

## DOCKETED

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| <b>Docket Number:</b>   | 97-AFC-01C                                                      |
| <b>Project Title:</b>   | High Desert Power Plant (COMPLIANCE)                            |
| <b>TN #:</b>            | 210648                                                          |
| <b>Document Title:</b>  | Energy Commission Staff's Rebuttal to CDFWS's Opening Testimony |
| <b>Description:</b>     | N/A                                                             |
| <b>Filer:</b>           | Joe Douglas                                                     |
| <b>Organization:</b>    | California Energy Commission                                    |
| <b>Submitter Role:</b>  | Energy Commission                                               |
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**STATE OF CALIFORNIA**  
**ENERGY RESOURCES CONSERVATION**  
**AND DEVELOPMENT COMMISSION**

In the Matter of:

High Desert Power Project, LLC

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**Docket No. 97-AFC-1C**

**ENERGY COMMISSION STAFF'S REBUTTAL TO CDFW'S OPENING  
TESTIMONY**

Staff reviewed Opening Testimony filed by the California Department of Fish and Wildlife (CDFW) on March 1, 2016 (TN210565). Based on a review of CDFW's testimony, Staff's rebuttal is necessary to respond to issues first raised in their testimony, and is evidence upon which the Committee can base its decision. More importantly, Staff believes CDFW has raised issues that either are well beyond the scope of the current High Desert Power Project (HDPP) Petition to Amend (PTA) proceeding, or require significant extension of the schedule for additional detailed analysis. Additional analysis would require a much broader participation by local water agencies in the Victorville region and the Mojave River Basin (MRB) adjudication, in addition to CDFW.

CDFW's concerns are that an Energy Commission approval of any additional recycled water use at HDPP will jeopardize Mojave River flows and riparian habitat, and MRB water levels. CDFW's testimony provided a timeline

(TN210565 page 2-3) of their participation to address, "...a groundwater basin that has been in overdraft since the 1950's..." including their participation in the HDPP licensing proceeding. CDFW also highlighted in its testimony the agency's most recent motion in 2015 to the Watermaster in support of the "...continued rampdown of the Free Production Allowance in the Baja Subarea." The 2015 motion contained declarations by the same two CDFW witnesses, Alisa Ellsworth and Kit Custis, who have provided the CDFW responses in the HDPP proceeding – the CDFW Opening Testimony (TN210565) and the CDFW responses to Committee Questions for Parties 1(a.) and 1(b.) (TN210554).

This PTA is to drought proof HDPP. CDFW's testimony raises new contested issues concerning Soil and Water Resources, and potential issues with Biological Resources. Staff has new evidence to introduce in its rebuttal testimony to respond to CDFW's testimony which will supplement the record, and reserves the right to submit additional evidence at such time as it becomes necessary.

The following Staff witnesses are identified and their declarations and resumes are docketed (TN210303), with one additional Staff witness' declaration and resume attached to Staff's Prehearing Conference Statement and Exhibit List, to sponsor Staff's rebuttal testimony to the issues raised in CDFW's opening testimony: Soil and Water Resources – Abdel-Karim Abulaban, Matthew Layton, Paul Marshall; Biological Resources - Anwar Ali.

DATED: March 8, 2016 Staff's Rebuttal Testimony Respectfully Submitted,

Original signed by \_\_\_\_\_  
ELENA M. MILLER  
Senior Staff Counsel  
California Energy Commission  
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Sacramento, CA 95817  
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### **STAFF'S REBUTTAL TESTIMONY**

On page 6 of the CDFW testimony (TN210565), CDFW states:

*“Although the Judgment's overdraft definition would include a condition where groundwater levels are fluctuating within an Operational Range, this condition in the Alto Subarea is obtained by infiltrating imported water or by the accounting exercise of trading Free Production Allowance (FPA). The imported State Water Project water, while important to the basin's water balance, isn't natural to the basin. The availability to use FPA to balance the water budget shouldn't be considered a permanent source of water because it won't be available should the FPA owners choose to increase their pumping.”*

**Staff Rebuttal:** Staff does not understand this statement in light of their recent 2015 Motion to encourage the Watermaster to continue to rampdown the Free Production Allowances (FPA). It appears that CDFW is acknowledging the ability of the Watermaster to “correct” deficiencies by importing water or adjusting the FPA, but then their testimony suggests that the Watermaster will not use the tools or the tools are no longer adequate. Staff also notes that the consumptive use of recycled water by HDPP would also significantly benefit the Alto subbasin because it would reduce salts and nutrient loading to the river. The CDFW analysis does not recognize that tools available under the adjudication including

Mojave Water Agency (MWA) purchase of freshwater from the State Water Project (SWP) for make-up water needed to recharge the Alto subbasin would significantly enhance water quality in the MRB and make more, higher quality, freshwater available for greater beneficial uses.

On page 11 of the CDFW testimony (TN210565), CDFW states:

*“The conclusion from these theoretical water budgets is that the proposed 100% recycled water use at the HDPP will likely cause an ongoing impact to the Alto Subarea through a reduction in groundwater recharge in the Transition Zone. This deficit will likely lower groundwater levels, which may create a significant impact to the health of the riparian habitat and wildlife.”*

**Staff’s Rebuttal:** Staff finds the claim that ongoing impacts are occurring at odds with the CDFW response to the Committee Questions for Parties (TN10554) where CDFW represented that the riparian habitat conditions “have remained fairly stable” and “continues to support a fairly large intact riparian corridor along the Mojave River.” While Staff has been working with MWA and Victor Valley Wastewater Reclamation Authority (VWVRA), Staff is concerned that we have not formally heard from these other parties to the Memorandum of Understanding (MOU) and adjudicated water basin about the habitat, enforcement of the MOU, and the status of the adjudication.

On page 11 of the CDFW testimony (TN210565) CDFW asserts that:

*“CEC Staff have not adequately analyzed the potential environmental impacts to the Alto Subarea and the Transition Zone from the HDPP use of 100% recycled water.”*

**Staff’s Rebuttal:** Both for the present proceeding, as well as the 2009 analysis of the amendment to allow HDPP to use recycled water, Staff relied on a 2003

MOU negotiated between CDFW and VVWRA. The terms of the MOU specify minimum recycled water discharges that have to be made to the Mojave River to maintain riparian vegetation and habitat. The MOU provides that a minimum of 9,000 acre feet per year (AFY) plus a minimum of twenty percent (20%) of increases that occur from regional growth of sanitary wastewater be discharged to the River to preserve and protect the riparian vegetation and dependent species. Staff understands through coordination with VVWRA that they have been complying with the MOU. All wastewater discharges to the Mojave River are also measured and reported in annual reports to the MWA. The recycled water available to HDPP, or the approved-but-not-built Victorville 2 Hybrid Power Project (VV2), would be those amounts available after the MOU requirements are met. Therefore, Staff believed that the MOU was adequate for ensuring the appropriate basin balances were maintained to protect riparian resources and that no additional study of impacts, beyond the mutual agreement under the MOU, was necessary.

Prior to this proceeding, the MOU was also the basis for Energy Commission (July 2008) approval of VV2 (TN47152) to use up to 3,150 AFY of recycled water. In August 2008, the HDPP and VVWRA determined that additional surplus recycled water was available above that required in the MOU and those recycled water amounts approved for use for VV2. HDPP filed a petition to amend to use the remaining available recycled water for a portion of the HDPP process water needs. The petition was approved by the Energy Commission in 2009 (TN54277), with a requirement that the project conduct a

feasibility study to evaluate using 100% recycled water based on estimates that additional recycled water would be available in accordance with the MOU. During the 2008 proceeding to amend HDPP to allow it to use recycled water, Energy Commission Staff reached out to CDFW to consult with them about the impact of HDPP's use of recycled water to the riparian vegetation and habitat. The phone conversation between Energy Commission Staff and Tom Bilhorn, hydrology consultant to CDFW, was documented in a report of conversation (TN210633). Staff asked the CDFW representative to confirm that CDFW understood that the recycled water that HDPP would use would come from the tertiary-treated water that would otherwise be discharged to the Mojave River. CDFW stated that "this [use of the tertiary-treated recycled water by HDPP] would be in accordance with the MOU, and would leave sufficient flow directly into the Mojave River to satisfy CDFG's riparian needs." CDFW also confirmed that "after deducting the volume of recycled water going to HDPP, the remaining tertiary-treated flow to the river, in combination with the secondary-treated discharge into the percolation ponds, must be sufficient to satisfy the annual 9,000 acre feet of required discharge at the permitted points of discharge." Staff notes that this conversation took place only a few months after the Energy Commission licensed the VV2 power project to use up to 3,150 AFY of recycled water. Therefore, Staff has been acting on the premise that the MOU has been the device to manage recycled water discharges such that the riparian vegetation and habitat are protected.

On page 11 of the CDFW testimony (TN210565) CDFW asserts that:

*“The reduced recharge resulting from the 100% recycled water use at the HDPP will likely result in a long-term deficit in the groundwater stored in the Transition Zone. This deficit has the potential to lower groundwater levels and thereby impact the riparian habitat and wildlife in the Transition Zone. **This deficit may occur even though the VVWRA discharge to the river meets the minimum required by the 2003 MOU.** I have not seen an analysis done in the documents that I have reviewed in the docket that addresses the potential impacts from a reduction in recharge to the Transition Zone that would result from the HDPP using 100% recycled water.” (Emphasis added) (Page 11)*

**Staff’s Rebuttal:** CDFW is raising substantive issues that any use of recycled water by HDPP has the potential to cause the storage in the basin to decline and the flow in the River to decrease, which Staff has not had time to research. Staff relied on the negotiated MOU to establish available recycled water for HDPP use. Further, it appears that CDFW is either suggesting that the MOU is no longer adequate, or that the adjudication is not adequate, or both. These issues may be most appropriately taken up by the stakeholders in a proceeding outside the HDPP PTA review. Staff cannot address these issues within the current scope of the HDPP proceeding and limited time scheduled, and would not recommend doing so without the appropriate stakeholders’ full participation. Staff notes, as indicated by CDFW in their testimony, that prior to VVWRA delivery of recycled water for use at a local golf course in Victorville in 2000, VVWRA was required to petition the State Water Resources Control Board (SWRCB) for a permit to divert. CDFW testimony submitted at that time was used to demonstrate there were significant resources that could be impacted by the diversion. Based on the SWRCB decision in that case, VVWRA withdrew its petition. CDFW and VVWRA subsequently negotiated the 2003 MOU with



CDFW to manage discharges such that resources are protected and surplus recycled water could be diverted for other beneficial uses. VVWRA was then granted a permit by SWRCB to divert some recycled water to the golf course. This issue and process are similar to what the committee may be facing now.

Staff relied on official agreements and records from the parties who are signatories to the MOU to complete its analysis. Until CDFW's filing on March 1, 2016, Staff was unaware that there might be issues with the MOU. If the Committee decides that Staff needs to conduct the research suggested by CDFW, then Staff requests the Committee provide Staff direction as to whether these issues are within the HDPP PTA review purview, and if so, allow for time to conduct the necessary research and analysis. Also, Staff requests the Committee direct the parties involved with the MOU and in the adjudication to provide the necessary data needed for Staff to conduct its research.

## References

CDFW 2016 -- California Department of Fish and Wildlife Opening Testimony. March 1, 2016. (TN210565).

CDFW 2016 -- California Department of Fish and Wildlife, Committee Questions for Parties High Desert Amendments Committee California Department of Fish and Wildlife Answers to Question 1(a) and 1(b), February 29, 2016. (TN210554)

CEC 2008 -- Victorville 2 Hybrid Power Project, Final Commission Decision, July, 2008. (TN47152)

CEC 2009 -- Order Approving a Petition to Modify Soil and Water Conditions Related to Use of Recycled Water for Project Cooling, November 30, 2009. (TN54277)

CEC 2016 -- MOU between California Department of Fish and Game and the  
Victor Valley Wastewater Reclamation Authority, June 27, 2003.  
(TN210503)

CEC 2016 -- Record of Conversation regarding the MOU between CDFG and  
VWRA. (TN210633)

**DECLARATION OF  
Anwar Ali**

I, **Anwar Ali**, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection Division as a **Biologist**.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on **Soil and Water Resources** as it relates to **Biological Resources**, for the **High Desert Power Plant Amendment (97-AFC-1C)**, based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

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

Dated: March 7, 2016

Signed:  \_\_\_\_\_

At: Sacramento, California

# **Anwar Ali, Ph.D.**

## **Education**

Ph.D. Botany. University of California, Riverside. June 1994.

## **Professional Experience**

### **January 2013 – Present. Planner III & Energy Resources Specialist III.**

*California Energy Commission, Siting Transmission and Environmental Protection Division.*

As a first-level supervisor, perform supervisory, administrative and analytical tasks. Duties include: Supervise a staff of technical specialists (staff biologists/planner II and Energy Analysts), and consultants performing biological resources analyses; Plan, organize, direct, oversee, and coordinate a staff of biological resources in their complex analyses of energy facilities licensing, energy facilities compliance, electric transmission corridor planning, and electric transmission line licensing; Maintain rigorous analytical foundation and meticulous writing technique over all technical documents originating with the staff and ensure that technical and policy documents prepared by staff and consultants are technically adequate and accurate, consistent with Division and Commission policies, and coordinated with other technical disciplines; Ensure timely completion of staff assignments; Procure, train, and coach staff in the unit by providing direction and guidance; Independently act as an expert to analyze and advise the Commission management of most complex energy and environmental issues.

### **July 2012 – January 2012. Planner II (Staff Biologist).**

*California Energy Commission, Siting Transmission and Environmental Protection Division*

As a staff biologist, primary duties included: conducting impact analyses to biological resources for power plant siting projects; evaluation of compliance with conditions of certification related to biological resource technical areas for power plant facilities; analyzing amendments and project changes to previously approved power plants evaluating compliance with accepted Conditions of Certification related to biological resource technical areas for power plant facilities; identifying, describing, and analyzing the biological issues related to electrical energy production and transmission facilities, alternative energy technologies, energy research and development, and Commission programs and policies.

**Associate Environmental Planner (Generalist) & Associate Environmental Planner (Natural Sciences/Biologist). November 2006- July 2012.**

*California Department of Department of Transportation, District 8, Riverside and San Bernardino Counties.*

Using scientific judgment, independently assessed the impacts of California Department of Transportation projects on biological resources by conducting the required sensitive plants and wildlife surveys, performing jurisdictional delineation of Wetlands and Waters and coordinating with state and federal agencies to acquire the necessary permits including but not limited to the CDFG 2801 Incidental Take Permit, CDFG Streambed and Lake Alteration Agreement (1602 permit), RWQCB 401 permit, Army Corps of Engineers Nationwide 404 permits, and Biological Opinions ; Prepared and processed environmental documents including Initial Studies and Environmental Assessments (IS/EA) and Categorical Exemptions (CE) for transportation projects in compliance with applicable local, State and Federal laws, regulations and policies; Performed peer and technical reviews of environmental documents [(IS/EA) Environmental Impacts Report/ Environmental Impact Statements (EIR/EIS)] for related transportation projects prepared by local agencies (cities and counties) to assure compliance with the California Environmental Quality Act and other Division's environmental review process.

**Research Scientist. November 1996- October 2006.**

*University of California, Riverside.*

Investigated the biological causes of leaf abscission associated with the use of the hydrogen cyanamide. Investigated the physiological effects and levels of phytohormones in xylem sap caused by Glassy Winged Sharpshooter (the vector for bacterium *Xylella fastidiosa*) using Radioimmunoassay (RIA). Investigated the biological causes of albedo breakdown in citrus with the goal of to developing a statistical model predictive of crease occurrence. Investigated the effect of phosphorus deficiency on pyridoxal phosphate metabolism in citrus. Studied the role of pectin methyl esterase (PME) and gel-forming enzyme in citrus creasing.

**DECLARATION OF  
Abdel-Karim Abulaban**

I, **Abdel-Karim Abulaban**, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection Division as an **Associate Civil Engineer in the Water section**.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on **Soil and Water**, for the **High Desert Power Plant Amendment (97-AFC-1C)**, based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

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

Dated: February 4, 2016

Signed: \_\_\_\_\_



At: Sacramento, California

**AbdelKarim Abulaban**  
5501 Lilyview Way, Elk Grove, CA 95757  
Tel. (916) 233-5006 (Mobile)  
e-mail: [akabulaban@aim.com](mailto:akabulaban@aim.com)

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## **Education**

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**Ph.D. Civil Engineering**, University of Minnesota (*Hydrology and Water Resources*).  
Thesis title: Modeling the transport of sorbing chemicals in heterogeneous porous media.  
**M.S. Civil Engineering**, Yarmouk University, Irbid, Jordan (*Water Resources*).  
Thesis Title: Developing Intensity-Duration-Frequency Curves for Irbid Region.  
**B.S. Civil Engineering**, Yarmouk University, Irbid, Jordan (*water resources stream*).  
Senior Project: Design of Water Supply and Sewer Systems for the Northwestern Part of Irbid City (*population 100,000*).

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## **Registration:**

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**Registered Professional Engineer** (Civil) in the state of California (Lic. No. 76030)  
**Registered as a Qualified SWPPP Developer and Practitioner** (QSD/QSP), California  
Stormwater Quality Association (CASQA) - Cert. # 1160.

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## **Experience - Professional**

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**June 2010-Present:**  
**Associate Civil Engineer**

CA Energy Commission,  
Sacramento, CA, USA.

- ❖ Reviewing and evaluating the construction, operation, and maintenance of energy facilities and power plants for water supply, wastewater disposal, waste, water quality, and stormwater to assess the potential impacts to human health and the environment.
- ❖ Reviewing sensitive project sites that may have issues involving flooding and stormwater management, discharges to impaired water bodies, depleted groundwater and surface water resources, and wastewater management and disposal methods.
- ❖ Responding to soils or water resources issues that may arise regarding power plant operations.
- ❖ Conducting investigations to determine if any violations of the program's regulations, the Energy Commission's conditions of certification, or the CA Environmental Quality Act (CEQA) have occurred.
- ❖ Analysis of one of the largest solar projects in the world for environmental impacts on soil and water resources. This project is designed to generate 500 megawatts using solar energy to generate steam that runs a turbine to generate electricity.
- ❖ Analysis of another solar project, also one of the largest projects in the world, that uses photovoltaic (PV) technology and is designed to generate 1000 megawatts.
- ❖ Currently analyzing a cutting-edge project that proposes to minimize the green house impact of the project by injecting the generated CO<sub>2</sub> gas underground for long term sequestration. The CO<sub>2</sub> would be injected to depths of 5000 ft. or more below ground surface. This project is the first of its kind in the USA and would set the stage for other projects to store CO<sub>2</sub> in geologic formations to reduce green house gas emissions.

**Dec. 2006-May 2010:**

- ❖ In charge of hydraulic modeling and sediment transport for the

|                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                 |
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| <p><b>Water Resources Engineer</b><br/>CA Dept. Water Resources,<br/>Fresno, CA, USA.</p>                                                                              | <p>San Joaquin River restoration project.</p> <ul style="list-style-type: none"> <li>❖ Performed 1- and 2-D hydraulic analysis to support restoration of the San Joaquin River for the purpose of improving spawning/rearing habitat, enhancing floodplain connectivity, and improving riparian corridor.</li> </ul>            |
| <p><b><u>Dec. 2001-Dec. 2006:</u></b><br/><b>Retained Hydrologist</b><br/>J.L. Nieber &amp; Associates,<br/>Hydrologic Consultants,<br/>Lindstrom, Minnesota, USA.</p> | <ul style="list-style-type: none"> <li>❖ Performed hydrologic analysis and assessment of environmental impact of contamination incidents on ground water resources, as well as design of remediation plans.</li> <li>❖ Contaminants analyzed included hydro-carbons, chlorinated solvents, as well as agrichemicals.</li> </ul> |
| <p><b><u>Dec. 90 – Dec. 93:</u></b><br/><b>Retained Hydrologist.</b><br/>BAUMGARTNER<br/>ENVIRONICS, INC, Olivia,<br/>Minnesota, USA.</p>                              | <ul style="list-style-type: none"> <li>❖ Performed assessment of the environmental impact of contamination incidents on groundwater resources, and design of action plans.</li> </ul>                                                                                                                                           |
| <p><b><u>Jun. 84 - Sep. 84:</u></b> <b>Civil Engineer</b><br/>WESTON International, Inc,<br/>Irbid Wastewater Treatment<br/>Facility, Irbid, Jordan.</p>               | <ul style="list-style-type: none"> <li>❖ Conducted material quality control, performing both laboratory and field quality control tests.</li> </ul>                                                                                                                                                                             |

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### *Experience - Academic*

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| <p><b><u>Sep. 2003-Sep. 2005:</u></b><br/>Assistant Professor,<br/>Hashemite University, Zarqa,<br/>Jordan.</p>                            | <p>Taught the following courses:</p> <ul style="list-style-type: none"> <li>❖ Water and Wastewater Treatment Methods (Senior) – 1 semester</li> <li>❖ Wastewater Engineering (Senior level) – 2 semesters</li> <li>❖ Statics - 3 semesters</li> <li>❖ Engineering Drawing - 4 semesters</li> <li>❖ Visual Communication - 4 semesters</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><b><u>June – August, 96, 97, 98, 2000:</u></b><br/>Army High Performance<br/>Computing Research Center,<br/>Minneapolis, Minnesota.</p> | <ul style="list-style-type: none"> <li>❖ The Summer Institute is a summer course offered to promising upper class students from member institutions. The summer course included a ground water flow and transport group that normally had about 4 students from different backgrounds.</li> <li>❖ Taught and helped teach the Summer Institute course in hydrology and transport in porous media.</li> <li>❖ Was part of the team that trained the students to use a particle tracking solute transport code which I developed.</li> <li>❖ Also trained the group to use the DoD's Ground Water Modeling System, GMS.</li> <li>❖ In the summer of 2000 I was fully in charge of the whole group.</li> <li>❖ More information about the projects can be on the Summer Institute web site at:<br/><a href="http://www.arc.umn.edu/education/SummerInst/">http://www.arc.umn.edu/education/SummerInst/</a></li> </ul> |
| <p><b><u>August, 1997:</u></b><br/>Short course for practitioners,<br/>University of Minnesota,<br/>Minneapolis, Minnesota, USA.</p>       | <ul style="list-style-type: none"> <li>❖ Taught a short course on the application of the Department of Defense's Ground Water Modeling System, GMS, offered by the American Society of Agricultural Engineers and attended by about 40 professionals and academicians from around the United States as well as several countries around the world.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



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| <p><b><u>Mar. 88 - Dec. 92:</u></b><br/>Teaching Assistant,<br/>Dept. of Civil Engineering,<br/>University of Minnesota,<br/>Minneapolis, Minnesota.</p> | <p>❖ Teaching assistant for the senior courses of Hydrology and Hydrologic Design, and Water Resources Engineering.</p>                                                         |
| <p><b><u>Sep. 84 - Sep. 86:</u></b><br/>Teaching Assistant,<br/>Civil Engineering Dept.,<br/>Yarmouk University, Irbid,<br/>Jordan.</p>                  | <p>❖ Teaching assistant for the courses of Statics, Engineering Graphics, Fluid Mechanics, Hydraulics, Sanitary Engineering, Applied Hydraulics, and Groundwater Hydrology.</p> |
| <p><b><u>Jan. 87 - Jun. 87:</u></b><br/>Instructor,<br/>Institute of Allied Health<br/>Sciences, Irbid, Jordan.</p>                                      | <p>❖ Teaching a senior level course on the principles of environmental engineering.</p>                                                                                         |

**DECLARATION OF  
Matthew S Layton**

I, **Matthew S Layton**, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection Division as a **Supervising Mechanical Engineer** in the **Engineering Office**.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on **Soil and Water Resources**, for the **High Desert Power Plant Amendment (97-AFC-1C)**, based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

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

Dated: Feb 10, 2016

Signed: \_\_\_\_\_

*Matthew S Layton*

At: Sacramento, California

## MATTHEW S. LAYTON

### Experience Summary

Thirty three years of experience in the electric power generation field, including regulatory compliance and modification; research and development; licensing of nuclear, coal-fired, peaking and combined cycle power plants; and engineering and policy analysis of regulatory issues.

### Education

B.S., Applied Mechanics, University of California, San Diego.

Registered Professional Engineer - Mechanical, California.

### Experience

**2009-present** – Supervising Mechanical Engineer, Engineering Office, Siting, Transmission and Environmental Protection Division, California Energy Commission.

**1987-2009** – Senior Mechanical Engineer, STEP Division, California Energy Commission. Review and evaluate power plant proposals, identify issues and resolutions; coordinate with other agencies; and prepare testimony, in the areas of:

- Air quality resources and potential impacts, and mitigation measures;
- Public Health; and
- Transmission Line Safety and Nuisance.

Prepared Commission demonstration project process; contributed to the Energy Technology Status, Energy Development, and Electricity Reports; Project Manager for demonstration projects; evaluated demonstration test plans, procedures, data and reports; disseminated test results; and managed research and development contracts.

**1983-1986** – Control Systems Engineer, Bechtel Power Corporation. Managed a multi-disciplined effort to environmentally qualify client's safety related nuclear plant equipment. Performed analyses, calculations and reviews against vendor test reports, NRC guidelines and plant normal and postulated accident conditions.

**1981-1983** – Engineer, GA Technologies, Inc. Supervised design and procurement of full-scale test assembly used to evaluate design changes to operating reactor graphite core assembly. Conducted experiment to determine the relationship of graphite oxidation rate to water concentration, temperature, and helium pressure. Environmentally qualified essential and safety related nuclear power plant equipment to comply with NRC guidelines.


**DECLARATION OF  
Paul Marshall**

I, Paul Marshall, declare as follows:

1. I am presently employed by the California Energy Commission in the Siting, Transmission and Environmental Protection Division as Supervisor of the Geosciences Unit.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I helped prepare the staff testimony on the Soil and Water Resources Section, for the High Desert Power Plant Amendment (97-AFC-1C), based on my independent analysis of the Petition to Amend and supplements thereto, data from reliable documents and sources, and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.
5. I am personally familiar with the facts and conclusions related in the testimony and, if called as a witness, could testify competently thereto.

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

Dated: 2/12/16

Signed: 

At: Sacramento, California

# **Paul D. Marshall**

## **EDUCATION**

**SAN DIEGO STATE UNIVERSITY, CALIFORNIA**  
**Geological Sciences with Emphasis in Engineering - 1985**

## **LICENSES**

**California Registered Geologist, No. 5718**  
**California Certified Engineering Geologist, No. 1817**  
**California Certified Hydrogeologist, No. 468**

## **EMPLOYMENT HISTORY**

### **CALIFORNIA ENERGY COMMISSION**

**Siting, Transmission, and Environmental Protection Division – Supervisor, Geosciences Unit/ January 2008 - Present**

### **CALIFORNIA DEPARTMENT OF CONSERVATION**

**Office of Mine Reclamation – Supervisor, Compliance Unit/October 2006 – January 2008**

### **STATE WATER RESOURCES CONTROL BOARD**

**Division of Financial Assistance – Chief, Project Implementation Unit/January 2001 – September 2006**

### **CALIFORNIA DEPARTMENT OF WATER RESOURCES**

**Division of Local Assistance - Senior Engineering Geologist/ July 2000 – January 2001**

**Division of Safety of Dams - Senior Engineering Geologist/October 1995 – June 2000**

**Division of Local Assistance - Associate Engineering Geologist/November 1992 - October 1995**

### **KLEINFELDER, INC. (California)**

**Project Geologist - 4 years**

### **EARTH SYSTEMS, INC. (California)**

**Staff Geologist - 3 years**