project in San Francisco Bay.

Water Quality Studies

U.S. Bureau of Reclamation (USBR), Delta-Mendota Canal Recirculation Feasibility Study, Hydraulic and Water Quality Engineer, Sacramento, CA, 2006 – 2011. Worked on water quality and sediment portion of U.S. Bureau of Reclamation (USBR) study to determine the feasibility of re-circulation of Delta water to the San Joaquin River to meet water quality and flow standards. Reviewed and analyzed TSS and erosion data collected to aid in determining impacts of increased flow releases on water quality in the San Joaquin River. Reviewed DSM2 modeling results to determine impacts to salinity levels in the Delta from modified operations.

City of San Jose, South Bay Copper Nickel TMDL Source Identification Project, San Jose, CA, 1997 – 1999. Assisted in the development of watershed and sediment loads to the South Bay for the South Bay Copper and Nickel TMDL. Developed data and analysis methodologies for estimating the contribution of in-bay sediment to the total Bay load. Identified data gaps and methods for improving estimates.

Bay Area Stormwater Management Agencies Association, BASMAA Long-Term Data Analysis Project, Oakland, CA, 1995 – 1996. Developed land use based water quality load estimates for Bay Area Association of Stormwater Management Agencies. Compiled data from three counties in San Francisco Bay Area. Developed multiple linear regression model between measured concentrations, land use and runoff coefficients.

Lower Colorado River Authority, MTBE Pipeline Spill, TX. Developed CE-QUAL-W2 model for Lake Travis near Austin, Texas. The model was used to simulate a MTBE and benzene spill into the Lake. Model results

were used to determine the maximum spill that would not exceed water quality criteria at different intake points in the Lake. Volatilization was estimated by calibrating separate volatilization model to lake model results.

Alameda County Public Works Agency, Storm Inlet cleaning BMP Study, Task Leader, Alameda Countywide Clean Water Program, Hayward, CA. Conducted storm inlet cleaning study in Alameda County. The study involved the cleaning of 60 storm inlets at annual, semi-annual, quarterly and monthly frequencies to determine optimal cleaning frequency. Both the mass and volume of sediment removed were measured as well as the chemical quality of sediments to determine pollutant load removal.

City of San Jose, Street Sweep Effectiveness Study, Project Manager, CA. Conducted comparative study of the effectiveness of five different street sweepers for San Jose, California. A statistical model of the study was developed prior to initiation of the study to determine the minimum number of samples necessary to arrive at a statistically valid result. The volume and mass of sediment from the five sweepers were measured from eight randomly selected sweeping routes. For each sweeper and route the chemical quality of the sediment collected was analyzed. An ANOVA analysis was conducted on the results to determine which sweeper(s) was most effective at picking up selected pollutants.

Groundwater

U.S. Environmental Protection Agency (USEPA), Development of EPA MULTIMED Model, Model Developer, Nationwide. Participated in the development of the EPA's Multimed and EPACML groundwater/surface water contaminant transport models. Mr. Mineart's responsibilities included linking an unsaturated zone flow and transport model with a saturated zone transport model, designing and implementing a Monte Carlo pre- and post-processor for the linked model and conducting testing of model.

East Bay Municipal Utility District (EBMUD), Camanche Hills Hunting Preserve, Project Manager, Land Applications Data Report, 2006. Developed a water balance model to estimate maximum loading rate for land application of wastewater that was protective of groundwater for EBMUD’s Camanche Hills Hunting Preserve. Calculated maximum hydraulic and nutrient loading rates and amount of land required to prevent degradation.

American Petroleum Institute, SESOIL Development for API Risk Assessment Decision Support System, Model Developer, 1992. Modified the SESOIL unsaturated zone transport model for inclusion into decision support system. Modifications included simplifications to data input files and the addition of new volatile emissions routine. The new addition included the volatilization routine described in EPA’s Superfund Exposure Assessment Manual.

Western Farms Services, Contaminate Fate and Transport Modeling, Technical Lead, 1992 – 1994. Implemented SESOIL groundwater transport model to determine clean up levels for several pesticide/fertilizer distribution centers. The model was used to back calculate the allowable mass/concentrations of contaminants that could be left in the soil and meet water quality criteria at property boundaries.

Granite Rock Company, Geotechnical and Hydrological Study of Overburden Embankment Expansion, Hydraulic Engineer, San Benito County CA, 2000 – 2005. Engineer responsible for hydrological studies of proposed overburden placement from long term operation of large gravel mine. Hydrologic studies consisted of infiltration studies, rainfall-runoff analysis and preliminary design of several retention and infiltration basins to limit volume and rate of runoff to pre-project conditions.

EIR/EIS Experience

Sonoma County Permit and Resource Management Department, Sutter Medical Center of Santa Rosa/Luther Burbank Center for the Arts Joint Master Plan Initial Study and Environmental Impact Report, Hydrology and Water Quality Task Leader, Santa Rosa, CA, 2006 – 2010. Sutter proposed to build new hospital facilities on a 79 acre parcel to replace two medical facility campuses which were not in compliance with the Hospital Seismic Safety Act (SB1953). The project scope includes preparing a CEQA Initial Study and Environmental Impact Report (EIR). Major issues addressed included water supply and storm water runoff from the site. Water supply issues were addressed through mitigation measures that reduced off-site water use. Storm water runoff issuers were addressed through Best Management Practices (BMPs) that included detention ponds incorporated into site design.

Federal Rail Administration, (FRA), California High-Speed Rail Authority, (CHSRA), California High Speed Rail Environmental Impact Analysis – Fresno and Palmdale, CA Sections, Hydrology and Water Quality Task Leader, 2008 – Present. Responsible for completing the hydrology and water quality sections of the EIR and EIS for the Fresno to Bakersfield and the Bakersfield to Palmdale sections of the CA high speed train project. Analysis included the impacts to floodplains, local drainage and storm water runoff. Streams on the 303(d) list or with active or proposed TMDLs were identified and potential impacts estimated.

San Luis and Delta-Mendota Water Authority in cooperation with U.S. Department of the Interior, Bureau of Reclamation (USBR), NEPA/CEQA Compliance for Grassland Bypass Project, Water Resources Task Leader, Los Banos, CA, 1999- 2001. Task leader for the water resources section of the EIR/EIS on use of a portion of the federal San Luis Drain to convey agricultural drainage water around wetland habitat areas for the Grasslands Bypass Project. Developed a water balance model for the approximately 100,000-acre Grassland drainage area used to estimate impacts.

San Joaquin River Exchange Contractors Water Authority, San Joaquin River Water Transfers, Task Leader, San Joaquin Valley, CA, 1999 – 2000. Task leader for water resources section for NEPA/CEQA Compliance for Water Transfers and Conveyance for San Joaquin River Exchange Contractors Water Authority. Participated in preparation of EA/IS on water transfer and conveyance project for wetland habitat enhancement and for agricultural use on the westside of the San Joaquin Valley. Developed water balance model that included infiltration, evaporation, crop use and deep percolation.

San Joaquin River Group Authority, Water Acquisition Supplemental EIS/EIR, Task Leader, San Joaquin Valley, CA, 2000 – 2001. Task leader for water resource section for Supplemental EIS/EIR on acquisition of up to

47,000 acre-feet of additional water (above the 110,000 acre-feet already approved) to provide additional stream flows for anadomous fish in the San Joaquin River for a 31-day spring pulse flow. The project was conducted for the San Joaquin River Group Authority in cooperation with U.S. Department of the Interior, Bureau of Reclamation

Publications

Thermal behavior of a multi-reservoir hydroelectric system (with R. Cross, K. Voos, and W. Lifton). Paper presented at ASCE/Waterpower '87 International Conference on Hydropower, August 19-21, 1987. Portland, Oregon.

Feasibility of cold water releases from Lake Britton (with R. Cross, W. Lifton, and D. Gilbert). Paper presented at 14th Annual Conference on Water Resources Planning and Management Modeling, Monitoring, and Managing Water Resources Systems, March 16-18, 1987. Kansas City, Missouri

Observations of upwelling near breakwaters (with P. Mangarella and J. Colonell). AWRA 1988 Symposium on Coastal Water Resources, May 1988. Wilmington, North Carolina.

A subsurface contaminant transport model for exposure assessment from landfills (with A. Salhotra). Proceedings of 12th Annual Madison Waste Conference at University of Wisconsin at Madison, September 20-21, 1989

Natural and Anthropogenic Sources of Specific Metals and PAH Pollutants in Storm Water (with C.-C. Lee and T.D. Cooke). Poster presented at the 66th Annual Conference of the Water Environment Federation, October 3-7, 1993, Anaheim, CA.

Sensitivity Analysis of Non-Point Source Loads Assessment Using Monte Carlo Simulation (with Marco Lobascio). Paper presented at the 1993 Runoff Quantity and Quality Model Group Conference. November 8-9, 1993, Reno, Nevada.

Two Options for Disposal of Desalination Reject Water (with Louis Armstrong and Ralph Cross). Paper presented at the 1993 National Conference on Hydraulic Engineering. ASCE.

Developing and Implementing Municipal Stormwater Monitoring Plans to Meet Multiple Objectives (with T.D. Cooke and C-C. Lee). Paper presented at WEFTEC'94, the 67th Annual Conference of the Water Environment Federation. October 15-19, 1994, Chicago, Illinois.

The Value of More Frequent Cleanout of Storm Drain Inlets (with Sujatha Singh). In Watershed Protection Techniques. Vol. 1, No. 3. 1994. Ellicott City. MD.

Hydraulic and Water Quality Modeling for Saigon South Project (with Stephane Asselin and Thomas McDonald). Paper in The Built Environment Volume 10. Transactions of the Wessex Institute. 1995.

Watershed Based Source Screening Model An Analytical Tool for Watershed Management in Urban Environments (with Terrance Cooke, Sujatha Singh and Jim Scanlin). Paper presented at the Watershed '96 Conference. MOVING AHEAD TOGETHER. Technical Conference and Exposition. June 8 - 12, 1996. Baltimore, Maryland (US EPA).

Hydraulic Studies for a Large Wetland (with Stephane Asselin and Pierre-Yves Saugy). In proceeding of ASCE North American Water and Environment Congress 1996. Anaheim, California, June 22-28, 1996

Parameters for Dam Breach Analyses (with Ken Susilo and Thomas C. MacDonald). 1997, "Considerations When Selecting Parameters for Dam Breach Analysis," Dam Safety '97, Proceedings of the 1997 ASDSO Conference (CD-ROM), Pittsburgh, Pennsylvania, September 7-10, 1997.

Integrated Hydrodynamic, Sediment Transport and Water Quality Modeling of San Francisco Bay (with Vivian Lee). Presentation at 8th International Conference on Estuarine Modeling. Monterey California. November 2003.

Sediment Transport Modeling for San Francisco Bay under a Range of Hydrologic Conditions (with Vivian Lee). Paper presented at 8th International Conference on Estuarine Modeling. Monterey California. November 2003.

Peyton Slough Remediation Removes it from the Bay Area list of Toxic Hot Spots (with Francesca Demgen and Lois Autie). Poster presented at the 7th Biennial State of San Francisco Estuary Conference, Oakland,CA. October 2005.

A Kinetic Model Of Copper Cycling In San Francisco Bay. (with Brad Bessinger, Terry Cooke, Barton Forman, Vivian Lee and Louis Armstrong) In San Francisco Estuary and Watershed Science. In press.

Sensitivity And Spin Up Times Of Cohesive Sediment Transport Models Used To Simulate Bathymetric Change (with David H. Schoellhamer, Neil K. Ganju, and Megan A.Lionberger). Proceedings The 8th International Conference on Cohesive Sediment Transport. Institute of Lowland Technology, Saga University, Saga, Japan. September 2005.

Hydrodynamic Effects of Proposed Knik Arm Crossing (with J. Colonell, PE, PhD., F.ASCE, and J. Gambino, PE). Hydrologic Analysis Used in the Delta Risk Management Strategy.

Mineart, P. and Thomas MacDonald

Salt Pond Restoration: North San Francisco Bay Salt Pond Project – Salt Removal (with Seth Gentzler, PE) Presented at 2012 Headwaters to Oceans (H2O) Conference to be held May 29-31, 2012 at the Catamaran Resort Hotel, San Diego, CA.

Probabilistic Analysis of Delta Hydrology and Water Levels (with Thomas Macdonald, PhD, PE, Ram Kulkarni, PhD). Poster presented at California Water and Environmental Modeling Forum, February 23-25, 2009 Asilomar Conference Grounds, Carmel,, CA.

10. Tim Murphy

Michael J. Carroll
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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF TIM MURPHY REGARDING LAND USE AND AGRICULTURE

I, Tim Murphy, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor's degree in Environmental Studies from University of California at Santa Barbara in 1984. I have over 20 years of experience regarding land use planning. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1012: Application for Certification Section 4.6, Land Use and Agriculture (CEC TN #204219-13);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement- Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.6) (CEC TN #206698);

- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683); and
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.6) (CEC TN #213802).

I hereby sponsor this declaration (Applicant's Exhibit No. 1109) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.7, Land Use (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Project Site Land Use Designations.* The Project site is in the California Coastal Zone and is governed by the City of Oxnard's Coastal Land Use Plan (CLUP) and its Coastal Zoning Ordinance (CZO), adopted pursuant to the California Coastal Act and certified by the California Coastal Commission. Together, these documents make up the City's Local Coastal Program (LCP). The land use designation for the Project site is Energy Facility, and it is located within the EC (Coastal Energy Facilities) sub-zone. The purpose of the EC sub-zone is to provide areas that allow for siting, construction, modification, and maintenance of power generating facilities and electrical substations.

b. *General Plan Policy SH-3.5.* On June 7, 2016 the Oxnard city council approved a new General Plan policy, Policy SH-3.5, prohibiting development of certain power generating facilities, including, but not limited to, those under the jurisdiction of the California Energy Commission, in coastal areas the City has determined are subject to coastal hazards, which presumably would include the Project site. No proposed LCP amendment consistent with this recently adopted policy has yet been submitted to or approved by the Coastal Commission. The 2030 General Plan states that land use designations and related policies are not effective in the Coastal Zone until certified by the Coastal Commission and are included in the General Plan to indicate the City's intent and direction leading to future CLUP amendments.

c. *Compatibility with Surrounding Uses.* The Project would be located entirely within the boundary of the existing MGS facility, which has been used as a power generation facility since the 1950s. The land immediately surrounding the Project site includes a variety of uses, including industrial and energy uses. The Project would not result in any physical land use incompatibilities with the existing surrounding land uses.

d. *Coastal Access.* The Project is consistent with coastal public access provisions of Warren-Alquist Act section 25529, the California Coastal Act and the Oxnard Local Coastal Program. The Project includes demolition and removal of the existing ocean outfall structure, which will greatly improve access and recreation along the beach fronting the MGS facility.

e. *Height Overlay District*. For multiple reasons identified in the CEC FSA, Part 1, Section 4.7, Land Use, the Height Overlay District (HOD) established in the Land Use Designation and Standards section of the Community Development chapter of the City of Oxnard's 2030 General Plan (section 3.5), which limits the height of buildings to six stories, does not apply to the Project site.

7. Based on the information and analysis contained herein and in the Applicant's Exhibits identified herein, it is my expert opinion that the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts with respect to land use and will not result in any physical land use incompatibilities with the existing surrounding land uses.

It is also my opinion that the Project complies with all currently applicable laws, ordinances, regulations and standards pertaining to land use.[1]

Executed on January 18, 2017, at Santa Barbara, California.

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

Tim Murphy, AICP

[1] The CEC FSA, Part 1, Section 4.7, Land Use, includes discussion regarding certain legal interpretations which suggest that the City of Oxnard 2030 General Plan Land Use Element Policy SH-3.5 is currently effective notwithstanding that it has not been approved by the Coastal Commission as an amendment to the LCP. Such legal interpretations are beyond the scope of this declaration.

ATTACHMENT A

AECOM

Timothy J. Murphy, AICP
Senior Environmental Planner

Technical Specialties

Environmental planning, permitting and compliance
CEQA/NEPA Document Preparation
Energy facility Proponent's Environmental Assessments
Construction compliance
Land Use project management and scheduling
NPDES water quality planning

Education

MBA, Graduate School of Management, 1991, Boston University
BA, Environmental Studies, 1984, University of California, Santa Barbara

Years of Experience

With AECOM: 8
With Other Firms: 16

Professional Affiliations

Certified Planner, American Institute of Certified Planners (AICP #147300)
Western States Petroleum Association

Mr. Murphy is a Senior Environmental Planner and environmental planning group manager with 24 years of combined private and public sector regulatory permitting and planning experience in California. He manages multidisciplinary environmental study teams, serving as Program Manager and Project Manager on major land use, energy, and infrastructure projects. Mr. Murphy is a strong asset to environmental planning and development project teams because of his extensive working knowledge of major project siting, assessment, licensing, development, and construction processes. He also is an expert on the necessary permitting steps, agency interactions, industry cultures, and project team dynamics required for successful development across several industries.

Experience

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Land Use section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying land uses in the vicinity of the project, determining the applicable laws, ordnances, regulations, and standards governing land use in the study area, and evaluating the potential impacts of the project.

CEQA Project Manager – Santa Barbara Ranch EIR and Transfer of Development Rights Study, Gaviota, California. Preparation of two parallel CEQA EIRs for alternative development scenarios for residential development on 1,200 acres of contiguous coastal ranch land and open space in rural Gaviota, at the historic Naples Townsite. Task lead for preparation of project descriptions, land use, recreation, policy consistency analyses, hydrology and water quality assessments, and other disciplines.

CEQA Land Use and Water Resources Task Leader - Ellwood-Devereux Open Space Management Plan and Residential Development Projects, Goleta, California. Preparation of three parallel CEQA EIRs and an Open Space and Habitat Management Plan for over 650 acres of contiguous coastal open space spanning three local jurisdictions (City of Goleta, County of Santa Barbara and University of California Santa Barbara), and associated residential home developments on sensitive coastal resource areas. Task lead for preparation of project descriptions, land use and policy consistency analyses, hydrology and water quality assessments and other disciplines.

Proponent's Environmental Assessment, Environmental Permitting and Compliance Project Manager – Gill Ranch Storage, LLC and Pacific Gas & Electric Company's Gill Ranch Gas Storage Project, Fresno and Madera Counties, California: Permitting and regulatory compliance coordinator for the successful permitting and construction of 5,000-acre gas storage field with new injection/withdrawal wells;

compression facilities; 9-mile power line; and 27-mile gas transmission pipeline through various aquatic and upland habitat and agricultural areas in the San Joaquin Valley, California. Services included siting constraints assessment; compressor permitting and design configuration feasibility study (electrical interconnection vs. onsite gas turbine); preparation of Proponent's Environmental Assessment (PEA) to the California Public Utilities Commission; Army Corps Section 404 and 401 permitting, and related surveys, technical studies and agency consultations (federal ESA through USFWS; Section 106 cultural); and California Dept. of Fish and Game Streambed Alteration Agreement and endangered species consultations.

Proponent's Environmental Assessment Project Manager – Pacific Gas & Electric Company's Sanger Substation Expansion Project: Project Manager for preparation of a PEA for submittal to the CPUC for expansion of PG&E's Sanger Substation and related transmission line upgrades and reconductoring, located near Sanger, California, southeast of Fresno. This existing substation is located in an agricultural area between the urban areas of Sanger and Fresno, and is adjacent to a major arterial road that is planned for widening. Key issues are visual resources, traffic, cultural/historic resources, and biological resources.

DOE NEPA Project Manager and Lead Author – Environmental Impact Statement for Presidential Permit – Sempra Generation's Energia Sierra Juarez Wind Project: Directed the preparation of NEPA documentation and facilitated the NEPA process for a Presidential permit under the direction of the U.S. Department of Energy (DOE). Energia Sierra Juarez U.S. Transmission, LLC (ESJ), a subsidiary of Sempra U.S. Gas and Power (Sempra), applied to the DOE for a Presidential permit for the U.S. portion of 230-kV or 500-kV electrical transmission facilities (generation-tie lines) between Sempra's proposed 1,200-MW wind turbine project in the Sierra Juarez mountains in northern Baja California and a transmission grid interconnection in southeastern San Diego County, California. NEPA key issues included desert biological resources; cultural resources; visual resource impacts of wind turbines and transmission towers; cross-border impacts to the U.S.; and cumulative impacts from other independent and interconnected electrical transmission and renewable energy projects in southeast San Diego County and Imperial County, California. The Final EIS was published in June 2012; a Record of Decision was published in July 2012; and the Presidential permit was granted in August 2012. Another critical success factor was facilitation of DOE's consultation with USFWS, as well as its cooperating agency relationships with BLM, the County of San Diego, and the California PUC.

AFC Licensing Project Manager – NRG Energy, Inc. El Segundo Power Redevelopment (ESPR) Project: Supervised all activities supporting an Application for Certification to the California Energy Commission for a 630-MW redevelopment of an existing power generating station in coastal Los Angeles County, California. Technical services included development of environmental design criteria; management of the project team through AFC preparation; presentation and defense of technical studies; project scheduling and compliance planning; offsite transmission, pipeline, and staging siting and local agency permitting; water quality management plans; and project management and services in support of AFC through the Discovery, Evidentiary and Decision phases. Included coordination and

liaison with California Coastal Commission, Energy Commission, and other local, state and federal agencies.

Permitting Project Manager – Lodi Energy Center, Lodi, California: Directed the land use plans and related technical studies in support of a 47 MW gas-fired peaker plant in central California. Coordination with US Army Corps, National Marine Fisheries Service, and other resource agencies for approval of plant and associated cross-country gas pipeline through sensitive wetlands. Preparation of site-specific water quality management plans for construction and operations.

Permitting and Compliance Project Manager -- Kinder Morgan Energy Partners, LLC Liquid Fuels Bulk Terminal Expansion Project, Carson California: Managed the preparation of proponent's application materials in support of CEQA documentation and related project permitting and coordination for expansion of a refined product bulk terminal in the Long Beach/Port of Los Angeles area, Southern California.

Oil and Gas Production and Transportation Permitting Project Manager – Freeport McMoRan Oil and Gas Santa Barbara County Onshore and Offshore Permitting, Santa Barbara County, California: Responsible for comprehensive oil field permitting support including the preparation of land use plans, pipeline alignment analyses, CEQA baseline information, and U.S. Air Force environmental analysis and permitting. Program management tasks include oversight of a wide range of services, environmental documentation, and technical support at various Freeport McMoRan Oil & Gas' Central California oil fields, including assets at the Lompoc Field in Santa Barbara County, and Arroyo Grande Oil Field in San Luis Obispo County. A team of project planners and engineers support small and large repair and maintenance projects and oil field improvements, such as pipeline anomaly repairs, well workovers and drilling programs, gathering line replacements, and equipment upgrades, as well as larger capital projects and complex geotechnical and hydrogeologic evaluations.

Permitting Project Manager – Aera Energy LLC Shell Road Bridge Abutment Maintenance Project, Ventura County, California: Responsible for the preparation of applications to Ventura County, US Army Corps, CDFW, and other agencies for permitting related the Shell Road Bridge Abutment Maintenance Project. The Shell Road Bridge crosses the Ventura River and is a critical link between the east and west portions of the field. Based on the bridge structure's location in the active river channel, and sensitive biological resources in the project area, URS is assisting Aera with permit strategy and agency permitting and coordination, covering several local, state and federal agencies, with an overall strategy to enable bridge repairs in 2015.

Permitting Project Manager – ExxonMobil Exploration and Sunset Exploration, Inc. Vahevala Oil and Gas Project, Santa Barbara County, California: Responsible for the preparation of land use plans, pipeline siting analyses, CEQA baseline information, NEPA Environmental Assessment, Air Force "bed-down" analysis, and related technical studies in support of a proposed onshore-to-offshore oil and gas production facility and associated onshore processing and pipelines in northern Santa Barbara County, California. Lead coordinator with U.S. Air Force, Santa Barbara County, and California State Lands Commission. Project challenges included facility and

pipeline siting within sensitive coastal habitats, and conformance with U.S. Air Force environmental and mission compatibility criteria.

Permitting and Compliance Coordinator – Venoco, Inc. South Ellwood Field Facilities Full Field Development and Line 96 Modification Projects, Coastal Santa Barbara County: Directed the preparation of offshore and onshore permit materials in support of Venoco's Full Field Development project, and subsequent planning documents and services for the Line 96 Modification project. Permitting services included project description, technical studies, and compliance plans in support of a 9-mile onshore crude oil pipeline, expansion of Platform Holly production, associated Ellwood Onshore Facility improvements, and abandonment of the existing Line 96 crude oil line in coastal Santa Barbara County, California. Coordination with California State Lands Commission, California Coastal Commission and local land use agencies during application review and CEQA process. Development and implementation of pre-construction and construction-phase permit compliance program through successful construction and operation start-up in early 2012.

NPDES Storm Water Pollution Prevention Plans, and Storm Water Management Plans, various clients: Preparation of NPDES Storm Water Pollution Prevention Plans for construction and operation of various commercial and industrial sites.

Preparation of NPDES Phase II Storm Water Management Plans for various Municipal Separate Storm Sewer Systems (MS4s) in Southern and Central California: Storm Water Management Planning tasks include review of existing information, programs, and activities; development of municipal non-point source storm water quality controls; monitoring implementation and effectiveness of compliance activities; and coordination between the lead agencies and co-permittees.

11. George Piantka

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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF GEORGE PIANTKA REGARDING THE PUENTE POWER PROJECT

I, George Piantka, declare as follows:

1. I am employed by NRG Energy, Inc. as Senior Director, Regulatory Environmental Services, and am duly authorized to make this declaration.

2. I earned a Master of Science in Civil/Environmental Engineering from University of Southern California in 1993 and Bachelor of Science in Chemistry from University of California, Berkeley in 1987. I have over 28 years of experience conducting permitting and environmental review for development projects. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1000: Application for Certification (AFC) Cover Letter (CEC TN #204219-1);
- Applicant's Exhibit No. 1003: AFC Section 1.0 Executive Summary (CEC TN #204219-4);

- Applicant's Exhibit No. 1004: AFC Section 2.0 Project Description (CEC TN #204219-5);
- Applicant's Exhibit No. 1023: AFC Section 5.0, Alternatives (CEC TN #204219-24);
- Applicant's Exhibit No. 1025: AFC Appendix A, Project Description (CEC TN #204220-1);
- Applicant's Exhibit No. 1042: Application for Certification, Appendix N, Water Resources (N-1) (CEC TN #204220-14);
- Applicant's Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 25-29, 31-36, 40 and 46) (CEC TN #205765);
- Applicant's Exhibit No. 1052: Applicant's Presentation, P3 A Bridge to California's Energy Future - Informational Hearing & Site Visit, August 27, 2015 (CEC TN #205912);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement, Demolition of Mandalay Generating Station Units 1 and 2 (CEC TN #206698);
- Applicant's Exhibit No. 1068: Applicant's Alternative Sites Summary (CEC TN #207096);
- Applicant's Exhibit No. 1071: Email from Applicant Clarifying the Schedule for Decommissioning and Demolition of Existing Mandalay Generating Station Units 1 and 2 (CEC TN #208186);
- Applicant's Exhibit No. 1072: Applicant's Responses to CEC Data Requests Set 3 (DR 75,76) (CEC TN #210302);
- Applicant's Exhibit No. 1073: Synchronous Condenser Analysis (CEC TN #210450);
- Applicant's Exhibit No. 1074: Application for Certification, Puente Power Project, Refinement to Ammonia Tank Design (CEC TN #210502);
- Applicant's Exhibit No. 1076: Applicant's Responses to Robert Sarvey Data Requests Set 2 (DR 2) (CEC TN #210965);
- Applicant's Exhibit No. 1077: Applicant's Responses to City of Oxnard Data Requests Set 5 (DR 100) (CEC TN #210971);

- Applicant's Exhibit No. 1079: Email Regarding Compressed Gas Enclosure (CEC TN #211649);
- Applicant's Exhibit No. 1082: Letter re: Fire Protection System Study – Final Draft (CEC TN #212359);
- Applicant's Exhibit No. 1084: Refinement to Transmission Interconnection (CEC TN #213000);
- Applicant's Exhibit No. 1087: Comments on California Coastal Commission Report to California Energy Commission on AFC 15-AFC-01 - NRG Puente Power Project (CEC TN #213625);
- Applicant's Exhibit No. 1088: Final NRG Comment Letter to California Coastal Commission re Agenda Item F10a; September 9, 2016 (CEC TN #213626);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project, Project Enhancement – Outfall Removal and Beach Restoration (CEC TN #213802);
- Applicant's Exhibit No. 1092: Applicant's Responses to Robert Sarvey Data Requests, Set 2 (DR 1 - 2) (CEC TN #214303);
- Applicant's Exhibit No. 1093: Applicant's Responses to City of Oxnard Data Requests, Set 6 (DR 110) (CEC TN #214330);
- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests Set 4 (DR 78 - 81, 97, 98) (CEC TN #214336);
- Applicant's Exhibit No. 1098: Applicant's Comments on the Proposed Conditions of Certification in the Final Staff Assessment for the Puente Power Project (CEC TN #215352); and
- Applicant's Exhibit No. 1099: Applicant's March, 19, 2015 Application to the Ventura County Air Pollution Control District (VCAPCD) for an Authority to Construct/ Determination of Compliance for the Proposed Puente Power Project (CEC TN #215395).

I hereby sponsor this declaration (Applicant's Exhibit No. 1118) and the above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Revised Final Staff Assessment (FSA), (CEC TN #211885-1);
- California Energy Commission (CEC) Staff Revised Final Staff Assessment (FSA), Part 2, (CEC TN #211885-2); and
- Ventura County Air Pollution Control District (VCAPCD) Final Determination of Compliance, with attachments (FDOC) (CEC TN #214005-1 through #214005-9).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following submittals that support the Puente Power Project were prepared under my direction: Application for Certification, Application for an Authority to Construct/Determination of Compliance, Applicant Alternatives Sites analysis, and the following proposed Project Refinements and Enhancements: Demolition of Mandalay Units 1 and 2, Removal of the Outfall Structure, Ammonia Tank Design, Fire Protection System Study and Transmission Interconnection. Project modifications and responses to Data Requests based on input from the other parties and the public were also prepared under my direction.

7. It is my expert opinion that with implementation of proposed Conditions of Certification contained in the Final Staff Assessment (CEC TN #214712), with the changes proposed by Applicant in its Proposed Changes to FSA Conditions of Certification (CEC TN #215352), the Project, as proposed, will not result in any significant direct, indirect or cumulative

environmental impacts, and will comply with all applicable laws, ordinances, regulations and standards.

Executed on January 18, 2017, at Costa Mesa, CA.

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

George L. Piantka

ATTACHMENT A

GEORGE L. PIANTKA, PE

SR. DIRECTOR, REGULATORY ENVIRONMENTAL SERVICES – NRG ENERGY

AREAS OF EXPERTISE

- CAA: Title V/ NSR/PSD Permitting and Compliance
- CWA: NPDES Permitting and 316(b) Implementation
- Corporate Environmental Compliance/EMIS
- Corporate Financial Obligations – ARO/CapEx
- RCRA: Assessment, Remediation/Site Closure
- TSCA: PCB Assessment, Remediation
- Due Diligence, Phase I and II Site Assessments
- Water/Wastewater Management and Treatment
- Environmental/Regulatory Policy Strategy/Advocacy
- Community Outreach
- Customer Solutions

REGISTRATION

Registered Civil Engineer: California, No. C59171
1999

PROFESSIONAL HISTORY

NRG Energy, Inc., West Region, Director, 2009-Present; Regional Manager, 2007-2008

EXPERIENCE OVERVIEW

Mr. George Piantka is Senior Director of Regulatory Environmental Services for NRG Energy's West Region. Mr. Piantka has 28 years of extensive experience in multi-media permitting, compliance, remediation engineering, and water/wastewater management and treatment in the western United States, primarily in southern and northern California, for the energy, oil & gas, commercial & industrial, Port, and transportation sectors. He has focused extensively on the energy sector since 1997, serving as consultant to independent power producers and publicly owned utility, namely NRG Energy, AES, and Los Angeles Department of Water and Power. In 2007, Mr. Piantka joined NRG Energy as in-house Regional Environmental Manager before his promotion to Regional Director in 2009.

Professional Highlights at NRG:

DEVELOPMENT

Mr. Piantka has led the permitting of new generation in NRG's West Region since 2007. Among the Region's accomplishments:

- El Segundo Energy Center Project (ESEC) – project manager for the 2010 approval of the major Petition to Amend whereby NRG modified the 2005 CA Energy Commission (CEC) license by converting the project to a 560 MW, two 1x1 fast-start, air cooled, combined cycle plant. Navigated the West through the SCAQMD permitting moratorium and led, with Governmental Affairs, regulatory and legislative fixes to the permit moratorium that enabled the air district to issue the ESEC Permit to Construct and Operate.
- Carlsbad Energy Center Project (CECP) – project manager for the 2015 approval of the Application for Certification and the amendment of that was filed with the CA Energy Commission for the permitting of a 632 MW plant consisting of six LMS 100 simple cycle units. The project was successfully permitted while faced with intensive intervention and an extensive evidentiary record.
- Long Beach Emergency Repowering – permit manager for the 2007 approval of the refurbishment of the Long Beach Generating Station into a 260 MW simple cycle peaker plant, permitting through the Port of Long Beach and the local air district. This repowering project was permitted and constructed in less than 9 months.
- Puente Power Project (P3) – permit project manager for the development of a 262 MW peaking unit that is proposed to replace the Mandalay Generating Station's once through cooled steam boilers in Oxnard, CA. The application was filed in 2015. A decision is anticipated in 2017.
- Ellwood Generating Station Battery Storage – permit project manager for the development of 2 MWh battery storage project proposed at the existing Ellwood Generating Station in Santa Barbara County, CA. The project will be permitted by the City of Goleta. A decision is anticipated by end of 2016.

Essentia Management Services LLC, Long Beach, CA. Partner, 2002–2006

URS Corporation, Santa Ana and Santa Barbara, CA. Division Manager to Project Engineer/Manager, 1995–2002

PSI (as former GeoResearch), Long Beach, CA. Project Engineer/Scientist. 1992–1994

ICF Kaiser Engineers, Oakland, San Francisco, and Los Angeles, CA. Staff to Project Manager. 1988-1992

EDUCATION

University of Southern California, Los Angeles, California, M.S. Environmental Engineering, 1993

University of California, Berkeley, Berkeley, California, B.S. Chemistry, 1987

AFFILIATIONS

CA Council for Environmental and Economic Balance, Board Member

Harbor Association of Industry & Commerce (Port of Los Angeles and Long Beach), Board Member

COMPLIANCE

Mr. Piantka is responsible for oversight of the Region's compliance performance, including environmental key performance indicators, Corporate EMIS system, annual audits, Title V and NPDES permit compliance and renewals, and local agency inspections. Mr. Piantka is primary federal and state regulatory agency (EPA, ACOE, SWRCB, State Lands, Coastal Commission) liaison. Other compliance responsibilities include:

- Management of the CA Energy Commission license compliance activities.
- Management for the multi-year CA 316(b) implementation (Track 1 replacement with new generation or Track 2 intake modifications) strategy and implementation.
- Management of Renewables solar facility compliance programs; in particular Ivanpah's compliance programs, including Avian and Bat Monitoring Management Plan in accordance with BLM and CEC facility permits and associated biological opinion/conditions of certification.
- Oversight of Region's SPCC and SWPPP Programs
- Remediation lead for RCRA facility assessments, corrective action, and site closures. Closure of Conditionally Authorized wastewater treatment system in progress at one of NRG's West assets.
- Implementation of TSCA reporting, including expedited PCB remediation to meet site development timeline.

CORPORATE FINANCIAL OBLIGATIONS

Mr. Piantka is responsible for the quarterly reporting of Asset Retirement Obligations and liabilities and the development of environmental CapEx for the West Region.

WATER/WASTEWATER MANAGEMENT AND TREATMENT

As Registered Civil Engineer, Mr. Piantka serves as technical manager for Long Beach Generating Station's 1MGD wastewater treatment system, including the 2009 NPDES permitting and ongoing engineering enhancements and compliance monitoring.

ENVIRONMENTAL/REGUALTORY POLICY STRATEGY/ADVOCACY

Mr. Piantka is has served as the point for environmental and regulatory policy/rulemaking tracking, evaluation, comment and response at the local air pollution control districts to state level. Of note, Mr. Piantka worked with South Coast AQMD and elected officials as part of a resolution to challenges to SCAQMD's emission offset (tracking) programs and RECLAIM rules. Mr. Piantka has tracked federal and state 316(b) and climate change/AB 32 policy and regulations. For each, he has evaluated compliance options and associated risks. Mr. Piantka has filed comments and provided testimony directly and through our trade groups. Mr. Piantka, with the Regional Environmental Manager and Governmental Affairs has tracked AB 32/Cap-n-Trade development and pending compliance, Mandatory Reporting, and 3rd party verification. Mr. Piantka serves as a Board

Member for the California Council for Environmental and Economic Balance and the Harbor Association for Industry and Commerce – trade groups for environmental, policy, legislative, and economic interests are communicated.

COMMUNITY OUTREACH

Mr. Piantka has served as the point of contact for community outreach in the communities in which El Segundo Generating Station, Long Beach Generating Station and Encina Power Station our location. In this role, Mr. Piantka communicates status of permitting and construction of new generation projects and compliance responsibilities with civic and community interest groups. Mr. Piantka coordinates media communication around these assets and development projects with Corporate Communications. In addition, Mr. Piantka heads the West Regions econrg initiatives and the numerous community and educational programs conducted in the communities in which the West assets are located.

CUSTOMER SOLUTIONS

Mr. Piantka is a 2011 Leadership Development Program graduate – a program within NRG to promote professional growth and leadership of selected individuals. In that capacity, Mr. Piantka evaluated NRG's emerging eVgo business line and smart meter applications in coordination with NRG's retail, marketing and solutions business lines. Mr. Piantka, through existing industry relationships, helped grow customer solutions opportunities with a major entertainment company.

PROFESSIONAL HIGHTLIGHTS PRIOR TO NRG:

During Mr. Piantka's 20 year consulting career, he managed/conducted soil and groundwater investigations, environmental engineering and remediation, compliance and permitting services, and contaminated sediment studies. He has been project manager of numerous Environmental Site Assessments (ESAs), Remedial Investigations, Feasibility Studies, and Corrective Action/Remedial Action programs for public and private sector clients, with particular emphasis on Power and Port facilities. He has designed and managed numerous soil and groundwater remediation programs and has effectively negotiated site closures with regulatory agencies.

Mr. Piantka is particularly adept at managing fast tract, multi-discipline programs typical of development and due diligence projects. Mr. Piantka conducted due diligence investigations at five Southern California power plants formerly owned by Southern California Edison at the onset of deregulation in California. He has served as project manager, contributing technical lead and contributing author on several Applications for Certification filed with the California Energy Commission for Independent Power Producers and Investor Owned generation from 1999 to 2005.

Mr. Piantka's representative project experience includes:

- From 1997 through 2006, Mr. Piantka served as a Project Manager for numerous environmental programs at NRG Energy's El Segundo and Long Beach Generating Stations in Southern California. Mr. Piantka served as the Compliance Manager for the El Segundo Power Redevelopment Project, including the submittal of compliance documents intended to meet air quality,

biology, cultural, geology, hazardous materials, land use, noise, paleontological, water quality, waste management, and worker safety requirements prior to and during the construction of ESEC.

For El Segundo and Long Beach Generating Stations, Mr. Piantka prepared and certified SPCC Plans. Mr. Piantka also updated and certified the SWPPPs for these generating stations.

During 1999 and 2000 for El Segundo Generating Station, Mr. Piantka served as Task Manager for Hazardous Materials and Waste Management sections of the Application for Certification (AFC) for the repower of this power plant in accordance with California Energy Commission. For the AFC, Mr. Piantka served as Project Manager for pre-construction remedial investigations, tank closures, construction dewatering, NPDES permitting and groundwater treatment. During 1997 and 1998, Mr. Piantka served as Project Manager for Additional Buyer's Due Diligence Investigations, which entailed the evaluation of environmental liabilities at the El Segundo and Long Beach Generating Stations for NRG/Dynegy.

- From 1999 to 2006, Mr. Piantka served as Project Manager for the Resource Conservation and Recovery Act (RCRA) Facility Investigations (RFI) and RCRA Closure Plans of former hazardous waste treatment units and other areas of concern under the direction of the Department of Toxic Substances Control (DTSC) for the AES' Redondo Generating Station in Redondo Beach California. During 1998, Mr. Piantka assisted with the Additional Buyer's Due Diligence Investigation, which entailed the evaluation of environmental liabilities at the Redondo Beach Generating Station for AES Corporation.

- From 1999 to 2006, Mr. Piantka served as a Project Manager on a number of initial site assessments and remedial investigations for Los Angeles Department of Water and Power (LADWP) facilities throughout California. Among the projects, Mr. Piantka conducted extensive assessments of water and sediment quality at two reservoir sites.

- From 1998 to 2000, Mr. Piantka served as Project Manager for the assessment of two Kern County power plant locations within historic oil fields and one western Arizona agricultural site for PG&E National Energy Group. Responsibilities included performing ESAs at a planned power plant site and the associated transmission and pipeline corridors. Project tasks included preparation of Phase I ESAs for the power plant site and proposed property acquisitions along transmission and pipeline corridors located on agricultural and oil field properties.

- From 1995 to 2006, Mr. Piantka has served as a Project Manager for site assessments, remedial action plans, and remedial action at more than 20 Port of Los Angeles sites. Duties included conducting an RI/FS of contaminated sediments at a former ship yard on Terminal Island and evaluating disposal options for metals-impacted sediments. Mr. Piantka also served as Project Manager for environmental tasks associated with the demolition of two contiguous Berths and the management of excavated soil and dredged sediments

associated with the construction of a new wharf at a former wood (creosote) treatment plant. He prepared engineering specifications for a sheet pile wall used as a shallow groundwater barrier, designed and installed additional groundwater monitoring wells, and conducted quarterly groundwater monitoring. Mr. Piantka also prepared and implemented a remedial action plan that led to the site closure of a former underground storage tank (UST) site.

- From 2000 to 2004, Mr. Piantka served as Project Manager for the Operation & Maintenance of groundwater and soil remediation systems designed to mitigate volatile organic compounds (VOCs) in soil and groundwater and chromium in groundwater for Goodrich Corporation in Burbank, California and responded to the Cleanup and Abatement Order assigned to this site

- From 1999 to 2002, Mr. Piantka served as Project Manager for the preparation of responses to Waste Discharge Requirements (WDRs) for process and storm water runoff at the Pictsweet Mushroom Farm located in Ventura, California. As part of the response to the WDRs, Mr. Piantka designed a storm water retention basin intended to achieve zero discharge of storm water and process water at the farm.

- From 1999 to 2000, Mr. Piantka served as the engineer of record for the performance of a Safety Audit; preparation of a Process Safety Manual; and modification of the Risk Management Plan prepared for Venoco's gas process facility in Santa Barbara County, California. The documents were prepared in accordance with Venoco's California Accidental Release Program.

- From 1998 to 2001, Mr. Piantka served as Project Manager for RFI and Closure Assessments at three facilities at Naval Base Ventura County in Port Hueneme, California**.** He also served as Project Manager for an ESA of a proposed modification of natural drainage and creeks at Naval Base Ventura County, including preparation of the 404 permit for this project.

- During 1998 to 2001, Mr. Piantka managed two UST assessment and remediation projects in Santa Barbara, CA, utilizing SVE, air sparging and insitu bioremediation techniques.

- From 1995 to 1997, Mr. Piantka managed O&M of a soil and groundwater remediation system at a Mobil UST Remediation Site in Long Beach, CA**.** Responsibilities included quarterly groundwater monitoring and monthly NPDES monitoring. Cleanup objectives were met and closure was granted by the RWQCB.

- From 1995 to 1997, Mr. Piantka managed tank closure and reporting activities at several Yellow Freight facilities in California. Mr. Piantka managed interim corrective action measures at Orange and Gardena, California sites, whereby UST areas were over excavated and confirmation samples collected to confirm that clean-up goals were met.

- From 1996 to 1998, Mr. Piantka served as Project Manager for the RI of a 160,000-gallon fuel release and O&M of the LNAPL and vapor-phase remediation system along a petroleum hydrocarbon pipeline on behalf of ARCO Pipeline in Long Beach, CA. He utilized field techniques to quickly assess the stratigraphy and the extent of dissolved phase aromatic hydrocarbons in multiple saturated zones. Mr. Piantka also managed quarterly groundwater monitoring, sampling and reporting requirements for the site.

- From 1995 to 1998, Mr. Piantka served as Project Manager for subsurface investigations and free-phase removal at bulk fuel storage facility on behalf of ARCO Pipeline at the Port of Long Beach, CA. He designed and implemented the upgraded free-phase removal system to incorporate additional recover wells installed as part of site investigation activities. Mr. Piantka also managed quarterly groundwater monitoring, sampling and reporting requirements for the site.

- From 1995 to 2001, Mr. Piantka served as Project Manager for several RIs at Caltrans maintenance stations sites in central and Southern California, including Stockton, Bear Valley, and Glennville. He conducted pilot tests and screening level risk assessments as part of the evaluation of feasible remedial alternatives. Mr. Piantka also presented results to local County Health Departments and RWQCB staff and negotiated site closures, where appropriate.

- From 1995 to 2002, Mr. Piantka served as Project Manager for a 30,000-gallon spill at a service station in Lancaster, California. He managed the California State Reimbursement program and provided litigation support for the pending case against the responsible party. Mr. Piantka also worked with the client's risk management staff to implement cost recovery strategies. Total cost recovery was approximately $1.5M.

- From 1992 to 1995, Mr. Piantka managed a dozen site assessment and interim removal actions at active and closed service station sites throughout California on behalf of Unocal. At some of the sites, SVE tests were conducted and FSs prepared to evaluate remedial alternatives. Mr. Piantka also managed the UST Reimbursement programs for Unocal, which entailed the preparation and submittal of reimbursement applications for approximately 250 service station sites in California and Arizona.

- From 1990 to 1992, Mr. Piantka conducted site assessments and remediation pilot testing, and prepared RCRA closure reports for several operable units at a defense contractor facility for United Technologies, San Jose, California**.**

- From 1988 to 1992, Mr. Piantka managed tank removal/closure activities and conducted site assessments at several Ford Motor Company facilities in California, Oregon and Washington.

- From 1988 to 1992, Mr. Piantka managed tank removal/closure activities and conducted site assessments at active and closed United States Postal Service sites in Southern and Northern California.
- From 1988 to 1991, Mr. Piantka conducted groundwater monitoring and RIs to assess the extent of diesel- and gasoline-impacted soil and groundwater, on behalf of AC Transit, Alameda and Contra Costa Counties.
- From 1988 to 1992, Mr. Piantka has served as technical lead of Hazardous Materials and Wastes Assessments for proposed transportation improvement projects in Honolulu, HI; Oakland, CA; Sacramento, CA; and San Diego, CA.

12. John Qoyawayma

Michael J. Carroll
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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF JOHN QOYAWAYMA REGARDING VISUAL RESOURCES (VISUAL SIMULATIONS)

I, John Qoyawayma, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I attended Arizona State University from 1983-1985, and Scottsdale Community College from 1983-1984 with a study in Industrial Technology and Manufacturing. I have over 31 years of experience in using visual technologies to assist in the development, analysis, management, and communication of information. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1019: Application for Certification Section 4.13, Visual Resources (visual simulations) (CEC TN #204219-20);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement - Demolition of

Mandalay Generating Station Units 1 and 2 (Section 4.13; visual simulations) (CEC TN #206698);

- Applicant's Exhibit No. 1084: Refinement to Transmission Interconnection (visual simulations) (CEC TN #213000); and
- Applicant's Exhibit No. 1090: Puente Power Project (P3) Project Enhancement – Outfall. Removal and Beach Restoration (Section 3.13; visual simulations) (CEC TN #213802).

I hereby sponsor this declaration (Applicant's Exhibit No. 1115) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.14, Visual Resources (CEC TN #214712); and
- CEC FSA, Part 1, Visual Resources Appendix 1 (CEC TN #214712).

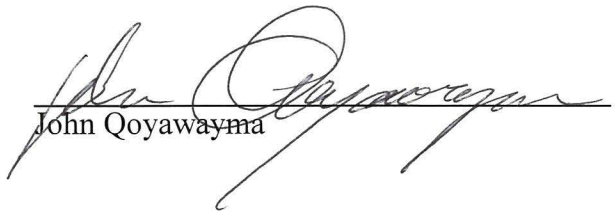
5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. I prepared visual simulations from various observation points for the Application for Certification (AFC) and for several modifications that were made to the Project following filing of the AFC, including the proposed demolition of Mandalay Generating Station (MGS) Units 1 and 2, modifications to the proposed transmission line interconnection, and the removal of the existing MGS outfall. I collaborated with Louise Kling of AECOM, who prepared the visual analysis of the Project on behalf of the Applicant.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification VIS-1 through VIS-3 contained in the Final Staff Assessment (CEC TN #214712), the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts with respect to visual resources and will comply with all applicable laws, ordinances, regulations and standards pertaining to visual resources.

Executed on January 17, 2017, at Phoenix, AZ.

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



John Qoyawayma

ATTACHMENT A

AECOM

John Qoyawayma
3D Visualization/Multimedia Specialist

Education

Industrial Technology and Manufacturing (CAD/CAM)/1983-1985/Arizona State University
Business Computing Systems/1983 Maricopa Tech
General Academics/1982-1984/ Scottsdale Community College

Years of Experience

With AECOM: 31
With Other Firms: 0

Training

Autodesk InfraWorks 360
Autodesk University 2015

Areas of Expertise

Photographic Simulations
Visual Analysis and Simulations
3D Modeling
Animation
Video Production
Audio Recording
Interactive Multimedia Production
Graphic Design

Mr. Qoyawayma has over 31 years of experience in using visual technologies to assist in the development, analysis, management, and communication of information. He is proficient in visual communication technologies, including photographic simulation, animation, three-dimensional (3D) modeling, video production, interactive multimedia, website development, audio recording, and graphic design. He has prepared visual simulations and multimedia products on behalf of Fortune 500 companies and international corporations for presentation to federal, state, and local agencies throughout the western United States and Alaska. He has developed simulations in support of National Environmental Policy Act (NEPA) compliance documents, as well as projects using the Bureau of Land Management's Visual Resource Management (VRM) system and the U.S. Forest Service's Visual Management System (VMS). He is experienced in working with the California Energy Commission relating to visual environmental compliance policy. He has significant expertise with all aspects of marketing, multimedia and communication graphics and generates creative solutions through his years of technical understanding of advanced computer programs across multiple platforms.

Experience

Visual Simulation Lead, Puente Power Project, Oxnard, California, NRG Oxnard Energy Center, LLC: Prepared visual simulations from various observation points for the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Simulations also included the proposed demolition of Mandalay Generating Station Units 1 and 2.

APS Ocotillo Generation Project, Arizona Public Service (APS), Tempe, Arizona. Mr. Qoyawayma provided visual simulations and assisted in the development of a 3d model and flyover of the existing and proposed site. The project included removal existing steam units (220 MW) constructed in 1960 and installation of five General Electric LMS 100 combustion turbines. As part of the state permitting and public involvement efforts a 3D BIM model of the existing site was developed and proposed facilities were modeled in the BIM model. Animations and renderings were developed from this model. http://www.azenergyfuture.com/ocotillo/

Gateway West Transmission Project Third-Party Environmental Impact Statement (EIS), Bureau of Land Management (BLM), TetraTech, Wyoming and Idaho. Mr. Qoyawayma provided over 100 simulations of the proposed transmission line from various locations along the 1,200 mile route. URS Corporation conducted a comprehensive visual resource inventory and impact analysis utilizing BLM VRM system in the evaluation of potential impacts from the construction and operation of nearly 1,200 miles of high voltage (500kV) electrical transmission line. Project included simulations from historically significant views from Oregon Trail. Responsibilities included field collection and management of 18,000

photographs from 1,400 viewpoints, and management of production of 100 photographic simulations on this multi-state, multi-agency project.

Sun Valley to Morgan Transmission Line EIS Project, Maricopa County, Arizona, Arizona Public Service. Produced 23 visual simulations for impact assessment for incorporation into an EIS by a third-party contractor. The project consisted of 38 miles of 500/230kV proposed transmission line routes that crossed Bureau of Land Management, Arizona State Trust, and private land. Efforts included field data collection, recording visual contrast rating, photography, coordinating multiple field visits including a trip on off-highway vehicles (OHV) to capture impacts to OHV trail riders.

Mohave County Wind Project, British Petroleum (BP), Mohave County, Arizona. Mr. Qoyawayma provided visual simulations for an EIS for a proposed wind farm located in northeastern Arizona. The proposed project required coordination with the State and District, and National BLM offices, FAA staff, and representatives from the Lake Mead National Recreation Area. Included in this effort are the field data and photography collection and the development of visual simulations to show the appearance of wind turbines access roads, and transmission lines. Simulations from this project were used in the “Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands” as positive examples of wind generation simulations.

NHA Flood Hazard Identification and Mitigation project, Navajo Housing Authority (NHA), Arizona, Colorado, New Mexico, Utah. URS Corporation designed and implemented a project to provide the Navajo Housing Authority (NHA), with floodplain information and a hazard mitigation plan that it previously lacked, as part of an effective community outreach strategy to implement the engineering, mapping and mitigation policies. Several 3D fly-through videos in both English and Navajo were created that took into consideration Navajo tradition and culture. The educational videos displayed identified flood hazards over NHA’s imagery and topographical data. This project was recently featured in TME the military engineer online.

Indian Bend Road Improvements, City of Scottsdale, Maricopa County, Arizona. Assisted in the Development of visual simulations for the Indian Bend Road Improvements project, which made functional and aesthetic improvements to the City of Scottsdale roadway between Scottsdale and Hayden Roads where the road crosses Indian Bend Wash. Improvements to the roadway included additional through lanes, turn lanes, traffic signals, intersection widening, pedestrian and bicycle facilities, drainage improvements, and beautification. The project received a 2010 Grand Award at the American Council of Engineering Companies Engineering Excellence Awards, an Award of Merit in the category of Art in Public Places from the Valley Forward Association Environmental Excellence Awards, and a Best of 2010 Award in Design and Construction from Southwest Contractor Magazine.

Visual Simulations, ELP Sun Bowl Communications Tower, El Paso County, Texas, Verizon Wireless. Developed simulations of proposed communication tower located near the Sun Bowl at The University of Texas in El Paso. Coordinated the field data collection team and data management and preparation of the visual simulations. Due to field team access

constraints a cloud-based photogrammetry tool was utilized to create textured 3D mesh and point clouds from field photos.

Visual Simulation Lead, Environmental Assessment for Massachusetts, Nantucket County, Massachusetts, Bureau of Ocean Energy Management (BOEM). Visual simulation specialist on the EA to evaluate potential impacts of the installation and operation of potential equipment offshore of Massachusetts. Site assessment included the installation and operation of meteorological towers with or without tethered buoys, as well as meteorological buoys, and vessel transit to and from port areas.

13. Gary Rubenstein

Michael J. Carroll
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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF GARY RUBENSTEIN REGARDING AIR QUALITY AND PUBLIC HEALTH AND SPECIFIED AREAS IN OTHER DISCIPLINES

I, Gary Rubenstein, declare as follows:

1. I am employed by Sierra Research, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor of Science Degree in Engineering from the California Institute of Technology in 1973. I have over 44 years of experience regarding the evaluation of air quality and public health impacts, including impacts associated with greenhouse gas emissions, and related issues in the disciplines of alternatives, biological resources (nitrogen deposition), traffic and transportation (thermal plumes), visual resources (visible plumes), energy efficiency, and environmental justice. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1007: Application for Certification (AFC) Section 4.1, Air Quality (CEC TN #204219-8);
- Applicant's Exhibit No. 1008: AFC Section 4.2, Biological Resources (portions pertaining to nitrogen deposition) (CEC TN #204219-9);
- Applicant's Exhibit No. 1015: AFC Section 4.9, Public Health (CEC TN #204219-16);
- Applicant's Exhibit No. 1018: AFC Section 4.10, Traffic and Transportation (portions pertaining to visible and thermal plumes) (CEC TN #204219-19);
- Applicant's Exhibit No. 1019: AFC Section 4.10, Visual Resources (portions pertaining to visible plumes) (CEC TN #204219-20);
- Applicant's Exhibit No. 1027: AFC Appendix C, Air Quality (CEC TN #204220-3);
- Applicant's Exhibit No. 1036: Applicant's Data Adequacy Supplemental Response (Air Quality, Public Health) (CEC TN #204859);
- Applicant's Exhibit No. 1038: AFC Appendix J, Offsite Sensitive Receptor Summary (CEC TN 204220-10);
- Applicant's Exhibit No. 1043: Applicant's Responses to CEC Data Requests Set 1 (DR 1 through DR 13, DR 19 through DR 24) (CEC TN #205765);
- Applicant's Exhibit Nos. 1044 - 1051: Air Quality Modeling Output Files (CEC TN #205766-1 through #205766-8);
- Applicant's Exhibit No. 1053: NOx CEMS Data for Mandalay Generating Station Units 1 and 2 (CEC TN #206008);
- Applicant's Exhibit No. 1054: Applicant's Responses to City of Oxnard Data Requests Set 1 (CEC TN #206009);
- Applicant's Exhibit No. 1055: Applicant's Letter re: Air Quality Modeling Information (CEC TN #206014);
- Applicant's Exhibit No. 1060: Applicant's Responses to City of Oxnard Data Requests Set 3 (CEC TN #206458);
- Applicant's Exhibit No. 1062: Applicant's Responses to CEC Data Requests Set 2 (DR 48 through DR 72) (CEC TN #206614);

- Applicant's Exhibit No. 1064: Applicant's Project Enhancement and Refinement, Sections 4.1 (Air Quality), and 4.9 (Public Health) (CEC TN 206698);
- Applicant's Exhibit No. 1065: Applicant's Responses to CEC Data Requests Set 2 (CEC TN #206791);
- Applicant's Exhibit No. 1066: Applicant's Letter to VCAPCD re: Application for an Authority to Construct/ Determination of Compliance (CEC TN #206918);
- Applicant's Exhibit No. 1067: Revised Air Quality Emissions and Modeling Results for the Enhancement and Refinement - Demolition of Mandalay Units 1 and 2 (CEC TN #207055);
- Applicant's Exhibit No. 1068: Applicant's Alternative Sites Summary (portions pertaining to Air Quality and Public Health) (CEC TN #207096);
- Applicant's Exhibit No. 1070: Applicant's Responses to City of Oxnard Data Requests Set 4 (DR 80 through DR 82) (CEC TN #207179);
- Applicant's Exhibit No. 1073: Applicant's Synchronous Condenser Analysis (CEC TN #210450);
- Applicant's Exhibit No. 1075: Applicant's Letter Regarding Enclosed NOx ERC Summary Tables (CEC TN #210893);
- Applicant's Exhibit No. 1078: Sierra Research letter to Ventura County Air Pollution Control District Regarding Response to Sierra Club Concerns (CEC TN #211252);
- Applicant's Exhibit No. 1080: Letter to VCAPCD re: Comments on Preliminary Determination of Compliance (CEC TN #211989);
- Applicant's Exhibit No. 1083: Applicant's response to Sierra Club's Comments on Preliminary Determination of Compliance for Puente Power Project (CEC TN #212838);
- Applicant's Exhibit No. 1085: Responses to Comments on P3 PDOC Made by City of Oxnard, R. Sarvey/R. Simpson, CA Environ. Justice Alliance, & Sierra Club (CEC TN #213482);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683);

- Applicant's Exhibit No. 1091: Letter to Ventura County APCD re: Applicant's Responses to City of Oxnard's Comments on Preliminary Determination of Compliance (CEC TN #213919);
- Applicant's Exhibit No. 1097: Confidential Excel spreadsheet confidential file containing the updated detailed emission calculations in support of the updated modeling analysis (CEC TN #214441);
- Applicant's Exhibit No. 1098: Applicant's Comments on the Proposed Conditions of Certification in the Final Staff Assessment for the Puente Power Project (portions pertaining to air quality) (CEC TN #215352);
- Applicant's Exhibit No. 1099: Applicant's March, 19, 2015, Application to the Ventura County Air Pollution Control District (VCAPCD) for an Authority to Construct/ Determination of Compliance for the Proposed Puente Power Project (CEC TN #215395); and
- Applicant's Exhibit No. 1100: Applicant's May 15, 2015, Response to the VCAPCD's Information Request (CEC TN #215396).

I hereby sponsor this declaration (Applicant's Exhibit No. 1103) and the above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- Ventura County Air Pollution Control District (VCAPCD) Final Determination of Compliance, with attachments (FDOC) (CEC TN #214005-1 through #214005-9);
- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.1, Air Quality (CEC TN #214712);
- FSA, Part 1, Section 4.3, Biological Resources (portions pertaining to nitrogen deposition) (CEC TN #214712);
- FSA, Part 1, Section 4.9, Public Health (CEC TN #214712);
- FSA, Part 1, Section 4.12, Traffic and Transportation (portions pertaining to visible and thermal plumes, including Appendices TT-1, TT-2 and TT-3) (CEC TN #214712);

- FSA, Part 1, Section 4.14, Visual Resources (portions pertaining to visible plumes) (CEC TN #214712);
- FSA, Part 1, Air Quality Appendix AIR-1, Greenhouse Gas Emissions (CEC TN #214712);
- FSA, Part 1, Air Quality Appendix AIR-2, Additional Support of District Response to the Sierra Club Comment (CEC TN #214712); and
- FSA, Part 1, Air Quality Appendix AIR-3, Additional Responses to the Comments on Modeling (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Existing Air Quality in the Vicinity of the Project.* The U.S. Environmental Protection Agency (U.S. EPA) and California Air Resources Board (CARB) have each established ambient air quality standards to protect public health and welfare. Both state and national ambient air quality standards consist of two parts: an allowable concentration of a pollutant and an averaging time over which the concentration is to be measured. Allowable concentrations are based on the results of studies of the effects of pollutants on human health, crops, and vegetation. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (one hour, for instance) or to a relatively lower average concentration over a longer period. Air quality standards have been set for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate sulfates, respirable particulate matter (PM_{10}) and fine particulate

matter ($PM_{2.5}$). The Applicant, CEC staff and VCAPCD staff relied on three ambient air monitoring stations to characterize existing air quality at the Project site and the surrounding vicinity. These stations were used because of their proximity to the Project site and because they record representative, regional ambient conditions. Ambient concentrations of ozone, NO_2, PM_{10}, and $PM_{2.5}$ were taken from a monitoring station located at the Rio Mesa High School (approximately seven miles northeast of the Project site). Ambient concentrations of CO were collected from a monitoring station located in Goleta (approximately 36 miles northwest of the Project site). For SO_2, ambient concentrations were collected from a monitoring station located at U. C. Santa Barbara (approximately 40 miles northwest of the Project site). These are the nearest ambient monitoring stations to the Project site that are located at coastal locations, and the data collected at these stations are considered representative of ambient concentrations in the vicinity of the Project site.

b. *Ventura County Attainment Status*. The current attainment status of Ventura County for each of the pollutants for which U.S. EPA and CARB have established standards is as follows:

- **Ozone.** For purposes of federal air quality planning, Ventura County is classified as a nonattainment area for the federal eight-hour ozone standard. With respect to state standards, Ventura County is classified as a nonattainment area. Over the last five years, these standards have been exceeded on just three occasions.
- **Nitrogen Dioxide.** For purposes of both state and federal air quality planning, Ventura County is in attainment with regard to NO_2.
- **Carbon Monoxide.** For purposes of state and federal air quality planning, Ventura County is in attainment with regard to CO.
- **Sulfur Dioxide.** Ventura County is considered to be in attainment for SO_2 for purposes of state and federal air quality planning.
- **Respirable Particulate Matter (PM_{10}).** Ventura County is classified as nonattainment for the state PM_{10} standards (as is most of California) and as attainment for the federal PM_{10} standard.

- **Fine Particulates ($PM_{2.5}$).** Ventura County is in attainment with the state and federal $PM_{2.5}$ standards.

c. *Emissions Associated with Project Construction and Demolition.* Air emissions will result from the operation of diesel-fueled construction/demolition equipment and from construction/demolition worker and delivery truck travel during the construction and demolition periods. Fugitive dust emissions will also occur from ground disturbance and windblown dust. Air pollutant emissions during the construction/demolition periods have been calculated in accordance with the best available estimates of construction/demolition activity and equipment to be used. These emissions are quantified in: Applicant's Exhibit Nos. 1007, 1027, 1064 and 1067; and the CEC FSA Part 1, Section 4.1, Air Quality.

d. *Emissions Associated with Project Operation*. Air emissions will result from the operation of the new CTG, a new diesel emergency/standby generator engine, and one new natural gas compressor. Air pollutant emissions from the operation of the Project have been calculated based on the maximum capacity of the equipment, consistent with operating limits and proposed permit conditions, and thus represent a worst-case estimate. These emissions are quantified in: Applicant's Exhibit Nos. 1007 and 1027; the CEC FSA Part 1, Section 4.1, Air Quality; and the VCAPCD FDOC. Actual emissions during plant operation are expected to be much lower than the levels shown in the Applicant's Exhibits, FSA and FDOC.

e. *Greenhouse Gas Emissions.* I concur with the analysis and conclusions contained in CEC Staff's FSA, Part 1, Air Quality Appendix AIR-1, which analyzes potential impacts associated with emissions of greenhouse gases (GHG). The Project would replace existing, less efficient generating units with a state-of-the-art combustion turbine with higher efficiency and lower GHG emissions per megawatt hour. The Project would also be subject to California's GHG cap-and-trade program and would be required to obtain allowances or offsets to mitigate its GHG emissions.

f. *Public Health.* During Project demolition and construction, non-criteria pollutant emissions will result from the operation of diesel-fueled demolition/construction equipment and fugitive dust generated from equipment travel and

material handling activities. These emissions have been calculated in accordance with the best available estimates of construction/demolition activity and equipment to be used. Non-criteria pollutant emissions associated with the operation of the Project will consist of combustion by-products from the natural-gas-fired CTG and from routine testing of the diesel emergency/standby generator engine. These emissions have been calculated based on the maximum capacity of the equipment, consistent with operating limits and mitigation measures expected to be imposed as permit conditions, and thus represent a worst-case estimate. Actual non-criteria pollutant emissions during plant operation are expected to be much lower than the levels shown in the FSA and FDOC. The non-criteria pollutant emissions associated with demolition/construction and operation of the Project are contained in: Applicant's Exhibit Nos. 1007, 1027, 1064 and 1067; the CEC FSA, Part 1, Section 4.1 Air Quality; and in the VCAPCD FDOC. The public health impacts associated with the above non-criteria pollutant emissions were analyzed in the Applicant's Exhibit Nos. 1007, 1027, 1064 and 1067; the CEC AFC, Part 1, Section 4.9, Public Health; and the VCAPCD FDOC. These screening-level health risk assessments used the latest version of California Air Resources Board's Hotspots Analysis and Reporting Program, Version 2 (HARP2) model. The HARP2 model (which accounts for impacts on sensitive individuals such as seniors and children) was used to assess cancer risk, as well as non-cancer chronic and acute health hazards. The results of these analyses indicate that there will be no significant incremental public health impacts associated with the demolition/construction or operation of the Project.

g. *Cumulative Impacts*. A cumulative air quality impact protocol and analysis for the Project was prepared and included in Applicant's Exhibit Nos. 1007 and 1027. Consultation with the VCAPCD indicated that there were only two sources of emissions that had the potential to contribute, with the Project, to a significant air quality impact. For these two projects, CO was the only pollutant with emission increases above the de minimis level of 5 tons/year. Because the Project's modeled ambient CO impacts are below federal significant impact levels, the Applicant concluded that the CO impacts of the Project will be de minimis and that there is no need to perform a further CEQA cumulative analysis for this pollutant. The

ambient air quality impact analysis discussed above included the combination of worst-case Project impacts with maximum concentrations in the ambient air (reflecting the operation of existing sources); this analysis also demonstrates that the Project will not create any new cumulative impacts.

h. *Mitigation Measures/Conditions of Certification.* Except as set forth in Applicant's Exhibit No. 1098, Applicant concurs with the Proposed Conditions of Certification contained in CEC FSA Part 1, Section 4.1, Air Quality.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification AQSC-1 through AQSC-11, AQ-1 through AQ-61, and AQ-DE1 through AQ-DE12 contained in the Final Staff Assessment (CEC TN #214712) (modified as proposed in Applicant's Exhibit No. 1098), the Project, as proposed, will not result in any significant direct, indirect or cumulative environmental impacts with respect to air quality, public health, or related areas addressed herein and will comply with all applicable laws, ordinances, regulations and standards pertaining to air quality, public health, and related areas addressed herein.

Executed on January 18, 2017, at Sacramento, California.

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

Gary Rubenstein

ATTACHMENT A

sierra research

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Résumé

Gary S. Rubenstein

Education

1973, B.S., Engineering, California Institute of Technology

Professional Experience

8/81 to present Senior Partner
Sierra Research

As one of the founding partners of Sierra Research, responsibilities include project management and technical and strategy analysis in all aspects of air quality planning and strategy development; project licensing and impact analysis; emission control system design and evaluation; rulemaking development and analysis; vehicle inspection and maintenance program design and analysis; and automotive emission control design, from the initial design of control systems to the development of methods to assess their performance in customer service. As the Partner principally responsible for Sierra Research's activities related to stationary sources, he has supervised the preparation of control technology assessments, environmental impact reports and permit applications for numerous industrial and other development projects.

While with Sierra, Mr. Rubenstein has managed and worked on numerous projects, including preparation of nonattainment plans; preparation and review of emission inventories and control strategies; preparation of the air quality portions of environmental review documents for controversial transportation, energy, mineral industry and landfill projects; preparation of screening health risk assessments and supporting analyses; and the development of air quality mitigation programs. Mr. Rubenstein has managed the preparation of air quality licensing applications for over 18,000 megawatts of generating capacity before the California Energy Commission, and has managed air quality analyses for over 30,000 megawatts of generating capacity in a variety of jurisdictions.

Mr. Rubenstein and his colleagues at Sierra have followed literature related to climate change and the control of greenhouse gas emissions since the early 1990s. The firm's work has focused on understanding the scientific, legal and regulatory basis for the regulation of greenhouse emissions by various jurisdictions in the United States, and on the evaluation of the costs and environmental impacts of alternative regulatory approaches for controlling greenhouse gas emissions.

Mr. Rubenstein has presented testimony and served as a technical expert witness before numerous state and local regulatory agencies, including the U.S. Environmental Protection Agency, California State Legislative Committees, the California Air Resources Board, the California Energy Commission, the California Public Utilities Commission, numerous California air pollution control districts, the Connecticut Department of Environmental Protection, the Hawaii Department of Health, and the Alabama Department of Environmental Management. Mr. Rubenstein has also served as a technical expert on behalf of the California Attorney General and Alaska Department of Law, and has provided expert witness testimony in a variety of administrative and judicial proceedings.

6/79 to 7/81 Deputy Executive Officer
California Air Resources Board

Responsibilities included policy management and oversight of the technical work of ARB divisions employing over 200 professional engineers and specialists; final review of technical reports and correspondence prepared by all ARB divisions prior to publication, covering such diverse areas as motor vehicle emission standards and test procedures, motor vehicle inspection and maintenance, and air pollution control techniques for sources such as oil refineries, power plants, gasoline service stations and dry cleaners; review of program budget and planning efforts of all technical divisions at ARB; policy-level negotiations with officials from other government agencies and private industry regarding technical, legal, and legislative issues before the Board; representing the California Air Resources Board in public meetings and hearings before the California State Legislature, the California Energy Commission, the California Public Utilities Commission, the Environmental Protection Agency, numerous local government agencies, and the news media on a broad range of technical and policy issues; and assisting in the supervision of over 500 full-time employees through the use of standard principles of personnel management and motivation, organization, and problem solving.

7/78 – 7/79 Chief, Energy Project Evaluation Branch
Stationary Source Control Division
California Air Resources Board

Responsibilities included supervision of ten professional engineers and specialists, including the use of personnel management and motivation techniques; preparation of a major overhaul of ARB's industrial source siting policy; conduct of negotiations with local officials and project proponents on requirements and conditions for siting such diverse projects as offshore oil production platforms, coal-fired power plants, marine terminal facilities, and almond-hull burning boilers.

During this period, Mr. Rubenstein was responsible for the successful negotiation of California's first air pollution permit agreements governing a liquefied natural gas terminal, coal-fired power plant, and several offshore oil production facilities.

10/73 to 7/78 Staff Engineer
Vehicle Emissions Control Division
California Air Resources Board

Responsibilities included design and execution of test programs to evaluate the deterioration of emissions on new and low-mileage vehicles; detailed analysis of the effect of California emission standards on model availability and fuel economy; analysis of proposed federal emission control regulations and California legislation; evaluation of the cost-effectiveness of vehicle emission control strategies; evaluation of vehicle inspection and maintenance programs, and preparation of associated legislation, regulations and budgets; and preparation of detailed legal and technical regulations regarding all aspects of motor vehicle pollution control. Further duties included preparation and presentation of testimony before the California Legislature and the U.S. Environmental Protection Agency; preparation of division and project budgets; and creation and supervision of the Special Projects Section, a small group of highly trained and motivated individuals responsible for policy proposals and support in both technical and administrative areas (May 1976 to July 1978).

Credentials and Memberships

Air & Waste Management Association (Past Chair, Board of Directors, Golden West Section; Past Chair, Board of Directors, Mother Lode Chapter)

American Society of Mechanical Engineers

Qualified Environmental Professional, Institute of Professional Environmental Practice, 1994

Selected Publications (Author or Co-Author)

"Multipollutant Approaches to Regulation," presentation at the California Council for Environmental and Economic Balance 2016 Summer Issues Seminar, July 11, 2016.

"Air Quality and Public Health," presentation at the California Council for Environmental and Economic Balance 2016 Summer Issues Seminar, July 13, 2016.

"Overview of the California Environmental Quality Act," presentation for private client, June 2016.

"The Efficacy of Greenhouse Gas Emission Caps at Local Refineries," presentation to the Bay Area Air Quality Management District Advisory Council, April 25, 2016.

"Fundaments of Air Quality Planning and Regulation," presentation to the Jiangsu Environmental Protection Department, October 20, 2015.

"Carbon Pollution Standards for New, Modified and Reconstructed Power Plants – Final Rule and Impacts," presentation for private clients, August 27, 2015.

"Understanding the Supreme Court's MATS Ruling," presentation for private clients, July 15, 2015.

"OEHHA's New Hot Spots Exposure and Assessment Guidelines," prepared for private client, October 30, 2014.

"Diesel Particulate Matter Regulation and Health Impacts," presentation at the 2012 Railroad Environmental Conference on October 16, 2012, in Champagne-Urbana, Illinois.

"Using Screening Tools to Identify Priority Communities," presentation at the California Council for Environmental and Economic Balance 2012 Summer Issues Seminar on July 16, 2012, at Squaw Valley, California.

"Slogging Through the Modeling Maze: New National Ambient Air Quality Standards for NO_2, SO_2 and $PM_{2.5}$," presentation to the Air & Waste Management Association on February 12, 2012, in Sacramento, California.

"Climate Change Regulation and Environmental Justice," presentation at the California Council for Environmental and Economic Balance 2011 Summer Issues Seminar on July 11, 2011, at Squaw Valley, California.

"EPA Greenhouse Gas Tailoring Rule," presentation to the Air & Waste Management Association on February 16, 2011, at Bakersfield, California.

"Non-Traditional ERCs – Giving Credit Where Credit is Due," presentation to the California Desert Air Working Group on November 17, 2010, at Laughlin, Nevada.

"Sensitivity and Vulnerability: Community Health Factors as Part of Environmental Decision Making," presentation at the California Council for Environmental and Economic Balance 2010 Summer Issues Seminar on July 19, 2010, at Squaw Valley, California.

"Evaluation of CTM-039 Dilution Method for Measuring $PM_{10}/PM_{2.5}$ Emissions from Gas-Fired Combustion Turbines," August 20, 2009.

"Application of SCR to Small Sources: A Case Study" presentation to the Air & Waste Management Association on January 29, 2009, in Diamond Bar, California.

"Dealing with the Scarcity of PM Offsets," presentation to Law Seminars International: Air Quality Regulation in California on April 15, 2008, in Los Angeles, CA.

"Field Demonstration of a Dilution-Based Particulate Measurement System," presentation to Stationary Source Sampling and Analysis for Air Pollutants on March 5, 2008, in San Diego, CA.

"The California Global Warming Solutions Act of 2006 – Implementation Considerations," presentation to Law Seminars International: Energy in California 2007 on September 17, 2007, in San Francisco, CA.

"Preparing for and Conducting Air Quality Compliance Audits," presentation to California Desert Air Working Group on October 19, 2006, in Big Bear Lake, CA.

"Test Results from Sugar Cane Bagasse and High Fiber Cane Co-fired with Fossil Fuels," Biomass and Bioenergy, Vol. 30, Issue 6. pp. 565-574. June 2006.

"Gas Turbine Particulate Matter Emissions – Update," Presentation to ASME/EIGTI Turbo Exp. on June 9, 2005 in Reno, NV.

"Gas Turbine Startup Emissions," Presentation to ASME/IGTI Turbo Expo on June 9, 2005 in Reno, NV.

"Gas Turbine Particulate Matter Emissions – Update," Presentation to ASME/IGTI Turbo Expo on June 18, 2003 in Atlanta, GA.

"Sources of Uncertainty When Measuring Particulate Matter Emissions from Natural Gas-Fired Combustion Turbines," presentation to Air & Waste Management Association on March 30, 2001 in San Diego, CA.

"An Analysis of the Effect on Emissions of Allowing Drive-Thru Service Lanes," Sierra Research Report No. SR97-11-01, prepared for California Business Properties Association, November 10, 1997.

"Searles Valley Air Quality Study (SVAQS) Final Report," Sierra Research Report No. SR94-02-01, prepared for North American Chemical Company, February 1994.

"Regulatory Strategies for Reducing Emissions from Marine Vessels in California Waters," Sierra Research Report No. SR91-10-01, prepared for the California Air Resources Board, October 4, 1991.

"An Analysis of the Effect on Emissions of Eliminating Drive-Thru Services Lanes," Sierra Research Report No. SR91-07-03, prepared for California Restaurant Association, July 25, 1991.

"Development of the CALIMFAC California I/M Benefits Model," Sierra Research Report No. SR-91-01-01, prepared for the California Air Resources Board, Agreement No. A6-173-64, January 1991.

"Criteria Pollutant Emission Inventory for the Coachella Valley Study Area," Sierra Research Report No. SR90-11-01, prepared for South Coast Air Quality Management District, November 1990.

"User's Guide to the CALIMFAC California I/M Benefits Model," Prepared for the California Air Resources Board, May 1990.

"Potential Emissions and Air Quality Effects of Alternative Fuels – Final Report," Sierra Research Report No. SR89-03-04, prepared for Western States Petroleum Association, March 28, 1989.

"Interprecursor Offset Ratios for Ozone in the Searles Valley," Sierra Research Report No. SR89-03-02, prepared for Kerr-McGee Chemical Company, March 17, 1989.

"An Assessment of the Quality of California's Air Pollution Emissions Inventory," Sierra Research Report No. SR88-05-01, prepared for Western Oil and Gas Association, May 1988.

"Trends in Visibility-Related Emissions Affecting the R-2508 Restricted Airspace," Sierra Research Report No. SR88-05-02, prepared for Western Oil and Gas Association, May 1988.

"Volume I, Executive Summary: Impacts of Air Quality Regulations on Visibility-Related Emissions in the California R-2508 Restricted Airspace," Sierra Research Report No. SR88-03-02, prepared for Western Oil and Gas Association, March 1988.

"Volume II, Determination of California Air Basins Which Can Affect Visibility in the R-2508 Restricted Airspace," Sierra Research Report No. SR88-03-03, prepared for Western Oil and Gas Association, March 1988.

"Air Quality Impact Analysis for the Soledad Biomass Resource Recovery Project," Sierra Research Report No. SR87-10-01, prepared for Western Forest Power Corp., October 1987.

"Air Quality Impact Analysis for the Honey Lake Biomass Power Plant Project," Sierra Research Report No. SR87-05-01, prepared for GeoProducts-Zurn/NEPCO, May 22, 1987.

"1986 Update to the Kern County Nonattainment Area Plan," Sierra Research Report No. SR86-03-01, prepared for Kern County Air Pollution Control District and Kern Council of Governments, March 1986.

"An Analysis of Test Results on Grancor Pollution Control Devices for Automotive Retrofit Programs," Sierra Research Report No. SR85-09-01, prepared for Grancor, September 1985.

"Temperature Correction Factors for California's Motor Vehicle Emissions Model," Sierra Research Report No. SR85-06-01, prepared for the California Air Resources Board, June 1985.

"Critique of the EPA I/M Benefits Model for 1980 and Older Model Cars," Sierra Research Report No. SR85-06-02, prepared for the California Air Resources Board, June 1985.

"Emission Factors for 1980 and Later Model Year California Passenger Cars and Light-Duty Trucks," Sierra Research Report No. SR85-06-03, prepared for the California Air Resources Board, June 1985.

"Technology Assessment for Light-Duty Vehicle Compliance with a 0.4g/m NOx Standard," Sierra Research Report No. SR85-06-04, prepared for the California Air Resources Board, June 1985.

"Development of California's I/M Credits Model," Sierra Research Report No. SR85-06-06, prepared for the California Air Resources Board, June 1985.

"A Comparison of Refueling Emissions Control with Onboard and Stage II Systems," SAE Technical Paper No. 851204, Society of Automotive Engineers, May 1985.

"Evaluation of Automotive CO Emissions Control Techniques at Low Temperatures (METFAC Report 2)," Sierra Research Report No. SR84-11-01, prepared for Alaska Department of Environmental Conservation, November 1984.

"Critical Metal Consumption in Automotive Catalysts – Trends and Alternatives," Sierra Research Report No. SR83-12-01, prepared for Congress of the United States, Office of Technology Assessment, December 1983.

"Low Temperature Automotive Emissions (METFAC, Report 2)," Sierra Research Report No. SR83-11-01, prepared for Alaska Department of Environmental Conservation, November 1983.

"Light-Duty Vehicle CO Emissions During Cold Weather," SAE Technical Paper No. 831698, Society of Automotive Engineers, Fuels and Lubricants Meeting, October 31-November 3, 1983.

"Proposed Emission Cutpoints for the Anchorage Inspection and Maintenance Program," Sierra Research Report No. SR83-06-01, prepared for Municipality of Anchorage, Alaska, June 1983.

"A Study of Air Pollution Offsets for Cogeneration and Resource Recovery Technologies in Kern County – Interim Report: Project Inventory," Sierra Research Report No. SR82-01-01, prepared for Kern County Air Pollution Control District and Kern County Council of Governments, January 1983.

"Automotive Retrofit Devices for Improving Cold Weather Emissions and Fuel Economy," Sierra Research Report No. SR82-10-01, prepared for U.S. Army Cold Regions Research and Engineering Laboratory, October 1982.

"Carbon Monoxide Air Quality Trends in Fairbanks, Alaska," Sierra Research Report No. SR82-09-01, prepared for Fairbanks North Star Borough, September 1982.

"Cogeneration and Resource Recovery in Kern County – Final Report," Sierra Research Report No. SR82-06-01, prepared for Kern County Air Pollution Control District and Kern County Council of Governments, June 1982.

"Cold Weather CO Problems – An Analysis of Research Needs," Sierra Research Report No. SR82-04-01, prepared for Alaska Department of Environmental Conservation, April 1982.

"The Potential for the Use of Catalytic NOx Controls on Stationary Sources in California," Sierra Research Report No. SR82-02-01, February 1982.

"Staff Report - Cogeneration Technology and Resource Recovery Status Report," California Air Resources Board, November 1981.

"The Effect of Clean Air Act Amendments on High Altitude Passenger Cars," Sierra Research Report No. SR81-09-01, September 1981.

"Staff Report - Public Meeting to Discuss Proposed Guidelines for the Control of Emissions from Coal-Fired Power Plants (81-11-2)," California Air Resources Board, June 1981.

"Staff Report - Public Hearing to Consider Amendments to Title 13, Section 1960.1, CAC, Regarding Exhaust Emission Standards and Test Procedures for 1983 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," California Air Resources Board, May 1981.

"Staff Report - Suggested Control Measure for the Control of Hydrogen Sulfide Emissions from Geothermal Operations at the Geysers Known Geothermal Resources Area (81-6-1)," California Air Resources Board, April 1981.

"Staff Report - Proposed Methodology for Calculating a NOx Amelioration Factor for Light-Duty Diesel Vehicles," California Air Resources Board, April 1981.

"Staff Report - A Proposed Air Resources Board Policy Regarding Incineration as an Acceptable Technology for PCB Disposal," California Air Resources Board, March 1981.

"Staff Report - Public Meeting to Discuss a Proposed Air Resources Board Policy Regarding Incineration as an Acceptable Technology for PCB Disposal," California Air Resources Board, March 1981.

"Staff Report - Suggested Control Measure for the Control of Oxides of Nitrogen Emissions from Electric Utility Gas Turbines (81-4-2)," California Air Resources Board, March 1981.

"Staff Report - Public Hearing to Consider Amendments to Title 13, Section 1956.7, CAC, Regarding Exhaust Emission Standards and Test Procedures for 1984 and Subsequent Model Heavy Duty Engines (81-1-1)," California Air Resources Board, January 1981.

"Gasohol: Technical, Economic or Political Panacea?" SAE Paper No. 800891, 1980.

"Staff Reports Related to Public Hearing to Consider Amendments to Rule 475.1 of the South Coast Air Quality Management District and to Rule 59.1 of the Ventura County Air Pollution Control District, Which Control the Emissions of Oxides of Nitrogen from Power Plants," California Air Resources Board, January 1980; March 1980; November 1980; December 1980.

"Staff Report - Public Hearing to Consider Confirmation of Emergency Adoption of Section 1960.4, Title 13, CAC, Regarding Special NOx Standards for Small-Volume Manufacturers (80-25-1)," California Air Resources Board, December 1980.

"Staff Report - Public Hearing to Consider Adoption of California Assembly- Line Test Procedures for Certain 1982 Model Year Vehicles and Adoption of Section 2060, Title 13, CAC, Incorporating the Test Procedures (80-26-4)," California Air Resources Board, December 1980.

"Staff Report - Public Hearing to Consider Repeal of 1955-1965 Model Year Motor Vehicle Exhaust Retrofit Emission Control Requirements - Title 13, CAC Section 2007 (80-20-2)," California Air Resources Board, October 1980.

"Staff Report - Public Hearing to Consider Amendments to Rule 424 of the Kern County APCD Controlling Emissions of Sulfur Oxide from Steam Generators Used in Oil Field Operations," California Air Resources Board, October 1980.

"Staff Report - Proposed Amendments to Title 13, CAC, Sections 2035-42, Regarding Warranty of Emissions-Related Components of Vehicles (80-18-1)," California Air Resources Board, September 1980.

"Staff Report - Proposed Amendment to Title 13, CAC Regarding Standards and Test Procedures for Modified Vehicles - 1981 and Subsequent Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," California Air Resources Board, September 1980.

"Staff Report - Public Meeting to Discuss Issues Related to Power Plant Siting," California Air Resources Board, September 1980.

"Staff Report - Emergency Public Hearing to Consider Amendments to Title 13, CAC, Regarding Exhaust Emission Standards for Oxides of Nitrogen (NOx) from Vehicles Produced by Small Manufacturers for the 1982-1986 Model Years of Passenger Cars, Light-Duty Trucks and Medium- Duty Vehicles," California Air Resources Board, August 1980.

"Staff Report - Emergency Public Hearing to Consider Adoption of a Particulate Exhaust Emission Standard for 1982 and Subsequent Model Year Light-Duty Diesel Vehicles and to Consider Amending the 1982 NOx Exhaust Emission Standard for Those Vehicles (80-15-2)," California Air Resources Board," August 1980.

"Cogeneration Technology and Resource Recovery Status Report," California Air Resources Board, August 1980.

"Staff Report - Response to the Motorcycle Manufacturers' Petition Requesting the Board Reevaluate the 1.0 Gram Per Kilometer Exhaust Emission Standard for 1982 and Subsequent Model Year Motorcycles (80-13-3)," California Air Resources Board, July 1980.

"Staff Report - Inventory of Potential Cogeneration Technology and Resource Recovery Projects Planned or Proposed to Be Constructed Before 1987," California Air Resources Board, July 1980.

"Staff Report - Public Hearing to Consider Proposed Amendments to Kern County APCD Rule 424 - Sulfur Compounds from Oil Field Steam Generators," California Air Resources Board, May 1980.

"Staff Report - Public Hearing to Consider Amending the Rules and Regulations of Imperial County Air Pollution Control District, Los Angeles County Air Pollution Control District and San Bernardino County Air Pollution Control District," California Air Resources Board, May 1980.

"Staff Report - Public Hearing to Consider Amendments to Title 13, CAC, Regarding the Extension of California's 1980 Heavy-Duty Engine Emission Standards through the 1983 Model Year," California Air Resources Board, May 1980.

"Staff Report - Public Hearing to Consider Amendments to the Rules and Regulations of the Kern County APCD Amendments to Rule 210.1, Standard for Authority to Construct, and Addition of Rule 425, Relating to Retrofit Control for Emissions of Oxides of

Nitrogen from Oil Fired Steam Generators," California Air Resources Board, March 1980.

"Staff Report - Public Hearing to Consider Proposed Amendments to Title 13 of the Administrative Code and to the Exhaust and Evaporative Emission Standards and Test Procedures for 1981 and Subsequent Model year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," California Air Resources Board, March 1980.

"Air Pollution Aspects of Resource Recovery Facilities," California Air Resources Board, March 1980.

"Memorandum of Agreement - Hondo 'A' Development Santa Ynez Unit, Santa Barbara Channel between The State of California, County of Santa Barbara and Santa Barbara Air Pollution Control District and Exxon Company, U.S.A.," California Air Resources Board, February 1980.

"A Report on California's Certificate of Compliance Program prepared for the California Legislature Joint Legislative Budget Committee in accordance with the requirements of the Supplemental Report on Item 194 of the Committee of Conference on the Budget," California Air Resources Board, December 1979.

"Status Report on the Need for/and Feasibility of a 0.4 NOx Standard for Light Duty Motor Vehicles," California Air Resources Board, December 1979.

"Staff Report - Status of NOx Control for Steam Generators and Availability of NOx Trade-offs in Kern County (79-27-1b)," California Air Resources Board, November 1979.

"Staff Report - Public Meeting to Consider Model Rule for the Control of Oxides of Nitrogen Emissions from Stationary Internal Combustion Engines (79-28-2)," California Air Resources Board, November 1979.

"First Annual Report to the Legislature on the Mandatory Vehicle Inspection Program (MVIP)," California Air Resources Board, October 1979.

"Chapter 27, California Lead Control Strategy - Revision to the State of California Implementation Plan for the Attainment and Maintenance of Ambient Air Quality Standards," California Air Resources Board, September 1979.

"Staff Report - Public Hearing to Reconsider the Adoption by the Board into the Regulations of the Kern County Air Pollution Control District on March 23, 1979, of Rule 424, for the Control for Emissions of Sulfur Compounds from Steam Generators Used in Oil Field Operations," California Air Resources Board, August - September 1979.

"Staff Report - Public Hearing to Consider the Adoption of Chapter 27 as a Revision to the State of California Implementation Plan for the Attainment and Maintenance of the National Ambient Air Quality Standards for Lead," California Air Resources Board, August 1979.

"Staff Report - Public Hearing to Consider Amendment of the State Regulation Which Limits the Lead Content of Gasoline Sold in California (79-22-1)," California Air Resources Board, August 1979.

"Staff Report – Alcohols and Alcohol/Gasoline Blends as Motor Fuels," California Air Resources Board, August 1979.

"Centralized Vehicle Inspection/Maintenance in California," California Air Resources Board, May 1979.

"Staff Report - Public Hearing to Consider Changes to the Air Resources Board's Standards and Test Procedures for 1980 and Subsequent Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," California Air Resources Board, April 1979.

"Staff Report - Public Hearing to Consider Proposed Changes in the Regulations of the Air Resources Board Regarding Predelivery Inspection and Compliance Test Evaluation," California Air Resources Board, April 1979.

"An Evaluation of California's Private Garage Emissions Inspection Program," California Air Resources Board, March 1979.

"Staff Report - Proposed Rule For Control of Emissions of Sulfur Compounds From Steam Generators and Boilers Used in Oilfield Operations in the Kern County Air Pollution Control District," California Air Resources Board, March 1979.

"Staff Report - Public Hearing to Consider Adoption of a Regulation Controlling Emissions of Sulfur Compounds from Steam Generators Used in Oilfield Operations in the Kern County APCD," California Air Resources Board, March 1979.

"Staff Report - Revisions to the State of California Implementation Plan (SIP) for the Attainment and Maintenance of National Ambient Air Quality Standards - Kings County, Madera County, Merced County, and Tulare County Non-attainment Plans (NAPs)," California Air Resources Board, February 1979.

"Staff Report - Public Meeting to Consider a Proposed Model New Source Review Rule," California Air Resources Board, January 1979.

"Staff Report - Proposed ARB-CEC Joint Policy Statement of Compliance with Air Quality Laws by New Power Plants (79-1-3)," California Air Resources Board, January 1979.

"Staff Report - Public Hearing to Consider Exhaust Standards for the Mandatory Vehicle Inspection Program," California Air Resources Board, September 1978.

"Staff Report - Public Hearing to Consider Proposed Emissions Warranty Regulations (78-3-1)," California Air Resources Board, February 1978.

"Staff Report - Public Hearing to Consider Proposed Highway Cycle Emission Standard for Passenger Cars, Light Duty Trucks, and Medium- Duty Vehicles (78-1-2)," California Air Resources Board, January 1978.

"Staff Report - Public Hearing to Consider Proposed Changes to Motor Vehicle Emission Standards Test Procedures, and Enforcement Programs (77-20-2)," California Air Resources Board, September 1977.

"Staff Report - Surveillance Bibliography of Passenger Cars, Motorcycles, Heavy-Duty and Medium-Duty Vehicles," California Air Resources Board, July 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding California Exhaust Emission Standards and Test Procedures for 1980 and Subsequent Model Motor Vehicles (78-9-2)," California Air Resources Board, May 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty Vehicles (77-12-1)," California Air Resources Board, May 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty Vehicles (77-9-2)," California Air Resources Board, April 1977.

"Staff Report - Manganese Fuel Additive MMT (77-9-3)," California Air Resources Board, April 1977.

"Staff Report - Public Hearing to Consider Amendments to the Hydrocarbon Standards and Test Procedures Applicable to 1978 Through 1981 Production Year Motorcycles (77-6-2)," California Air Resources Board, March 1977.

"Staff Report - Status Report on the Mandatory Vehicle Inspection Program (MVIP) (77-4-2)," California Air Resources Board, February 1977.

"Staff Report - Control of Motorcycle Evaporative Emissions and Certification of Motorcycle Fuel Fill Pipes (77-63)," California Air Resources Board, March 1977.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Vehicle Evaporative Emission Standards for 1980 and Subsequent Model Motor Vehicles (76-22-2 c)," California Air Resources Board, November 1976.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Exhaust Emission Standards and Test Procedures for 1979 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles (76-22-2 a)," California Air Resources Board, November 1976.

"Staff Report - Public Hearing on Proposed Changes to Regulations Regarding Allowable Maintenance During New Vehicle Certification of Light-Duty and Medium-Duty vehicles (76-22-2 b)," California Air Resources Board, November 1976.

"Staff Report - Evaluation of Mandatory Vehicle Inspection and Maintenance Programs," California Air Resources Board, May-August 1976.

"Staff Report - Public Hearing to Consider Proposed Changes to Regulations Regarding Approval of 1978 and Subsequent Model Light-Duty Trucks and Heavy-Duty Engines (76-6-2)," California Air Resources Board, March 1976.

"Staff Report - Public Hearing to Consider Amendments to California Fuel Evaporative Emissions Test Procedures for 1978 and Subsequent Model Gasoline-Powered Vehicles (76-6-3)," California Air Resources Board, March 1976.

"Staff Report - Public Hearing Regarding Amendment of Emission Standards and Test Procedures for Motorcycles (76-1-4)," California Air Resources Board, January 1976.

"Staff Report - Catalyst Service and Replacement Regulations (75-20-2)," California Air Resources Board, October 1975.

"Staff Report - Emergency Action to Amend the New Vehicle Approval Regulations Regarding Catalyst Change (75-18-2)," California Air Resources Board, September 1975.

"Staff Report - Progress Report on Technology to Control Sulfate Emissions from Catalyst-Equipped Vehicles (75-15-2)," California Air Resources Board, August 1975.

"Staff Report - Public Hearing to Consider 1978 Production Motorcycle Emission Standards (75-14-2)," California Air Resources Board, July 1975.

"Staff Report - Consideration of Regulation Change to Extend the Alternate Heavy-Duty Engine Standards for 1977 and Subsequent Years (75-14-3)," California Air Resources Board, July 1975.

"Staff Report - Motorcycle Emission Control Strategies (75-11-4)," California Air Resources Board, June 1975.

"Staff Report - Catalytic Converter Retrofit Program - Used Vehicles Retrofitted with Universal Oil Products Catalytic Converters Final Report," California Air Resources Board, May 1975.

"Staff Report - Estimate of Contribution of Motorcycles to California Air Pollution (75-9-5)," California Air Resources Board, May 1975.

"Staff Report - Public Hearing for Adoption of Proposed Changes to Vehicular Enforcement Regulations Including Recall Procedures (75-9-4)," California Air Resources Board, May 1975.

"Staff Report - Public Hearing to Consider Inspection Specification Regulations in Title 13 -- New Vehicles (continued) (75-9-3a)," California Air Resources Board, May 1975.

"Staff Report - Emergency Action to Delete High Altitude Test Provisions from the 1975 and Subsequent New Vehicle Approval Procedures (75-7-7)," California Air Resources Board, April 1975.

"Staff Report - Public Hearing to Consider Fuel Evaporative Emission Regulations for Light-Duty Vehicles (75-7-6)," California Air Resources Board, April 1975.

"Staff Report - Reconsideration of Exhaust Emission Standards for 1977 and Subsequent Model-Year Heavy-Duty Engines (75-7-2)," California Air Resources Board, April 1975.

"Staff Report - Exhaust Emission Standards for 1977 Model-Year Light-Duty Vehicles (75-5-2)," California Air Resources Board, March 1975.

"Smog: A Report to the People," Caltech Environmental Quality Lab, 1972.

14. Erik Skov

Michael J. Carroll
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650 Town Center Drive, 20th Floor
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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF ERIK SKOV REGARDING GEOLOGIC RESOURCES AND GEOLOGIC HAZARDS (EXCLUDING TSUNAMI)

I, Erik Skov, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor degree in geology from Humboldt State University in 1988. I have over 28 years of experience regarding the evaluation of potential impacts to geologic resources (including soils) as a result of development, as well as the risk to proposed development from geologic hazards. I am a California Professional Geologist (No. 7470) and a California Certified Hydrogeologist (No. 892). A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1010: Application for Certification Section 4.4, Geologic Hazards and Resources (CEC TN #204219-11) (with the exception of those portions related to tsunami hazard);
- Applicant's Exhibit No. 1017: Application for Certification Section 4.11, Soils (CEC TN #204219-18);
- Applicant's Exhibit No. 1070: Applicant's Responses to City of Oxnard Data Requests, Set 4 (DR 91) (CEC TN #207179); and
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683).

I hereby sponsor this declaration (Applicant's Exhibit No. 1107) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.11, Soil and Water Resources (portions pertaining to soils) (CEC TN #214712); and
- CEC FSA, Part 2, Section 5.2, Geology and Paleontology (portions pertaining to geology) (CEC TN #214713).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Soils*

i) *Soils on Project Site.* The Project site is previously disturbed brownfield land located within the existing Mandalay Generating Station (MGS). The Project site was originally graded in the 1950s during construction of the MGS and installation of a 30-inch-diameter natural gas line. The Project site has been previously used for temporary storage of dredged soils from the Edison Canal.

ii) *Potential Construction Impacts.* Prior to construction, a grading plan will be developed which will show existing and proposed features of the site (slopes, elevation, locations of cut-and-fill), as well as erosion and sediment control measures to be incorporated during construction to avoid significant impacts.

iii) *Potential Operational Impacts.* Project operations would not result in impacts to the soil from erosion, topsoil loss, or compaction. When construction is complete, the Project site will either be covered with facilities, gravel or paved; therefore, there would be no potential for soil erosion or topsoil loss. Final site drainage and erosion control features will be installed in compliance with the NPDES Construction General Permit and the standards in State Water Board Order 2000-0011 regarding Standard Urban Stormwater Mitigation Plans.

b. *Other Geologic Resources.* Other than petroleum, there are no known viable mineralogic or geologic resources at the proposed Project site. Development of the Project will not affect petroleum resources.

c. *Geologic Hazards (excluding tsunami).* Because of its geologic setting, the Project site could be subject to earthquake-related ground shaking. The Project site could also be subject to soil failure caused by liquefaction and/or dynamic compaction. Preconstruction investigation and design, and compliance with applicable construction standards, will ensure that the Project can withstand the potential effects of these hazards.

d. *Mitigation/Conditions of Certification.* I concur with the following proposed Conditions of Certification contained in the CEC FSA, Parts 1 and 2, that are relevant

to the matters addressed herein: SOIL&WATER-1 through SOIL&WATER-6, GEO-2, GEN-1, GEN-5 and CIVIL-1.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that, with implementation of proposed Conditions of Certification SOIL&WATER-1 through SOIL&WATER-6, GEO-2, GEN-1, GEN-5 and CIVIL-1 contained in the Final Staff Assessment (CEC TN #214712 and #214713), the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts to geologic resources, including soils. Furthermore, and with the caveat that I render no opinions herein with respect to tsunami hazards, in my expert opinion, the Project will be designed and constructed to withstand the potential effects of geologic hazards and will not exacerbate any potential effects that might result from geologic hazards. Finally, in my expert opinion, the Project will comply with all applicable laws, ordinances, regulations and standards pertaining to geologic resources and hazards.

Executed on January 17, 2017, at Oakland, CA.

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

Erik Skov

ATTACHMENT A

AECOM

Erik Skov, PG, CHG
Geologist and Hydrogeologist

Areas of Expertise

Site Characterization and Remediation
Remedial Action Plan Preparation
Remedial Investigations at State Superfund sites
Facility Closures
Subsurface soil/groundwater investigation design and implementation
Due Diligence/Auditing
Engineering Geology

Education

BA/Geology/1988/Humboldt State University

Years of Experience

With AECOM: 28
With Other Firms: 0

Registration/Certification

2003/Professional Geologist/CA/ #7470
2007/California State Certified Hydrogeologist/CA/#HG 892

Mr. Skov has more than 28 years of experience providing hazardous waste management services, including subsurface investigations involving extensive soil and groundwater sampling, monitoring well design and installation, aquifer testing, data interpretation, reporting, and remedial action plan preparation and implementation. He also participates in engineering geology studies, including siting investigations for hospitals, municipal landfills, and natural gas pipelines, and provides data input for slope stability investigations.

Experience

Industrial and Power Facilities

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Geology and Soils sections of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included assessing potential geologic hazards and mineral resources including: faulting and seismicity; fault rupture; seismic shaking; liquefaction; lateral spreading; dynamic compaction; compressible and expansive soils; corrosive soils; and landslides associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing geologic aspects of the project, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Task Leader, Sentinel Power Plant Project Application for Certification, Riverside County, CA, Competitive Power Ventures, 2007: Managed the data collection and preparation of the Waste Handling section of an Application for Certification (CEQA-equivalent document) for a 850 megawatt gas-fired simple cycle generation facility in Riverside County, California. Responsibilities included identifying and quantifying potential waste streams associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing waste generated at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Task Leader, Bridgeview Power Plant Project Application for Certification and Permitting, Contra Costa County, CA, TransCanada, 2006: Managed the data collection and presentation for the Waste Handling section of an Application for Certification (CEQA-equivalent document) for a combined-cycle generation facility in Contra Costa County, California. Responsibilities included identifying and quantifying potential waste streams associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing waste generated at the facility, and evaluating the

potential impacts and mitigation measures to be implemented during construction and management activities.

Task Leader, San Gabriel Generating Station Application for Certification, San Bernardino County, CA, Reliant Energy, 2005: Managed the data collection and preparation of the Waste Handling section of an Application for Certification (CEQA-equivalent document) for a 650 megawatt gas-fired combined-cycle generation facility in San Bernardino County. Responsibilities included identifying and quantifying potential waste streams associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing waste generated at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Technical Support, Potrero Power Plant Applications for Certifications and Permitting, San Francisco, CA, Mirant Corporation, 2000 – 2003,: Provided technical support for topics such as waste management, hazardous materials generation and handling, site investigation, and compliance with regulatory standards for a 540 megawatt natural gas-fired combined-cycle power plant. URS' services included the preparation of environmental documentation; permitting; site planning and engineering feasibility studies; onshore and offshore geotechnical engineering; and marine biological surveys, including Clean Water Act Section 316a and b studies and NPDES permitting. Key issues for the project included air quality, public health, environmental justice, soil contamination, and potential effects to biological resources of San Francisco Bay.

Task Leader, Colusa County Power Plant Project Application for Certification and Permitting, Colusa County, CA, Reliant Energy, 1999 – 2001: Managed the data collection and presentation for the Waste Handling section of an Application for Certification (CEQA-equivalent document) for a 500 megawatt gas-fired combined-cycle generation facility in Colusa County, California. Responsibilities included identifying and quantifying potential waste streams associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing waste generated at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Team Member and Technical Lead, Gas-Fired Cogeneration Plant EIS, Botany, New South Wales, U.S./ Australian Energy Consortium, 1996: Project entailed the preparation of an Environmental Impact Statement for the construction of a gas-fired cogeneration plant on a hazardous waste site in Botany, New South Wales. Project responsibilities included the evaluation and preparation of the geology, hydrogeology, and environmental construction management and mitigation section of the environmental document. Issues included the impact of the power plant construction on the distribution of subsurface contamination and the mitigation measures to be implemented to address the impacts. Subsequent to the submission of the environmental document, presented with a panel of other experts at a Commission of Inquiry called by the Minister for Urban Development, in support of the Development Application for the construction of the cogeneration plant.

Marsh Landing Generating Station Diesel Engine Amendment, Marsh Landing Generating Station LLC, Antioch, CA. Waste management lead for the preparation of an application for certification and construction monitoring for new generating units, electric and gas transmission lines adjacent to the facility, and water supply and wastewater pipelines at a 760-megawatt natural gas-fired generating facility.

Generating Station Application for Certification, E&L Westcoast, LLC, Colusa County, CA. Responsible for waste management portion of permitting for the generating station, a 660-megawatt power plant near Sacramento on a well situated site in a rural, sparsely populated area in the western Sacramento Valley that is used primarily for grazing and agriculture. E&L Westcoast, LLC, initiated the permit process with the California Energy Commission and then transferred ownership of the plant to Pacific Gas & Electric Company, which now operates the plant.

Facilities

Senior Geologist/Hydrogeologist, Cal-EPA DTSC As Needed Hazardous Waste/Site Mitigation and Brownfields Reuse Program: 2007 – 2013: Responsible for geologic and hydrogeologic review of workplans and reports and development of investigation and field scale remedial pilot strategies for several sites in the DTSC Site Mitigation and Brownfield Reuse portfolio including Harris Dry Cleaners, Peter Pan Cleaners, Caltech and Lane metal finishers, K&L Plating, TSI Blanken, Vallejo, and San Pablo, Bayview Plume, Hard Chrome, McNamara & Peepe, and Singer Friden SVE Pilot Study. Follow on work included geologic and hydrogeologic evaluation for In-Situ Chemical Oxidation (ISCO) and other remedial pilot scale tests at the Lane and Caltech metal finishers sites, K&L Plating, Harris Dry Cleaners, Peter Pan Cleaners, and Singer Friden.

Columbia Solar Energy Project, Soil Management Plan Implementation, 2014-2015: Responsible for managing the field team implementing the EC monitoring for construction activities to document compliance with the SMP, DCP, and HSP and to document the effectiveness of the Site dust control measures. AECOM completed EC monitoring in accordance with the DTSC-approved SMP, DCP, and HSP. As part of the EC Monitoring, AECOM field staff conducted Monitoring of earthmoving activities for the presence of impacted soil; Documented Site activities in weekly field reports; Conducted air monitoring for benzene and VOCs; Oversight of air monitoring for lead, arsenic, and respirable dust being conducted by subconsultant; Provided oversight and direction of soil excavations; Collected and analyzed excavation confirmation samples; Directed excavation step-outs based on the analytical results; Managed the removal, confirmation sampling and analysis, and stockpiling of contaminated soil; Coordinated the removal of buried drums encountered during grading activities; Managed profile sampling, chemical analysis, waste profiling, transportation coordination, and off-Site disposal of contaminated soil, RCRA and California hazardous waste, and buried drums encountered during excavations; and Observed and documenting the separation of debris pile constituents and their appropriate recycling, on-Site reuse, or off-Site disposal.

Lead Remediation Geologist, SFPUC Pacific Rod and Gun Club Remedial Design Bid Package: 2014 – 2015. Responsible for working with lead civil designer to develop the remedial drawings for the bid package for the Pacific Rod and Gun Club remediation project. Worked to develop remedial excavation approach, staging, and stockpile management for excavation of approximately 43,000 cubic yards of soil. Also participated in the preparation of construction control measure plans including a Dust Control Plan, Transportation Plan, Material Management & Disposal Plan, and a Storm Water Pollution Prevention Plan.

Principal-in-Charge, Site Investigation and Remediation Oversight of the Former Flint Ink Manufacturing Plant, Berkeley, CA, City of Berkeley, 1999 – 2007: URS was responsible for construction oversight throughout the site remediation. Kept daily logs of all construction activity; tracked volumes of soil and groundwater removed; confirmed sampling; and the compared results to the site cleanup criteria. Soil in the targeted areas was excavated to the depth of groundwater. In areas where contaminants were in the shallow fill, the removal of the fill material and underlying impacted natural soil did not expose the groundwater surface. At completion of the remedial activities, approximately 19,744 tons of soil and concrete had been excavated and disposed of off site, 377,000 gallons of contaminated water was removed during dewatering activities, six underground storage tanks were excavated and removed, and two large underground storage tanks were abandoned. URS documented the activities for each site in Corrective Action Completion Reports and submitted them to the City of Berkeley.

Task Manager and Lead Geologist, Pascagoula Refinery, Pascagoula, MS, Chevron, 1999: Update of the geologic site model for inclusion in the RFI for the refinery. Data from all previous site investigations and current RFI investigations were combined to develop the updated geologic site model.

Senior Geologist, George's River Pipeline Project, Sydney, New South Wales, Australian Gas and Light Company, 1997: Conducted a geologic investigation for the siting and installation of a natural gas pipeline beneath the George's River in Sydney, New South Wales. The study was conducted to determine if any of the structural features present in the rock formation would inhibit the use of directional drilling techniques.

15. Joe Stewart

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Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF JOE STEWART REGARDING PALEONTOLOGICAL RESOURCES

I, Joe Stewart, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a PhD in Systematics and Ecology from the University of Kansas in 1984. I have over 13 years of experience regarding the evaluation of paleontological resources. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1014: Application for Certification Section 4.8, Paleontological Resources (CEC TN #204219-15);
- Applicant's Exhibit No. 1035: Application for Certification, Appendix I, Paleontological Resources Technical Report (CEC TN #204220-9);

- Applicant's Exhibit No. 1037: Application for Certification, Appendix I, Paleontological Resources Technical Report, CONFIDENTIAL FILING (CEC TN #205352);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement, Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.8) (CEC TN #206698);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683); and
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.8) (CEC TN #213802).

I hereby sponsor this declaration (Applicant's Exhibit No. 1111) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following document:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 2, Section 5.2, Geology and Paleontology (portions pertaining to paleontology) (CEC TN #214713).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Scope of Analysis.* The analysis of potential impacts to paleontological resources seeks to identify resources that could be adversely affected, evaluate the potential for Project demolition/construction and operation to significantly impact the

resources, and provide mitigation measures as necessary to reduce any potential impacts below a level of significance.

b. *Results of Analysis.* While Project-related ground disturbance has some potential to adversely impact paleontological resources, near surface and at depth soils underlying the Project site are unlikely to contain fossils. Implementation of the Conditions of Certification proposed in the CEC FSA would ensure that any significant fossils uncovered during Project-related excavations would be preserved.

c. *Cumulative Impacts:* Potential adverse cumulative impacts to potential paleontological resources from the Project, if any, are less than significant.

d. *Mitigation/Conditions of Certification.* I concur with the proposed Conditions of Certification pertaining to paleontological resources contained in CEC FSA, Part 2, Section 5.2, Geology and Paleontology.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that, with implementation of proposed Conditions of Certification PAL-1 through PAL-8 contained in the Final Staff Assessment (CEC TN #214713), the Project, as proposed, will not result in any significant direct, indirect or cumulative impacts with respect to paleontological resources and will comply with all applicable laws, ordinances, regulations and standards pertaining to paleontological resources.

Executed on January 17, 2017, at Pasadena, CA

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

Joe Stewart

ATTACHMENT A

AECOM

Joe D. Stewart, PhD
Principal Paleontologist

Areas of Expertise

NEPA and CEQA Compliance
Project Management
Principal Investigator
Paleontological Management and Treatment

Education

MA, Systematics & Ecology, University of Kansas, 1979
PhD, Systematics & Ecology, University of Kansas, 1984

Years of Experience

With AECOM: 9
With Other Firms: 4

Registration/Certifications

Certified Paleontologist, Orange and Riverside counties, California
Research Associate, Natural History Museum of Los Angeles County
Hazardous Waste Operations and Emergency Response 40 Hr. General Site Worker

Professional Societies/Affiliates

Society of Vertebrate Paleontology

Joe Stewart is a vertebrate paleontologist with over 40 years of experience in paleontology and 30 years of experience in the geology and paleontology of California, particularly in Merced, Fresno, Kern, Santa Barbara, Los Angeles, Orange, San Bernardino, Riverside, Imperial, and San Diego counties. Joe has been involved in the permitting or construction of more than ten power plants, and has directed the paleontological monitoring and mitigation program for Path 15, a major transmission line project. He is also a certified paleontologist for the Counties of Orange and Riverside. His publications include 40 peer-reviewed articles in books and journals. His research specialties are fossil fishes and Pleistocene vertebrate faunas.

Experience

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Paleontological Resources section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying paleontological resources in the study area, determining the applicable laws, ordnances, regulations, and standards governing paleontological resources, and evaluating the potential impacts and mitigation measures to be implemented during construction activities.

BrightSource Rio Mesa Solar Project. Supervised paleontological survey on BLM and private lands. Wrote the Paleontological Resources section for the AFC.

Pio Pico Energy Center. Supervised paleontological survey and wrote the Paleontological Resources section for the AFC.

San Joaquin One and Two Application for Certification. Directed paleontological pedestrian survey of project area in Fresno County and wrote the paleontological resource section of the AFC.

Willow Pass Generating Station Application for Certification. Participated in paleontological pedestrian survey of project area in Contra Costa County and wrote the paleontological resource section of the AFC.

Marsh Landing Generating Station Application for Certification. Participated in paleontological pedestrian survey of project area in Contra Costa County and wrote the paleontological resource section of the AFC. Am serving as Paleontological Resource Specialist for construction.

Calico Solar Application for Certification. Participated in paleontological pedestrian survey of project area, edited the paleontology section of the AFC, and am serving as Paleontological Resource Specialist.

Carrizo Energy Solar Farm (Ausra) Application for Certification. Participated in paleontological pedestrian survey of project area and edited the paleontology section of the AFC.

Starwood Power-Midway, LLC Peaking Project Application for Certification. Participated in the responses to the CEC Provisional Staff Assessments.

IID Niland Gas Turbine Plant Phase III project construction. Served as Paleontological Resource Specialist Oversaw the work of the paleontological resource monitors, made numerous site visits, and will write final report on paleontological resources.

Starwood Power-Midway, LLC Peaking Project Construction. Wrote mitigation plan for paleontological resources, oversaw monitoring for paleontological resources, and wrote final report.

Recurrent Energy Crimson Project. Supervised paleontological survey and wrote preliminary findings report.

SR-91 Corridor Improvement Project. Wrote Paleontological Mitigation Plan and supervised paleontological monitoring and mitigation of construction activities.

Devore I-15/I-215 Interchange Improvement Project. Supervised paleontological monitoring and mitigation.

BrightSource Sonoran West Solar Project. Supervised paleontological survey on BLM and private lands and wrote final report.

Mesquite Nevada Replacement General Aviation Airport.. Wrote the paleontological Resource Assessment for the Federal Aviation Administration.

I-805 Managed Lanes South Project. Directed paleontological survey of 11.4-mile long project area in San Diego, National City, and Chula Vista and wrote the Paleontological Resource Assessment for SANDAG.

I-805 North Corridor Project. Directed paleontological survey of 4.4-mile long project area in San Diego and wrote the Paleontological Resource Assessment for SANDAG.

Calnev Pipeline Project. Directed paleontological survey of 234-mile long project area in San Bernardino County, California and Clark County, Nevada and wrote the paleontological assessment.

Imperial Valley Solar Application for Certification. Directed paleontological pedestrian survey of project area in San Bernardino County and wrote the paleontological resource section of the AFC.

BNSF Cajon Main Third Track Summit to Keenbrook permitting. Participated in the writing, editing, and production of the Paleontologic Resources Monitoring and Mitigation Plan and the Paleontological Resource Assessment.

Path 15 500-kV Power Transmission Line between Los Banos and Gates substations. Supervised paleontological resource monitoring, excavations, specimen preparation, specimen identification, and report writing for 80-mile power line.

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16. Mark Storm

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Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF MARK STORM REGARDING NOISE AND VIBRATION

I, Mark Storm, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor of Science in Aeronautics & Astronautics from the Massachusetts Institute of Technology in 1991. I have over 20 years of experience regarding the evaluation of noise associated with the construction and operation of industrial facilities and the impacts thereof. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1013: Application for Certification Section 4.7, Noise and Vibration (CEC TN #204219-14);
- Applicant's Exhibit No. 1034: Application for Certification, Appendix H, Noise and Vibration (CEC TN #204220-8);

- Applicant's Exhibit No. 1064: Project Enhancement and Refinement - Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.7) (CEC TN #206698);
- Applicant's Exhibit No. 1086: Response to Recommended Specific Provisions in August 26, 2016 Proposed Report (CEC TN #213624);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683); and
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.7) (CEC TN #213802).

I hereby sponsor this declaration (Applicant's Exhibit No. 1110) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.8, Noise and Vibration (CEC TN #214712); and
- CEC FSA, Part 1, Section 4.8, Noise and Vibration, Noise Appendix A, Fundamental Concepts of Community Noise (CEC TN #214712).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness, I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Construction Noise* – Construction of the Project is expected to be similar to other power plants in terms of schedule, equipment used, and related activities. The overall noise level will vary during the construction period, depending upon the phasing and

concurrence of different construction activities and their general locations within the Project area. The fourth month of the construction schedule is predicted to be the loudest, which reflects a time period characterized as having the most intense onsite construction and demolition activity levels, inclusion of the loudest equipment and vehicles, or a combination of these factors. Conditions of Certification NOISE-1 and NOISE-2 would establish a public notification and noise complaint process to resolve any complaints regarding construction and demolition noise. In addition to restricting construction and demolition hours, NOISE-6 requires the demolition and construction work to be performed in a manner to ensure the potential for noise complaints is reduced as much as practicable. When demolishing Mandalay Generating Station (MGS) Units 1 and 2, the exhaust-air stack and each turbine would be draped with an outdoor construction blanket to limit noise impacts.

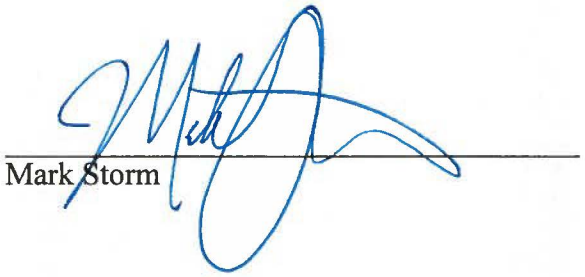
b. *Operational Noise*. Upon completion of construction and commissioning, the Project would generate noise as a result of normal operations. At times, the Project may operate concurrently with the MGS Unit 3 (which will remain in place after MGS Units 1 and 2 have been retired). Therefore, the modeling and analysis of noise effects considered the potential for MGS Unit 3 to be online at the same time as the Project. The predicted results indicate that the Project would not exceed any applicable noise or vibration standards and would not produce any significant direct, indirect, or cumulative adverse noise impacts.

c. *Mitigation/Conditions of Certification.* I concur with the proposed Conditions of Certification pertaining to noise and vibration contained in CEC FSA Part 1, Section 4.8, Noise and Vibration.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that, with implementation of proposed Conditions of Certification NOISE-1 through NOISE-7 contained in the Final Staff Assessment (CEC TN #214712), the Project will not result in any significant direct, indirect or cumulative impacts with respect to noise and will comply with all applicable laws, ordinances, regulations and standards pertaining to noise.

Executed on January 17, 2017, at SAN DIEGO, CA.

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



Mark Storm

ATTACHMENT A

Mark Storm
Principal Engineer, Acoustics and Noise Control

Education

BS, Aeronautics & Astronautics, Massachusetts Institute of Technology, 1991

Licenses/Registrations

INCE Board Certified, 08004

Years of Experience

With AECOM: 10

With Other Firms: 15

Professional Associations

Institute of Noise Control Engineering (INCE-USA) Board of Directors (2015-2017)

Mr. Storm's career in environmental noise assessment, mechanical systems noise control and architectural acoustics spans over 24 years, in various roles with established equipment manufacturers, consulting firms, and startup ventures that include laboratory management, research and development management, product design and systems engineering and costing. His practiced technical specialties can be categorized as follows:

Environmental Noise

Evaluation of noise impacts from residential, manufacturing, industrial, power generation and commercial facilities upon sensitive human and wildlife receptors. Services in this area include measurement and prediction programs, mitigation recommendations, participation in public meetings, and expert witness testimony.

Mechanical Noise and Vibration Analysis and Control

Analysis of multiple noise and vibration sources in order to devise and recommend options for feasible and reasonable means of noise control, sound path attenuation and vibration isolation. Services include noise and vibration measurement surveys, detailed model analysis and design recommendations.

Experience

Alternative Energy – Wind

U.S. Bureau of Land Management, Mohave County Wind Project, White Hills, AZ, 2009-2012: Noise Task Leader. BLM EIR/EIS support includes site surveys, noise models, impact assessments and mitigation recommendations. Proposed 500-megawatt project involves wind turbine generators (WTGs) near Lake Mead National Recreation Area (LMNRA).

Whistling Ridge Energy Project, Skamania County, WA, 2008-2011: Noise Task Leader. EIR/EIS support includes site surveys, noise models, impact assessments, mitigation recommendations and expert witness testimony. Proposed project is a 125-megawatt wind energy facility.

U.S. Bureau of Land Management, China Mountain Wind Power Project, Twin Falls County, ID, 2009-2012: Noise Task Leader. BLM EIR/EIS support includes site surveys, noise models, impact assessments and mitigation recommendations. Proposed project of 185 2.3-megawatt WTG atop the Idaho-Nevada border adjoining Elko County, NV.

Duke Energy, Searchlight Wind Energy Project, Clark County, NV, 2009-2010: Noise Task Leader. EIR/EIS support included construction and operation noise models, impact assessments and mitigation recommendations. Proposed 370-megawatt project involves 161 2.3-megawatt WTG.

Fossil-fueled Power

NRG Oxnard Energy Center LLC, Puente Power Project Application for Certification, Ventura County, CA, 2014-2017: Technical Lead. Managed the data collection and preparation of the Noise & Vibration section of the California Energy Commission (CEC) Application for Certification (AFC) for the proposed 262-megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included directing baseline outdoor sound level surveys and predictive noise analyses (involving construction and operation) to evaluate potential impacts and mitigation measures associated with the proposed project.

AES Panama, Costa Norte Power Project, Panama, 2015-2016: Noise Task Leader. Prepared report that included predictive noise analyses for combined-cycle power generation units for a variety of meteorological scenarios.

Capital Power, Maricopa County, AZ, 2014-2016: Noise Task Leader. Provided predictive noise analysis of a gas-fired turbine facility and a reciprocating engine-based alternative as part of client siting studies.

Arizona Public Service, Ocotillo Modernization Project, 2013-2014: Noise Task Leader. Conducted sound measurement survey and predictive analysis to evaluate start-up and steady-state noise emission from multiple operation scenarios of existing and future steam turbine and gas combustion turbine generators. Supported preparation of Arizona Corporation Commission (ACC) Certificate of Environmental Compatibility Exhibit I.

Chevron Energy Technology Company, Agura Independent Power Project, Lagos, Nigeria, 2012-2013: Noise Task Leader. Provided predictive noise analyses and pre-construction ambient sound environment assessment guidance to meet World Bank Group (WBG) impact evaluation guidelines for a 716-megawatt total capacity set of simple-cycle gas turbines.

Starwood Energy Group, Midway Peaking Project, Fresno, CA, 2009: Noise Task Leader. Conducted post-construction noise measurement and analysis of peaker plant operations to demonstrate compliance with CEC conditions. Project has pair of 60-megawatt gas turbines near Fresno, CA.

Imperial Irrigation District, Niland Gas Turbine Plant, Niland, CA, 2008: Noise Task Leader. Conducted post-construction noise measurement and analysis of peaker plant operations to demonstrate compliance with CEC conditions. The 94-megawatt project has a pair of simple-cycle gas turbines.

Alternative Energy – Solar (CSP)

BrightSource Energy, Rio Mesa Solar Electric Generating Facility, Riverside County, CA, 2011-2012: Noise Task Leader. Support for CEC AFC includes site surveys, operation and construction noise models, impact assessment and mitigation recommendations. Proposed project is a 750-megawatt concentrated solar power (CSP) plant.

BrightSource Energy, Sonoran West Solar Electric Generating System, Riverside County, CA, 2012: Noise Task Leader. Support for CEC AFC includes site surveys, operation and construction noise models, impact

assessment and mitigation recommendations. Proposed project is a 540-megawatt CSP plant.

Solar Reserve, Quartzsite Solar, La Paz County, AZ, 2010: Noise Task Leader. ACC Certificate of Environmental Compatibility support includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 240-megawatt CSP plant.

Starwood Energy Group, Starwood Solar I, Maricopa County, AZ, 2009: Noise Task Leader. Support for ACC Certificate of Environmental Compatibility, includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 290-megawatt CSP plant.

Ausra, Carrizo Energy Solar Farm, San Luis Obispo County, CA, 2007-2009: Noise Task Leader. Support for CEC AFC includes site surveys, noise models, analysis, impact assessment, mitigation recommendations and expert witness testimony. Proposed project is a 150-megawatt CSP plant.

Ausra, Solstice, Yuma, AZ, 2008-2009: Noise Task Leader. Support for ACC Certificate of Environmental Compatibility includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 240-megawatt CSP plant.

Tessera Solar / Stirling Energy Systems, Imperial Valley Solar, Imperial County, CA, 2008-2009: Noise Task Leader. CEC AFC support includes site surveys, noise models, impact assessment, mitigation recommendations and expert witness testimony. Proposed project is a 600-megawatt CSP plant.

Tessera Solar / Stirling Energy Systems, Calico Solar, San Bernardino County, CA, 2008-2009: Noise Task Leader. Support for CEC AFC includes site surveys, noise models, impact assessment, mitigation recommendations and expert witness testimony.

Spinnaker Energy, Inc., San Joaquin Solar 1 & 2, Coalinga, CA, 2008-2009: Noise Task Leader. CEC AFC support includes site surveys, noise models, impact assessment and mitigation recommendations. Proposed project is a 106-megawatt solar/biomass hybrid CSP plant.

Mt. Signal Solar, Southwestern Power Group II, LLC, Imperial County, CA, 2008: Noise Task Leader. EIR/EIS support includes site surveys, noise models, impact assessments and mitigation recommendations. Proposed project is a 49-megawatt solar/biomass hybrid CSP plant.

Alternative Energy – Solar (PV)

First Solar Development, Desert Quartzite Solar Project, Riverside County, CA, 2015: Noise Task Leader. EIR/EIS support includes standalone technical report generation that includes baseline noise measurement, noise models, impact assessments and mitigation recommendations. Proposed project is a 300-megawatt photo-voltaic (PV) power plant.

Agile Energy, Turning Point Solar, Noble County, OH, 2011: Noise Task Leader. EIR/EIS support includes site surveys, noise models, impact

assessments and mitigation recommendations. Proposed project is a 49-megawatt PV power plant.

Other

Southern California Edison, Santa Barbara Emergency Generator Project, Santa Barbara County, CA, 2016: Noise Task Leader. Directed baseline noise field surveys, onsite noise monitoring of emergency generator at three SCE substation sites; provided predictive operation noise analysis and mitigation guidance at two of the studied sites.

Southern California Edison, Riverside Transmission Reliability Project, Riverside County, CA, 2016: Noise Task Leader. Directed baseline noise field surveys, corona audible noise studies and preparation of report to update the project's aging EIR noise section and respond to California Public Utility Commission (CPUC) comments.

Rancho Valencia Resort & Spa, Rancho Santa Fe, CA, 2012-2016: Noise Task Leader. Directed sound level monitoring surveys for compliance with local ordinance, and led predictive analyses of acoustical upgrades to reduce outdoor sound propagation from live music performance at multiple resort venues. Served as percipient witness at deposition and trial, led to successful legal defense of client vs. plaintiff's injunction attempt.

City of San Diego, Qualcomm Stadium Replacement EIR, San Diego, CA, 2015: Noise Specialist. Directed predictive noise models for multiple hosted events (concert, motorsports, football) to assess potential impacts to community due to proposed relocation of traditional San Diego Chargers stadium.

County of Santa Barbara, Tajiguas Resource Recovery Project, Goleta, CA, 2013: Noise Task Leader. Predicted noise emission and potential environmental impacts of various materials recycling facility alternatives.

City of San Diego, 32nd & Broadway Test Well, San Diego, CA, 2012-2013: Noise Task Leader. Directed completion of multi-month site sound monitoring surveys, predictive drilling rig noise models, impact assessments and mitigation recommendations.

Sample Publications

U.S. Patent No. 7,581,619 – Movable Baffle Columns for Use with Air Handling Units.

U.S. Patent No. 6,571,910 – Method and Apparatus for Improved Noise Attenuation in a Dissipative Internal Combustion Engine Exhaust Muffler.

"Expectations of New FERC Guidance on Resource Report 9 (Noise Quality) Preparation," Proceedings of NoiseCon 2016, Providence, RI.

"Potential effects on soundscape from hydroelectric power", Proceedings of NoiseCon 2013, Denver, CO.

"Thinking Outside (or Inside) the Box: Sustainability Considerations with Respect to Location of Sound Traps for Controlling Air Handling Unit Noise", Proceedings of InterNoise-2012, New York City.

“Viability of a Dissipative Diesel Engine Exhaust Muffler Featuring Sintered Metal Fiber”, Proceedings of NoiseCon 2011, Portland, OR.

“The Sounds of Solar Power Generation”, Proceedings of NoiseCon 2011, Portland, OR.

“Plenum Fan Array Analysis”, Proceedings of NoiseCon 2011, Portland, OR.

“Potential Noise Reduction from Mast Trailing Vanes as Downwind-Design Wind Turbine Retrofits”, Proceedings of NoiseCon 2010, Baltimore, MD.

“Optimal Silencer Baffle Positioning within an Air Handling Unit”, Proceedings of NoiseCon 2010, Baltimore, MD.

“Dissipative diesel engine exhaust muffler featuring sintered metal fiber as acoustical fill liner”, Proceedings of NoiseCon 2010, Baltimore, MD.

“Apparent Trends in Wind Turbine Generator Noise Criteria and Regulation Guidance”, 10935, Proceedings of InterNoise-2009, Ottawa.

“Prediction of Sintered Fibrous Metal Liner Influence on Muffler Sound Attenuation Performance and Noise Emission for Single-Cylinder Motorcycle Engine Exhaust”, NCAD2008-73022, Proceedings of NCAD2008, NoiseCon2008-ASME NCAD, Dearborn, MI

17. Tricia Winterbauer

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State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF TRICIA WINTERBAUER REGARDING HAZARDOUS MATERIALS AND WASTE MANAGEMENT

I, Tricia Winterbauer, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project) and am duly authorized to make this declaration.

2. I earned a Bachelor of Arts in Environmental Studies from University of California, Santa Barbara in 1992. I have over 20 years of experience regarding the evaluation of transportation, storage, use and disposal of hazardous materials and industrial wastes and the potential environmental impacts thereof. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1011: Application for Certification (AFC) Section 4.5, Hazardous Materials (CEC TN #204219-12);

- Applicant's Exhibit No. 1020: AFC Section 4.14, Waste Management (CEC TN #204219-21);
- Applicant's Exhibit No. 1032: AFC, Appendix F OCA Aloha Output (CEC TN #204220-6);
- Applicant's Exhibit No. 1041: Application for Certification, Appendix M Waste Management (CEC TN #204220-13);
- Applicant's Exhibit No. 1043: Responses to CEC Data Requests Set 1 (DR 16, 31, 34, 35, 36, and 42 – 45) (CEC TN #205765);
- Applicants' Exhibit No. 1062: Responses to CEC Data Requests Set 2 (DR 74) (CEC TN #206614);
- Applicant's Exhibit No. 1063: Mandalay Generating Station, Phase II Environmental Site Assessment, June 1997 (Appendix 74-1 to Applicant's Responses to CEC Data Requests Set 2 (DR 74) (CEC TN #206621);
- Applicant's Exhibit No. 1064: Project Enhancement and Refinement- Demolition of Mandalay Generating Station Units 1 and 2 (Section 4.7) (CEC TN #206698);
- Applicant's Exhibit No. 1089: Applicant's Comments on the Preliminary Staff Assessment (CEC TN #213683);
- Applicant's Exhibit No. 1090: Puente Power Project (P3), Project Enhancement – Outfall Removal and Beach Restoration (Section 3.7) (CEC TN #213802); and
- Applicant's Exhibit No. 1094: Applicant's Responses to CEC Data Requests, Set 4 (77-107) (DR 96) (CEC TN #214336).

I hereby sponsor this declaration (Applicant's Exhibit No. 1108) and the other above-referenced Applicant's Exhibits into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following documents:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 1, Section 4.6, Hazardous Materials Management (CEC TN #214712);

- CEC FSA, Part 1, Section 4.6, Hazardous Materials Management, Appendix B, Hazardous Materials Proposed for Use at Puente (CEC TN #214712); and
- CEC FSA, Part 2, Section 5.6, Waste Management (CEC TN #214713).

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibits identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibits identified herein are true and correct articulations of my opinions. If called as a witness I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibits identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Hazardous Materials Used.* The Project would use hazardous materials during both the construction and operation. Aqueous ammonia (19%) would be used to control the emission of oxides of nitrogen from the combustion of natural gas. The Project would store 12,450 gallons of NH3 in one 14,650-gallon above-ground storage tank. Due to the hazardous nature of the aqueous ammonia, modeling was completed by the applicant and assessed by staff to evaluate the worst-case impact from an accidental release of aqueous ammonia in an off-site consequence analysis (OCA). Modeling results for the OCA indicate that a potential worst-case spill of aqueous ammonia would not pose a significant risk to off-site members of the public.

b. *Applicable Regulatory Programs for Hazardous Materials.* The Project is required to develop a Risk Management Plan, conduct a Process Hazard Analysis, and conduct a Seismic Analysis of the facilities, operations, and equipment in accordance with applicable regulations, including California's Accidental Release Program (CalARP) regulations. Enforcement of the CalARP will be by the City of Oxnard Fire Department.

c. *Waste Management – Construction.* The Project will generate wastes typical for the construction of natural-gas–fueled combustion power plants.

Nonhazardous waste generated during construction at the project Site is not expected to significantly impact already-available landfill capacity because landfills in the area have sufficient remaining capacity. Hazardous wastes generated during construction will be managed in accordance with applicable laws.

d. *Waste Management – Operations.* All non-hazardous waste would be recycled to the extent feasible, and nonrecyclable wastes would be collected by a licensed hauler and disposed of at a permitted solid waste disposal facility. Hazardous wastes would be accumulated on site in accordance with accumulation time limits and then properly manifested, transported to, and disposed of at a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies.

e. *Mitigation/Conditions of Certification.* I concur with the Proposed Conditions of Certification pertaining to hazardous materials and waste management contained in CEC FSA Part 1, Section 4.6, Hazardous Materials Management and CEC FSA, Part 2, Section 5.6, Waste Management, respectively.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification HAZ-1 through HAZ-9 and WASTE-1 through WASTE-9 contained in the Final Staff Assessment (CEC TN #214712 and #214713), the Project, as proposed, will not result in any significant direct, indirect or cumulative environmental impacts with respect to hazardous materials or waste management and will comply with all applicable laws, ordinances, regulations and standards pertaining to hazardous materials and waste management.

Executed on January 17, 2017, at Santa Barbara, California.

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

Tricia Winterbauer

Tricia Winterbauer

ATTACHMENT A

AECOM

Tricia Winterbauer
Senior Environmental Specialist

Education

BA/Environmental Studies/1992/ University of California, Santa Barbara
Certificate of Hazardous Material Management/1994/University of California, Berkeley

Years of Experience

With AECOM: 20 years

Ms. Winterbauer has 20 years of experience in multi-site Phase I and Phase II Environmental Assessments, environmental regulatory compliance and permitting projects, hazardous waste soil and groundwater investigations, energy development projects, and occupational health and safety projects.

Experience

Energy Development Projects

Ms. Winterbauer has conducted permitting of power generating facilities through the California Energy Commission's Application for Certification (AFC) and CEQA permitting processes for new power generation facilities. She has also assisted existing power generation facilities with the development of environmental and health and safety compliance plans and documentation.

Technical Lead, Puente Power Project Application for Certification, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Waste Handling section of the Application for Certification (CEQA-equivalent document) for the proposed 262 megawatt natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying and quantifying potential waste streams associated with the construction and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing waste generated at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction and management activities.

Task Leader, Sentinel Energy Project. Hazardous materials, hazardous waste, and worker safety AFC compliance. Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, and the operations Health and Safety Program for the facility for 2013–2014.

Task Leader, Pio Pico Energy Center. Hazardous materials, hazardous waste, and worker safety for the AFC of a 200 MW natural gas-fired power plant located in Otay Mesa. The AFC was submitted in February, 2011.

Task Leader, Agincourt and Marathon Solar Projects CEQA Analysis and Permitting, Mojave Desert. Hazardous materials and public safety for the CUP applications and Mitigated Negative Declarations for two 10-20 MW solar PV facilities in San Bernardino County, California.

Task Leader, Watson Cogeneration Steam and Electric Reliability Project. Hazardous materials, hazardous waste, and worker safety for the AFC of an 85 MW natural gas generating facility in the City of Carson. The AFC was submitted in March 2009.

Task Leader, Starwood Power-Midway Peaking Power Plant. Hazardous materials, hazardous waste, and worker safety AFC compliance. Developed

Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, and the operations Health and Safety Program for the facility in 2009.

Task Leader, Calico Solar Project (Solar One Generating Facility). Hazardous materials, hazardous waste, and worker safety for the AFC of an 850 MW solar power generating facility in San Bernardino County. The AFC was submitted to the CEC in December, 2008.

Task Leader, San Joaquin Solar 1&2 Hybrid Solar Thermal Generating Facility. Hazardous materials, hazardous waste, and worker safety for the AFC of a 106.8 MW solar power generating facility in Fresno County. The AFC was submitted to the CEC in November, 2008.

Task Leader, Hydrogen Energy California Integrated Gasification Combined Cycle (IGCC) Power Generating Facility. Hazardous materials, hazardous waste, and worker safety for the AFC of a 390 MW gasification energy facility in Kern County. The AFC was submitted to the CEC in July 2008.

Task Leader, Imperial Valley Solar (Solar Two Generating Facility). Hazardous materials, hazardous waste, and worker safety for the AFC of a 750 MW solar power generating facility in Imperial County. The AFC was submitted to the CEC in June, 2008

Task Leader, Anaheim Municipal Power Station. Hazardous materials, hazardous waste, and worker safety for the AFC of a 200 MW energy facility in Anaheim, Orange County. The AFC was submitted to the CEC in 2008.

Task Leader, Canyon Power Project. Hazardous materials, hazardous waste, and worker safety for the AFC of a 200 MW peaking plant within the City of Anaheim. The AFC was submitted in December 2007.

Task Leader, Carrizo Solar Power Generating Facility Project. Hazardous materials, hazardous waste, and worker safety for the AFC of a 177 MW solar power generating facility in San Luis Obispo County. The AFC was submitted in October, 2007.

Task Leader, Larkspur 3 Energy Facility Project. Hazardous Materials, hazardous waste, and worker safety for the AFC Amendment for the facility located in San Diego. The AFC Amendment was submitted to the CEC in May, 2007.

Task Leader, Panoche Energy Center. Hazardous materials, hazardous waste, and worker safety for the AFC of a 400 MW energy facility in Fresno County. The AFC was submitted to the CEC in August, 2006.

Task Leader, Bullard Energy Center. Hazardous materials, hazardous waste, and worker safety for the AFC of a 200 MW peaking energy facility within Fresno County. The AFC was submitted to the CEC November, 2006.

Task Leader, Magnolia Power Project. Hazardous materials, hazardous waste, and worker safety for the AFC of a 250 MW energy facility within the City of Burbank. The AFC was filed in and the project was licensed in 2003. Assisted in the management of condition compliance activities from 2003 to 2005. Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, Stormwater Pollution Prevention

Plans, A Health & Safety Program and a Risk Management Plan for the facility.

Agua Mansa Power Project. Assisted in the preparation and processing of an application to develop a 49 MW power facility in Colton, California. Project was constructed in 2003. Assisted in environmental compliance activities from 2003 to 2004. Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, a Spill Prevention Countermeasures and Contingency Plan, the operations Health and Safety Program, and a Risk Management Plan for the facility.

Duke Energy Moapa Power Project. Assisted Duke Energy of North America in environmental permitting and construction compliance activities for a power plant project in Clark County, Nevada from 2000 to 2002. Prepared and submitted compliance documents to various local, state and federal agencies. Prepared a permit matrix to track the completion of each of the permits required prior to construction, during construction, and prior to operations. Also assisted with NEPA compliance and coordination with the Bureau of Land Management for the power plant and project linears.

NEPA/CEQA

Ms. Winterbauer has conducted Environmental Impact Reports (EIR), Environmental Impact Statements (EIS) and Environmental Assessments (EA) through the NEPA/CEQA process.

Task Leader, Vandenberg Air Force Base Final Environmental Assessment, East Housing Area Solar Energy Project. Public Health and Safety section for the EA. The EA was submitted in 2014.

Task Leader, Tajiguas Landfill Resource Recovery Project Risk of Upset, Fire Hazard, and Health and Safety Technical Study. Technical study used as the basis for the Project EIR. 2013–2014.

Task Leader, Hollister Avenue Bridge Replacement Project Initial Study/Mitigated Negative Declaration, City of Goleta and Caltrans. Served as task leader for hazardous materials section and the Caltrans Initial Site Assessment for Draft Mitigated Negative Declaration in 2014.

Task Leader, Ekwill Street and Fowler Road Extensions Project Joint NEPA/CEQA Administrative Draft EIR/EA and CEQA-only EIR, City of Goleta and Caltrans. Hazardous Waste and Utilities section for the EA/EIR in Santa Barbara County. The EIR was submitted in 2011.

Task Leader, Los Carneros Road Overhead Bridge Replacement Project Mitigated Negative Declaration, City of Goleta and Caltrans. Hazardous materials section and the Caltrans Initial Site Assessment for Mitigated Negative Declaration. The MND was submitted in 2011.

Task Leader, NextLight AV Solar Ranch Environmental Impact Report. Environmental Safety and Fire Hazards sections for the EIR in Los Angeles County. The EIR was submitted 2009.

Task Leader, Camp Pendleton Hospital Replacement and Exchange Complex Environmental Assessments. Public Safety section for EAs in San Diego County. The EAs were submitted in 2009.

Task Leader, Port of San Diego, North Harbor Demolition Project Environmental Impact Report. Hazardous Materials and Waste and Utilities sections for the EIR in San Diego County. The EIR was approved in 2009.

Task Leader, (SCE) Tehachapi Renewable Transmission Project (TRTP), Proponent's Environmental Assessment Traversing Kern, Los Angeles, and San Bernardino Counties, and Included Portions of the Angeles National Forest and Mojave Desert, California. Hazardous materials section for Proponent's Environmental Assessment (PEA).

Task Leader, Big West Oil LLC, Clean Fuels Project (CFP) at the Bakersfield Refinery Environmental Impact Report. Served as task leader for the Public Safety Section. The EIR was submitted in 2007.

Task Leader, Newhall Land's Resource Management and Development Plan EIS/EIR, Santa Clarita Valley. Served as task leader for hazardous materials section of the EIS/EIR in Los Angeles County.

Phase I Environmental Site Assessments

Managed large portfolio due diligence projects for the development of solar power plants located throughout California, Nevada, Arizona, New Mexico, and Georgia.

Managed and participated in more than 500 Phase I Site Assessments of industrial and commercial facilities throughout California and the United States. Investigations have focused on the potential for soil and groundwater contamination resulting from past and present site use. Specific tasks have included proposal preparation, budget tracking, site reconnaissance, historical land use investigation, topographic map and aerial photo review, and review of regulatory agency records concerning site compliance issues. Additional tasks have included collection of drinking water samples for analysis of lead content, and visual inspections and characterization of possible asbestos containing materials.

Phase II Environmental Site Assessments

Performed groundwater and soil sampling, at hazardous waste sites throughout California. Responsibilities have included well purging, sample collection, measurement of field parameters, report preparation and recommendations for further sampling analysis.

Environmental Regulatory Compliance – Compliance/Project Management

Prepared regulatory compliance documents for Hazardous Materials, Hazardous Waste, Recycled Water Use and Spill Prevention for Shell Gaviota Marine Terminal Decommissioning Project. 2015-2016.

Prepared regulatory compliance documents for Prysmian Power Link Services Limited for the ExxonMobil Offshore Power System Reliability Project-B during 2013–2014.

Served as task leader for Hazardous Materials, Hazardous Waste, and Worker Safety AFC compliance for the Sentinel Energy Project. Developed Construction and Operations Hazardous Materials and Hazardous Waste

Management Plans for the facility 2013–2014.

Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, and the operations Health and Safety Program for the Starwood Power-Midway Peaking Power Plant facility in 2009.

Assisted in the management of condition compliance activities of the Magnolia Power Plant from 2003–2005. Developed construction and operations Hazardous Materials and Hazardous Waste Management Plans, Stormwater Pollution Prevention Plans, A Health and Safety Program and a Risk Management Plan for the facility.

Conducted environmental compliance activities from 2003–2004 for the Agua Mansa Power Project. Developed Construction and Operations Hazardous Materials and Hazardous Waste Management Plans, a Spill Prevention Countermeasures and Contingency Plan, the operations Health and Safety Program, and a Risk Management Plan for the facility.

Served as task leader for hazardous materials and hazardous waste for a (ECAMP) Audit at Vandenberg Air Force Base in 2003.

Prepared Risk Management Plan for Cal Poly University onsite Refrigeration Unit in 2003.

Conducted biannual regulatory compliance audits for the Stanford Linear Accelerator Facility, Menlo Park, California 1999–2003. The focus of the audits was to conduct documentation review to observe the storage and management of hazardous materials and hazardous waste, wastewater and stormwater.

Developed and updated regulatory compliance documentation and associated permitting including hazardous waste management manuals, hazardous materials management manuals, training programs, hazardous material business plans, biennial reports, risk management plans, storm water pollution prevention plans, and spill prevention control and countermeasure plans for numerous industrial facilities.

Completed numerous Environmental Compliance Audits for industrial, commercial, and medical facilities.

Environmental Regulatory Compliance – Occupational Health and Safety

Prepared health and Safety documents for Prysmian Power Link Services Limited for the ExxonMobil Offshore Power System Reliability Project-B during 2013–2014.

Served as task leader for Worker Safety AFC compliance for the Sentinel Energy Project. Developed the operations Health & Safety Program for the facility, 2013–2014.

Prepared Health and Safety Program for the Chevron Management Company Guadalupe Restoration Project, 2007.

Prepared an Occupational Health and Safety Program to comply with Cal-OSHA requirements for AES Southland 5 California AES power plants in 2004.

Provided weekly occupational health and safety compliance assistance for the Jet Center at Santa Barbara (GE Engine Corporation), 2000–2001. Activities included, weekly health and safety inspections, development of Hazard Communication Program, Injury Illness Prevention Program, Emergency Action/Fire Prevention Plan, Hearing Conservation Program, and an Asbestos Management Program.

Health and Safety Coordinator for the Chevron Richmond Refinery Waste Discharge Order Project from 1997–1999.

Conducted biannual occupational safety and health audits for the Stanford Linear Accelerator Facility, Menlo Park from 1999–2002, California to determine compliance with OSHA standards.

Conducted occupational health and safety audits for the numerous industrial and manufacturing facilities to determine compliance of the OSHA standards.

Developed safety programs for numerous industrial and manufacturing facilities.

18. Zenis Walley

Michael J. Carroll
LATHAM & WATKINS LLP
650 Town Center Drive, 20th Floor
Costa Mesa, California 92626-1925
Tel.: (714) 540-1235
michael.carroll@lw.com

Attorneys for Applicant

State of California

Energy Resources

Conservation and Development Commission

In the Matter of: Application for Certification for the PUENTE POWER PROJECT	Docket No. 15-AFC-01 EXPERT DECLARATION OF ZENIS WALLEY REGARDING WORKER SAFETY AND FIRE PROTECTION

I, Zenis Walley, declare as follows:

1. I am employed by AECOM, which has been retained by the Applicant to conduct certain analyses associated with the proposed Puente Power Project (Project), and am duly authorized to make this declaration.

2. I earned a Bachelor of Science Degree in Natural Resources Management, Environmental Sciences from California Polytechnic State University, San Luis Obispo in 1980, and hold certifications from both the National Safety Council and OSHA for completed training in the fields of General Industry and Construction Health & Safety. I have over 35 years of experience regarding the evaluation of worker safety and fire protection in the context of construction, commissioning, and operation of industrial facilities. A copy of my current curriculum vitae is attached to this declaration as Attachment A. Based on my education, training and experience, I am qualified to provide expert testimony as to the matters addressed herein.

3. I prepared or participated in preparing, and am knowledgeable of the

contents of, the following Applicant's Exhibits:

- Applicant's Exhibit No. 1022: Application for Certification Section 4.16, Worker Safety and Fire Protection (CEC TN #204219-23).

I hereby sponsor this declaration (Applicant's Exhibit No. 1117) the other above-referenced Applicant's Exhibit into evidence in these proceedings.

4. I have reviewed and am knowledgeable of the contents of the following document:

- California Energy Commission (CEC) Staff Final Staff Assessment (FSA), Part 2, Section 5.7, Worker Safety and Fire Protection (CEC TN #214713)

5. Except where stated on information and belief, the facts set forth herein and in the other Applicant's Exhibit identified herein are true of my own personal knowledge, and the opinions set forth herein and in the other Applicant's Exhibit identified herein are true and correct articulations of my opinions. If called as a witness I could and would testify competently to the facts and opinions set forth herein and in the other Applicant's Exhibit identified herein.

6. The following is a brief summary of my analysis of the Project as set forth in those portions of the Application for Certification I prepared, and additional materials I prepared in response to Project modifications and input from the other parties and the public.

a. *Overview of Analysis.* The analysis contained in the Applicant's Exhibits identified herein assessed the worker safety and fire protection measures that would be included in the Project to determine whether they were sufficient to protect workers during construction and operation of the Project, protect against fire, and provide for adequate emergency response.

b. *Summary of Conclusions.* I concluded the Project as proposed would incorporate sufficient measures to ensure adequate levels of worker safety, fire protection and emergency response.

c. *Mitigation Measures/Conditions of Certification.* I concur with the proposed Conditions of Certification contained in CEC FSA, Part 2, Section 5.7, Worker Safety

and Fire Protection.

7. Based on the information and analysis contained herein and in the other Applicant's Exhibits identified herein, it is my expert opinion that with implementation of proposed Conditions of Certification WORKER SAFETY-1 through WORKER SAFETY-8 contained in the Final Staff Assessment (CEC TN #214713), the Project, as proposed, will not result in any significant adverse impacts to worker safety or fire protection, and will comply with all applicable laws, ordinances, regulations and standards pertaining to worker safety or fire protection.

Executed on January 17 2017, at 0900 hrs, Oakland, CA.

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

Zenis Walley

ATTACHMENT A

AECOM

Zenis M. Walley
Environmental/EHS Compliance Manager

Professional History

Management of Regulatory Compliance / Environmental / Health and Safety

Education

BS / Natural Resource Management - Environmental Sciences / 1980 / California Polytechnic State University, San Luis Obispo

Cultural Studies / 2010 / Oxford University, Christ Church, UK

Years of Experience

With AECOM: 5

With Other Firms: 31

Professional Associations

Construction Management Association of America

Professional Member, American Society of Safety Engineers

National Association of Environmental Managers

Training and Certifications

Certified Utility Safety Administrator

Certified Safety Supervisor

(Refer to List)

Over 35 years of experience in the areas of project development, permitting, implementation, reporting, auditing, budgeting, and management pertaining to compliance with environmental, health and safety LORS.

Experience

Environmental – Regulatory compliance management of industrial facility construction, commissioning, and operation, air/water quality management (40 CFR 60, 75 and 144, Title V, CEMS, CGA/RATA, emissions stack testing, ERC, Acid Rain EDR, CA AB 32 GHG, Prop. 65, SWPPP [Construction & Industrial Facility], NPDES, UIC Well), hazardous materials/hazardous waste/universal waste management (RCRA, RMP, SPCC, ICS, HAZWOPER, SARA Title III, EPCRA, Business Plan/CUPA), Phase I and II ESA, compliance auditing/due diligence, environmental impact assessment (EIS, EIR, CEQA), wildlife habitat/biological resources (wetlands, riparian, oak woodland, scrub/grassland, beach dune, desert) assessment/monitoring/protection, habitat mitigation/restoration, cultural/paleontological resources monitoring/protection, site remediation, development/ implementation/ conducting regulatory compliance training, research, permit acquisition, team/project management, public speaking, report writing, contract management, mutually beneficial/positive interaction with local, state and federal agencies, and development/management of an Environmental Management System (EMS, ISO 14001). Compliance management for a North American Electric Reliability Corporation (NERC) Alert Program, and California Energy Commission (CEC) Conditions for Certification during pre-construction, construction, commissioning, and operation of electrical power generation plant and transmission line projects.

Health and Safety – Regulatory compliance management of industrial facility construction, commissioning, and operation (Cal OSHA Title 8, Fed OSHA 29.1910, IIPP, HAZCOMM, PSM, MSDS, LOTO, Confined Space Entry), chemical hygiene plan, industrial hygiene monitoring [noise, welding fume, chemical lab], hearing conservation program, ergonomics, project-specific/site safety plans, develop/implement/ conduct regulatory compliance training, Behavior-Based Safety, root cause analysis (RCA), and auditing.

Audit/Due Diligence – Comprehensive EHS audits of oil & gas production/processing facilities, and coal-fired/gas-fired electrical power generation plant and transmission facilities. Due diligence for equity interest owner or owner sale/purchase of electrical power generation plant/transmission facilities, and property transfers.

Project-Specific Experience

Puente Power Project Application for Certification, Technical Lead, NRG Oxnard Energy Center LLC. Managed the data collection and preparation of the Worker Safety and Fire Protection section of the Application for Certification (CEQA-equivalent document) for the proposed

262 megawatt (MW) natural gas-fired generation facility in Oxnard, California. Responsibilities included identifying health and safety plans and programs associated with the construction, commissioning, and operation of the power plant, determining the applicable laws, ordnances, regulations, and standards governing health and safety at the facility, and evaluating the potential impacts and mitigation measures to be implemented during construction, commissioning, and operational activities.

Contra Costa Generating Station, Environmental Compliance Manager, Oakley, CA. Responsible for management of EHS regulatory compliance, and SWPPP inspection/ compliance during construction and commissioning of the Oakley Generating Station Project 624 MW, gas-fired, combined-cycle, electrical power generation plant, switchyard, and 230 kV transmission line tie-in.

La Paloma Generating Company - PG&E National Energy Group, NAES, CEP Operating Company, LLC, DTE Energy Services, EHS Manager, McKittrick, CA. Responsible for management of EHS regulatory compliance during project construction, commissioning, and operation of the La Paloma Generating Company, LLC 1,048 MW, gas-fired combined-cycle, electrical power generation plant, switchyard, and 230 kV transmission line, development of a 33-MW solar project, and operation of the SeaWest 66 MW wind farm in San Gorgonio Pass, CA.

A/C Power–ACE Operations - Kerr-McGee Chemical Corporation, Constellation Energy, EHS Manager, Trona, CA. Responsible for management of EHS regulatory compliance during project construction, commissioning, CEC Demonstration phase, and operation of the ACE Cogeneration Company 118 MW, coal-fired CFB, electrical power generation plant, switchyard, and 230 kV transmission line tie-in.

ACEforward Project, San Joaquin Regional Rail Commission, Site Safety Officer. Responsible for Safe Work Plan, Field Safety Training, and Tailgate Safety Meetings during design and field work on the Altamont Corridor Express (ACE) railway service improvement project.

PG&E Company, PG&E Company, Pittsburg-Tesla Reconductoring Project, Environmental Compliance Supervisor. Responsible for development/implementation of the Environmental Compliance Management Program (ECMP) and environmental compliance training program, management of preconstruction surveys, environmental compliance inspections, biological/cultural resources monitoring, and compliance reporting during reconductoring work on a 31 mile (137 towers) electrical transmission circuit.

PG&E Company, North American Electric Reliability Corporation (NERC) Alert Program, Environmental Compliance Supervisor. Responsible for development/implementation of the Environmental Compliance Management Program (ECMP) and Worker Environmental Awareness Program (WEAP) Training Program, and management of environmental compliance inspection, monitoring, and reporting during maintenance work on the state-wide electrical transmission and distribution system.

Engle & Gray, Inc., Environmental Manager, and Santa Barbara County. Responsible for hazardous waste identification, environmental

audits, site assessments, and site remediation for various energy projects in northern Santa Barbara County, and Texaco's Gaviota Marine Terminal.

WESTEC Service, Inc., Project Manager/Senior Scientist, Santa Barbara County. Responsible for assessment and management of environmental matters related to energy development projects and manager of the Environmental Quality Assurance Program during construction of Exxon's Santa Ynez Unit/Las Flores Canyon oil and gas development project in Santa Barbara County. Developed and coordinated the fire protection training program at Texaco's Gaviota Marine Terminal.

Union Oil Company of California (Unocal), Coast Area Environmental Specialist and Landman, Santa Barbara County and San Luis Obispo County. Responsible for management of environmental and regulatory compliance at onshore oil and gas production operations in northern Santa Barbara County and southern San Luis Obispo County, and offshore in Federal waters. Landman responsibilities were for mineral rights title search and negotiation of oil and gas leases.

Awards

June 1994 - Resolution from the CEC recognizing and commending key environmental compliance role in the success of the ACE Project.

Publication

1998 - Management of Ash Waste from Coal-fired Power Plant; Air & Waste Management Assoc.; Hoylman, E.W./Hagen, R.A./Walley, Z.W.

Certifications

Certificate: CARB 401 Comprehensive CEMS
Certificate: CARB Fundamentals of Enforcement/VEE
Certificate: Class I UIC Well Operation
Certificate: Texas A&M Fire Boat Operations
Certificate: Behavioral Science Method for Accident Prevention
Certificate: OSHA 510 Construction Safety & Health
Certificate: OSHA 511 General Industry Safety & Health
Certificate: OSHA Compliance
Certificate: DOT 49 Hazardous Materials Shipping
Certificate: Federal Environmental Regulations
Certificate: Environmental, Health and Safety Law
Certificates: OSHA 29 HAZWOPER Operations Level/Tech Level
Certificates: Oil Spill Response Training
Certificates: Root Cause Failure Analysis Methods
Certificates: California Environmental Regulations
Certified Utility Safety Administrator, National Safety Council
Certified Safety Supervisor, National Safety Council

Chronology

6/2011-Present AECOM (formerly URS) – Contra Costa Generating Station and ACEforward Project
11/1999-6/2011 La Paloma Generating Company – PG&E National

Energy Group/NAES/CEP Operating Company, LLC/ DTE Energy Services

6/1989-11/1999 A/C Power-ACE Operations – Kerr McGee Chemical Corporation/Constellation Energy

11/1988-6/1989 Engle & Gray, Inc. (Texaco)

10/1987-11/1988 WESTEC Service, Inc. (Exxon & Texaco)

8/1980-10/1987 Union Oil Company of California (Unocal)