

DOCKET**09-AFC-4**

DATE	MAR 04 2011
RECD.	MAR 04 2011

Contra Costa Generating Station, LLC's Opening Testimony

Oakley Generating Station (09-AFC-04)

March 4, 2011



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Sacramento CA 95814
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March 04, 2011

California Energy Commission
Docket Unit
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **CONTRA COSTA GENERATING STATION, LLC'S
OPENING TESTIMONY
OAKLEY GENERATING STATION
DOCKET NO. (09-AFC-4)**

Enclosed for filing with the California Energy Commission is the original of **CONTRA COSTA GENERATING STATION, LLC'S OPENING TESTIMONY**, for the Oakley Generating Station (09-AFC-4).

Sincerely,

A handwritten signature in blue ink that reads "Marie Mills". The signature is fluid and cursive, with the first name "Marie" and last name "Mills" clearly distinguishable.

Marie Mills

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Project Description for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
PROJECT DESCRIPTION
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Project Description associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Sections 2.0 & 4.0, and Appendix 2.0.

Exhibit 2 **Contra Costa Generating Station, LLC's Data Adequacy Supplement**; dated August, 2009, and docketed on August 20, 2009, Response 1.

- Exhibit 4 **Contra Costa Generating Station, LLC's Notification of Project Name Change**; dated October 5, 2009, and docketed on October 5, 2009.
- Exhibit 5 **Contra Costa Generating Station, LLC's Supplement to the Application for Certification (AFC)**; dated October 12, 2009, and docketed on October 20, 2009.
- Exhibit 6 **Contra Costa Generating Station, LLC's Response to CEC Staff's Proposed Schedule**; dated November 5, 2009, and docketed on November 5, 2009.
- Exhibit 23 **Contra Costa Generating Station, LLC's Supplemental Information Item (SII) #1 – Topographic Survey Map, Oakley Generating Station**; dated March 4, 2009, and docketed on July 21, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree that the Final Staff Assessment accurately describes the OGS in sufficient detail to support the environmental analysis and to inform the Commission about the attributes of the OGS.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Gregory Darwin

I, Gregory Darwin, declare as follows:

1. I am presently employed by Atmospheric Dynamics, Inc., as a Meteorologist.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Air Quality for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Carmel-by-the-Sea, CA on March 14, 2011.



Gregory Darwin

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Air Quality for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
AIR QUALITY
OPENING TESTIMONY**

I. Name: Greg Darvin and James McLucas

II. Purpose:

Our testimony addresses the subject of the Air Quality Resources associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Greg Darvin: I am presently employed at Atmospheric Dynamics and have been for the past 8 years. I have a Graduate Degree in Atmospheric Science and I have 25 years of experience in air quality meteorology, dispersion model development and application, and air quality consulting. I prepared the Air Quality section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Air Quality section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, we are sponsoring the following exhibits in this proceeding.

- Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.1, and Appendix 5.1.
- Exhibit 2 **Contra Costa Generating Station, LLC's Data Adequacy Supplement**; dated August, 2009, and docketed on August 20, 2009, Responses 4 through 8.
- Exhibit 3 **Bay Area Air Quality Management District (BAAQMD) Letter Re: Preliminary Review of the Determination of Compliance/Authority to Construct Application**; dated September 9, 2009, and docketed on September 15, 2009.
- Exhibit 7 **Atmospheric Dynamics Wind Tunnel Modeling Protocol for the Oakley Generating Station**; dated November, 2009, and docketed on December 2, 2009.
- Exhibit 10 **Contra Costa Generating Station, LLC's Response to the Oakley Generating Station Project Data Request Set 1 (#1-43)**; dated February, 2010, and docketed on February 11, 2010, Responses 1 through 33.
- Exhibit 12 **Contra Costa Generating Station, LLC's Supplemental Filing for Air Quality & Public Health Revised April 2010**; dated April, 2010, and docketed on April 7, 2010.
- Exhibit 15 **Contra Costa Generating Station, LLC's Response to CEC Staff Data Requests #68-73**; dated May, 2010, and docketed on May 12, 2010.
- Exhibit 16 **Contra Costa Generating Station, LLC's Responses to Bay Area Air Quality Management District (BAAQMD) Questions Received on April 15, 2010**; dated May 20, 2010, and docketed on May 21, 2010.

- Exhibit 22 **Contra Costa Generating Station, LLC's Response to CEC Staff Workshop Queries # 3-17**; dated July, 2010, and docketed on July 2, 2010, Responses 3 & 4.
- Exhibit 25 **Oakley Generating Station Air Quality Modeling Files, Supplement to Previous Submittals with New/Revised Analysis (Response to Workshop Queries 3-4)**; dated April, 2010, and docketed on July 22, 2010.
- Exhibit 26 **Contra Costa Generating Station, LLC's Air Quality Modeling Files**; dated August, 2011 and docketed August 5, 2010.
- Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.
- Exhibit 35 **Contra Costa Generating Station, LLC's Cumulative Air Quality Impact Analysis (Supplemental Filing in Response to California Energy Commission Staff Data Request #23)**; dated October 2010, and docketed on October 20, 2010.
- Exhibit 36 **Contra Costa Generating Station, LLC's Oakley Generating Station Mitigation Strategy**; dated November 3, 2010, and docketed on November 3, 2010.
- Exhibit 37 **Contra Costa Generating Station, LLC's Bay Area Air Quality Management District (BAAQMD) Application 20798, Preliminary Determination of Compliance**; dated October, 2010, and docketed on November 4, 2010.
- Exhibit 39 **Contra Costa Generating Station, LLC's Errata Sheet for Bay Area Air Quality Management District (BAAQMD) Application 20798, Preliminary Determination of Compliance**; dated November 4, 2010, and docketed on November 5, 2010.

- Exhibit 45 **Bay Area Air Quality Management District (BAAQMD) Final Determination of Compliance**; dated January 2011, and docketed on January 24, 2011.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 49 **Letter from First American Trust to the California Energy Commission (CEC) regarding Bay Area Air Quality Management District (BAAQMD) Emission Reduction Credits**; dated January 31, 2011, and docketed on February 11, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

We have reviewed and agree with the analysis and most of the Conditions of Certifications embodied in the Final Staff Assessment. Minor modifications are requested below. We do agree that the Conditions of Certification, which incorporate the Final Determination of Compliance (FDOC) from the Bay Area Air Quality Management District (BAAQMD), will ensure that the OGS will comply with all applicable Air Quality-related laws, ordinances, regulations and standards (LORS) and will not result in significant air quality impacts.

CONDITION OF CERTIFICATION AQ-SC7

CCGS proposed modifications to Condition of Certification **AQ-SC7** in our Final Comments on the Preliminary Staff Assessment (PSA). One of the proposed modifications was to change VOC value in the first sentence from 29.60 tpy to 29.49 tpy to agree with the offset value included in Part 43(c) of the BAAQMD's FDOC Permit Conditions. With this modification, Condition of Certification **AQ-SC7** is acceptable.

CONDITION OF CERTIFICATION AQ-SC8

CCGS proposed **AQ-SC8** in our PSA comments in response to the discussion at the PSA Workshop. We have several minor comments on the version that has been included in the FSA:

- In Paragraph b.1, we request that “(which includes a Bay Area Clean Air Foundation administration fee of 20 percent)” be added after “\$32,750 per tpy” to maintain consistency with the representation of this value in Paragraph b.
- In the last paragraph of the Condition, we request that the value “\$500,000” be changed to “\$417,180” to reflect the correct amount of the 20 percent administration fee, which we calculate as follows:

$$\text{Admin. Fee} = (63.88 \text{ tpy} + 12.55 \text{ tpy}) \times \$32,750/\text{tpy} / 1.2 \times 0.2.$$

With these minor modifications Condition of Certification **AQ-SC8** is acceptable.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Biological Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Richard Crowe

I, Richard Crowe, declare as follows:

1. I am presently employed by CH2M Hill, as a Senior Biological Resources Technician
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Biological Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.

Richard Crowe

Richard Crowe

**OAKLEY GENERATING STATION PROJECT
BIOLOGICAL RESOURCES
OPENING TESTIMONY**

I. Names: Douglas Davy and Richard Crowe

II. Purpose:

Our testimony addresses the subject of Biological Resources associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Biological Resources section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

Richard Crowe: I am presently employed at CH2M HILL and have been for the past 12 years and am presently a Senior Biological Resources Technician with that organization. I have over 17 years of experience in the field of biological resources regulatory compliance support for infrastructure development projects. I assisted in the preparation of the AFC post-filing information, data responses, and supplemental filings for Biological Resources. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, we are sponsoring the following exhibits in this proceeding.

- Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.2, and Appendix 5.2.
- Exhibit 18 **Contra Costa Generating Station, LLC's Record of May 20, 2010 Conversation between CH2M Hill and California Department of Fish and Game regarding Wetland E Management Plan**; dated May 20, 2010, and docketed on June 7, 2010.
- Exhibit 19 **Contra Costa Generating Station, LLC's Wetland E Management Plan Updated June 2010**; dated June 18, 2010, and docketed on June 18, 2010.
- Exhibit 20 **Email from California Department of Fish and Game, dated June 21, 2010, regarding Wetland E Management Plan**; dated June 21, 2010, and docketed on June 21, 2010.
- Exhibit 29 **Letter from East Contra Costa County Habitat Conservancy to California Energy Commission (CEC) regarding HCP/NCCP**; dated August 26, 2010, and docketed on August 26, 2010.
- Exhibit 31 **Contra Costa Generating Station, LLC's Draft HCC HCP-NCCP Planning Survey Report**; dated September 17, 2010, and docketed on September 17, 2010.
- Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.
- Exhibit 42 **Contra Costa Generating Station, LLC's Supplemental Information Item #5: Revised ECCCHC City/County of Oakley/Contra Costa County Application Form and Planning Survey Report**; dated November 22, 2010, and docketed on November 22, 2010.

- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 48 **City of Oakley Response to Preliminary Staff Assessment Parts A and B, and Department of Fish and Game's Conservation Easement**; dated February 2, 2011, and docketed on February 3, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.
- Exhibit 53 **Contra Costa Generating Station, LLC's Technical Memorandum: Arborist Survey of the Oakley Generating Station Project and Transmission Line Upgrade Route**; dated February 22, 2011, and docketed on February 22, 2011.

V. Opinion and Conclusions

We have reviewed and agree with the analysis and all conditions of certifications embodied in the Biological Resources Section of the Final Staff Assessment (FSA) except for Condition of Certification **BIO-19**. We believe that with incorporation of the Conditions of Certification (**BIO-19** as modified below), construction and operation of the OGS will comply with all applicable Biological Resources-related law, ordinances, regulations and standards and will not result in significant environmental impacts.

BIO-19

Condition of Certification **BIO-19** as proposed by Staff contains requirements that the extent and duration of water ponding and the composition of wetland vegetation in Wetland E cannot significantly change between pre-construction conditions. We believe that this wording may be unnecessarily restrictive and could have unintended consequences that run counter to the management goals of this wetland.

As discussed in the AFC and the FSA, Wetland E was created in 1996 as a mitigation measure for wetland fill in the nearby Lauritzen Yacht Harbor. A

small area drains that consists almost entirely of the OGS site and adjacent Pacific Gas and Electric Company Antioch natural gas terminal drains into Wetland E. The wetland does not overflow to adjacent drainage and its water level may be largely controlled by the relatively high project area water table during the summer months.

Wetland E was placed in a perpetual conservation easement with the California Department of Fish and Game (CDFG) in 1996 but, unlike many conserved wetlands, it is not actively managed by a non-governmental conservation organization or state or local government. For these reasons, Wetland E currently functions poorly as a wetland. The OGS project will benefit this wetland in a number of ways and is unlikely to adversely affect it. Benefits will include:

- CCGS has prepared a restoration and management plan for the wetland that was submitted to the CDFG in December of 2009 and provided to the CEC Staff. Portions of this plan are reflected as stipulations in Condition BIO-19 with which CCGS agrees. Provisions of this plan include removal of the refuse that currently litters the wetland, removal of non-native vegetation and planting of native vegetation that is more conducive to native wildlife, and monitoring and continued management of the wetland as a functioning wetland.
- CCGS and successor owners will be bound to actively manage the wetland to ensure that the restoration measures are successful and will be subject to CEC compliance review and penalties for non-performance
- CCGS has designed the stormwater drainage system for the OGS carefully to manage both the quality and quantity of runoff from the OGS site, which makes up a significant percentage of the water that runs into Wetland E. The drainage system consists of grassy swales that will capture stormwater and clean it before discharging it into a stormwater detention pond which has the capability of regulating flows into the wetland.

The project owner has a number of tools available at its disposal to significantly improve the functioning of Wetland E and every incentive to do so. For Condition BIO-19 to say that “there shall be no significant change in the duration or extent of wetland ponding” compared to pre-project conditions is unnecessarily restrictive and may prevent the management of the wetland in ways that could be beneficial.

Although CCGS has installed a rain gauge and also instrumentation to continuously measure the pond’s depth, this equipment has been in operation since November and by the time construction begins will have collected only a single season’s data. If this water year turns out to be atypical, the current Condition wording would prevent operating the wetland

at water levels, either higher or lower, even if different water levels were determined by the California Department of Fish and Game, who owns the conservation easement, to be beneficial. Similarly, the requirement for “no significant change in composition or cover of wetland vegetation” precludes any potential change that might be an improvement to the functioning of the wetland for wildlife habitat.

For these reasons, we propose minor modifications to the condition to allow changes in water levels and ponding and wetland vegetation if it is clearly determined that such changes could benefit the overall purpose of the wetland as biological resources habitat. We also request removal of the requirement for the CVWRQCB to review the annual monitoring plans. The functions and values of Wetland E are mainly in terms of wildlife habitat and review of annual monitoring reports by this agency, which does not currently have jurisdiction over the wetland, is unnecessary.

BIO-19 The project owner shall develop and implement a Wetland E Monitoring and Adaptive Management Plan (Plan). The plan must include monitoring methods, planting design, responsible parties, long-term management and maintenance requirements, contingency plan, and details on the funding source. The plan must be developed by the project owner in coordination with the CPM and CDFG, consistent with the stated purposes of the 1997 conservation easement on the property. The Plan will include all proposed habitat improvements and enhancement goals, objectives and performance standards developed by the applicant in coordination with CDFG (CH2MHILL 2010k). Detailed baseline maps which show the current species composition or cover of wetland vegetation as well as current extent of noxious weed cover as determined by standard vegetation sampling methods will be included in the Plan. Sampling methods would also be fully described in the Plan.

For the CPM to deem the enhancements successful:

1. The site will have 75 percent survivorship of planted coast live oak by year 5.
2. Surviving trees shall show leader growth for 2 out of the last 3 years of monitoring.
3. The site will have 75 percent survivorship of planted upland dune shrubs by year 5.
4. The native upland herbaceous species shall be established without reseeding for 2 out of the last 3 years of monitoring.
5. The site will not require watering or maintenance other than weed control after year 3.

6. The site shall not contain more than 5 percent invasive exotics (Cal-IPC rating High) after 5 years.

The project owner shall maintain wildlife habitat value and wildlife use of Wetland E.

For the CPM to deem this successful:

1. ~~There shall be no~~ **Any** significant change in the duration or extent of wetland ponding compared to pre-project conditions (see **SOIL&WATER-6** for details) **shall be changes that are beneficial in terms of the functions and values of Wetland E as biological resources habitat.**
2. ~~There shall be no~~ **Any** significant change in species composition or cover of wetland vegetation compared to pre-project conditions (based upon standard vegetation sampling techniques) **shall be changes that are beneficial in terms of the functions and values of Wetland E as biological resources habitat.**
3. Annual monitoring reports will be submitted for years 1, 2, 3, 4, and 5, with the first year beginning one year after the habitat improvements are implemented. If habitat improvements are not deemed successful after 5 years, the project owner would propose adaptive management measures developed in coordination with CPM and CDFG to meet required goals, objectives and performance standards.

Verification: At least 60 days prior to the start of any construction-related ground disturbance the project owner shall submit a Draft Wetland E Monitoring and Adaptive Management Plan to the CPM, California Department of Fish and Game (CDFG), ~~and the Central Valley RWQCB (CV RWQCB).~~ The CPM in consultation with CDFG ~~and the CV RWQCB,~~ will determine the plan's acceptability. At least 15 days prior to the start of any construction-related ground disturbance, the project owner shall provide the CPM with the final version of the Wetland E Monitoring and Adaptive Management Plan that has been reviewed and approved by the CPM, in consultation with CDFG ~~and the CV RWQCB.~~ All modifications to the Wetland E Monitoring and Adaptive Management Plan shall be made only after approval from the CPM, in consultation with CDFG ~~and the CV RWQCB.~~

Habitat improvements shall be initiated no later than 12 months from the start of construction. Within 30 days after completion of project construction, the project owner shall provide to the CPM for review and approval a report identifying which items of the Wetland E Monitoring and Adaptive Management Plan have been completed.

The project owner shall submit annual reports to the CPM, ~~and~~ CDFG, ~~and the CV RWQCB~~ describing planting, monitoring, and maintenance activities implemented as well as documentation of compliance with all goals, objectives and performance standards in the Wetland E Monitoring and Adaptive Management Plan. The reports shall fully describe the status of the habitat improvement at the Wetland E conservation area, and shall describe any adaptive management methods implemented. Annual monitoring reports will be submitted to the CPM for review and approval and to CDFG ~~and CV RWQCB~~ for

review and comment for years 1, 2, 3, 4, and 5, with the first year beginning one year after the habitat improvements are implemented. The annual report for years 1, 2, 3, 4, and 5 shall be submitted within 30 days after the anniversary date of the commencement of habitat improvements. If after 5 years, habitat improvements are not deemed successful, the project owner would develop adaptive management measures in coordination with CPM and CDFG to meet required goals, objectives, and performance standards. Annual monitoring reports shall be submitted to the CPM for review and approval and to the CDFG and CVRWQCB for review and comment annually within 30 days of the anniversary date of the commencement of habitat improvements for the life of the project.

The conditions of certification will ensure that the OGS will comply with all applicable laws, ordinances, regulations and standards (LORS) and will not result in significant impacts to biological resources.

TAKE AUTHORIZATION

CCGS LLC has entered into a Participating Special Entity Agreement with the East Contra Costa County Habitat Conservancy (Conservancy). The Conservancy has prepared a Habitat Conservation Plan (HCP) which outlines criteria for development including mitigation and impact avoidance measures. The HCP was approved by the California Department of Fish and Game and the United States Fish and Wildlife Service ultimately allowing the Conservancy to obtain state and federal take authorization for certain listed species identified in the HCP. Normally a developer within the geographic area covered by the HCP would simply file an application with the Conservancy, implement the mitigation identified in the HCP and pay the appropriate fees to obtain extension of the state and federal take authorizations to the development activities. For the OGS, since a small portion of the transmission line is within the City of Antioch jurisdiction and the City of Antioch is not a party to the HCP, coverage for the OGS development is accomplished by entering the PSE Agreement as specifically authorized by the HCP.

The PSE is scheduled for adoption by the Conservancy Board at its next meeting on March 21, 2011. All mitigation required by the HCP is incorporated into the FSA Conditions of Certification.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Cultural Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
CULTURAL RESOURCES
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Cultural Resources associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Cultural Resources section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.3, and Appendix 5.3.

Exhibit 2 **Contra Costa Generating Station, LLC's Data Adequacy Supplement**; dated August, 2009, and docketed on August 20, 2009, Responses 9 through 11.

- Exhibit 11 **Contra Costa Generating Station, LLC's Response to CEC Staff Data Requests #44-67**; dated March, 2010, and docketed on March 9, 2010, Responses 44 through 46.
- Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Cultural Resources Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification the construction and operation of the OGS will comply with all applicable Cultural Resources-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Hazardous Materials for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
HAZARDOUS MATERIALS
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Hazardous Materials associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Hazardous Materials section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.5, and Appendix 5.5.

Exhibit 30 **Contra Costa Generating Station, LLC's Technical Memorandum – Oakley Generating Station Off-site Consequence Analysis**; dated August 25, 2010, and docketed on September 3, 2010.

- Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Hazardous Materials Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification construction and operation of the OGS will comply with all applicable Hazardous Materials-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Land Use for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
LAND USE
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Land Use associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Land Use section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.6, and Appendix 5.6.

Exhibit 10 **Contra Costa Generating Station, LLC's Response to the Oakley Generating Station Project Data Request Set 1 (#1-43)**; dated February, 2010, and docketed on February 11, 2010, Responses 35 through 39.

- Exhibit 21 **City of Oakley Review and Approval of the Landscape Plan and Screen Tree Plan for the Oakley Generating Station Project**; dated June 23, 2010, and docketed on June 29, 2010.
- Exhibit 23 **Contra Costa Generating Station, LLC's Supplemental Information Item (SII) #1 – Topographic Survey Map, Oakley Generating Station**; dated March 4, 2009, and docketed on July 21, 2010.
- Exhibit 24 **Contra Costa Generating Station, LLC's Supplemental Information Item (SII) #2 – Oakley Generating Station Landscape Plan, Revised 6-24-10**; dated June 24, 2010, and docketed on July 21, 2010.
- Exhibit 27 **Contra Costa Generating Station, LLC's Internal E-mail regarding an Updated Landscape Plan**; dated July 9, 2010, and docketed on August 17, 2010.
- Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.
- Exhibit 44 **Contra Costa Generating Station, LLC's Assessor's Parcel Map for the Oakley Generating Station Site APN 037020019 and Contra Costa County Mapping Information Center view of APN 037020019**; dated January 3, 2011, and docketed on January 3, 2011.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 47 **Contra Costa Generating Station, LLC's Recorded Lot Line Adjustment**; dated May 12/13, 2009, Recorded on October 5, 2009, and docketed on January 27, 2011.

Exhibit 48 **City of Oakley Response to Preliminary Staff Assessment Parts A and B, and Department of Fish and Game's Conservation Easement**; dated February 2, 2011, and docketed on February 3, 2011.

Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Land Use Section of the Final Staff Assessment. Construction and operation of the OGS will comply with all applicable Land Use-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

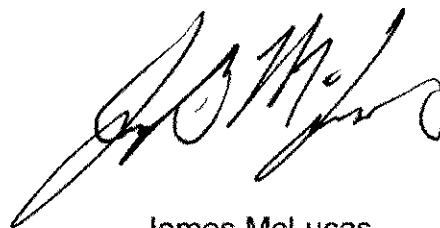
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Noise and Vibration for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'J. McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
NOISE AND VIBRATION
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Noise and Vibration of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Noise and Vibration section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.7, and Appendix 5.7.

Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.

- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.
- Exhibit 54 **Contra Costa Generating Station, LLC's Supplemental Noise Information**; dated February 22, 2011, and docketed on February 22, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Noise and Vibration Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification the construction and operation of the OGS will comply with all applicable Noise and Vibration-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Public Health for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
PUBLIC HEALTH
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Public Health associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Public Health section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.9.

Exhibit 12 **Contra Costa Generating Station, LLC's Supplemental Filing for Air Quality & Public Health Revised April 2010**; dated April, 2010, and docketed on April 7, 2010.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Public Health Section of the Final Staff Assessment. With incorporation of those the Conditions of Certification, the OGS will comply with all applicable Public Health-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Socioeconomics for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
SOCIOECONOMICS
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Socioeconomics associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Socioeconomic section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.10, and Appendix 5.10.

Exhibit 34 **City of Oakley Letter to Radback Energy enclosing Oakley Generating Station Cooperation and Community Benefits Agreement**; dated April 7, 2010, and docketed on October 20, 2010.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Socioeconomic Section of the Final Staff Assessment. With incorporation of those the Conditions of Certification, the OGS will comply with all applicable Socioeconomic-related laws, ordinances, regulations and standards and will not result in significant environmental impacts, including any disproportionate impact to a minority or low income population.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Soil & Water Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Soil & Water Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
SOIL AND WATER RESOURCES
OPENING TESTIMONY**

I. Name: James McLucas and Doug Davy

II. Purpose:

Our testimony addresses the subject of the Soil and Water Resources associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Soil and Water Resources section of the AFC, as well as the post-filing information, data request responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Soil and Water Resources section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data request responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, we are sponsoring the following exhibits in this proceeding.

- Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Sections 5.11 & 5.15, and Appendices 5.11 & 5.15.
- Exhibit 11 **Contra Costa Generating Station, LLC's Response to CEC Staff Data Requests #44-67**; dated March, 2010, and docketed on March 9, 2010, Responses 47 through 67.
- Exhibit 17 **Contra Costa Generating Station, LLC's Response to CEC Workshop Query #7**; dated August 7, 2009, and docketed on May 27, 2010.
- Exhibit 18 **Contra Costa Generating Station, LLC's Record of May 20, 2010 Conversation between CH2M Hill and California Department of Fish and Game regarding Wetland E Management Plan**; dated May 20, 2010, and docketed on June 7, 2010.
- Exhibit 19 **Contra Costa Generating Station, LLC's Wetland E Management Plan Updated June 2010**; dated June 18, 2010, and docketed on June 18, 2010.
- Exhibit 20 **Email from California Department of Fish and Game, dated June 21, 2010, regarding Wetland E Management Plan**; dated June 21, 2010, and docketed on June 21, 2010.
- Exhibit 22 **Contra Costa Generating Station, LLC's Response to CEC Staff Workshop Queries # 3-17**; dated July, 2010, and docketed on July 2, 2010, Responses 6 through 17.
- Exhibit 33 **Contra Costa Generating Station, LLC's Supplemental Information Item #4: Revised Stormwater Drainage Design**; dated September, 2010, and docketed on September 28, 2010.

- Exhibit 41 **Contra Costa Generating Station, LLC's Construction, Drainage, Erosion, and Sediment Control/Stormwater Pollution Prevention Plan**; dated November 2010, and docketed on November 19, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

We agree with much of the analysis, conclusions and Conditions of Certification contained in the Soil and Water Resources Section of the Final Staff Assessment (FSA) except:

- The assertion that the OGS will have significant impacts to water resources;
- The mitigation requirements contained in Conditions of Certification **SOIL&WATER-4,-8 and -9** relating to the use of recycled water and/or water conservation offsets; and
- The mitigation requirements for Wetland E contained in Condition of Certification **SOIL&WATER-6**.

THE OGS DOES NOT RESULT IN SIGNIFICANT WATER RESOURCES IMPACTS

CCGS LLC filed its Application for Certification for the OGS incorporating an Air-Cooled Condenser (dry cooling), thus reducing its water use by approximately 90 percent, compared with a wet-cooled plant. Due to the unavailability of recycled water and the appropriate waste discharge facilities to handle the discharge if the OGS used recycled water for cooling, recycled water was rejected as a cooling option.

Staff contends that the OGS's projected water use (less than 250 AFY) will result in impacts to other users in the region. Staff's entire analysis is based on speculation. Staff first cites State Water Resources Control Board Resolution 2010-0039 for the proposition that Delta flows will be increased in the future and then speculates that the way the SWRCB would accomplish this would be to restrict the distribution of water by local

water Districts. Specifically, Staff's speculative justification for predicting an impact is illustrated at Page 4.9-32 of the FSA;

As new Delta flow criteria or other regulatory means are adopted in the future to protect the environment within the Delta, CVP allocations are **likely to significantly decline** to levels at or below the allocation restrictions seen over the past 10 years. As CVP restrictions on water allocations to municipal, **industrial and agricultural become more frequent and significant due to pumping restrictions in the Delta**, Staff **believes** that other existing water users **may be impacted** by the proposed use of fresh water for OGS operations. **(Emphasis Added)**

Yet Staff admits that the very report they are relying on has no regulatory effect and, in fact, future actions, which may not include the cutbacks Staff predicts, will be determined by the SWRCB in future proceedings. FSA Page 4.9-32;

The SWRCB indicated that **the determinations in Resolution 2010-0039 do not have regulatory or adjudicatory effect** (SWRCB 2010). **When** the SWRCB develops Delta flow objectives with regulatory effect, it must ensure the reasonable protection of beneficial uses, which **may** entail balancing of competing beneficial uses of water, including municipal and industrial uses, agricultural uses, and other environmental uses (SWRCB 2010). **The SWRCB will evaluate the effect of any changes in flow objectives on the environment of the Delta**, the upgradient watersheds, and the areas where Delta water is used, as well as, an evaluation of economic impacts (SWRCB 2010). The SWRCB indicated that it **may amend** the terms and conditions of water right permits and licenses to impose further limitations on the diversion and use of water by water rights holders to protect the Delta or to meet water quality and flow objectives in Water Quality Control Plans it has adopted (SWRCB 2010). The SWRCB also indicated that it **may impose restrictions** in diversions by the CVP and SWP when the Department of Water Resources and US Bureau of Reclamation seek to change points of diversion for the CVP and SWP as part of a proposed peripheral canal (SWRCB 2010). **The report will also be used for development of the 'Delta Plan'**, also required in the Delta Reform Act, **which will identify** policies and actions responsible resource agencies must implement for improved

water supply reliability and protection of the Delta ecosystem. (**Emphasis Added**)

Staff further fails to consider any other method of water conservation such as the implementation of a wide-scale recycled water supply program, efficiency standards, low-flow toilet requirements; etc. which **may** also be just as likely. Staff's acknowledges CCGS LLC's commitment to dry cooling and to design the plant in such a way as to take recycled water as a replacement for its non-potable requirements if such a program becomes available and there is a suitable means for disposal of the associated wastewater. However, Staff fails to conclude that such commitment is beyond that required by law. Staff's mitigation is based on purely on speculative effects. Staff acknowledges its own speculation in its analysis of cumulative effects. At FSA pages 4.9-36 through 37 Staff states;

Since the project water supply would be provided by a water supply district in accordance with their approved allocations under an adopted regulatory framework, staff cannot find that there is a cumulative significant impact due to project water use. Staff notes that under the auspices of the Delta Reform Act of 2009, the 'Delta Plan' will have a primary purpose of meeting the coequal goals of providing a more reliable water supply and protecting, restoring, and enhancing the Delta ecosystem. This plan will identify policies and actions the agencies affecting resources in the Delta must take to achieve these goals including the SWRCB. In order to achieve these goals the SWRCB may reduce existing and future allocations of the Delta water supply. ***Without this plan and the necessary SWRCB decisions, staff cannot anticipate how cumulative impacts and the project water supply might be affected.*** (**Emphasis Added**)

If Staff cannot predict how the future actions may affect project water supply to identify potential cumulative impacts, how can it be so certain the same actions will cause the District to restrict water use to existing users resulting in a significant impact that can only be mitigated by forcing the OGS to either convert to recycled water within a time certain or to offset its water use? It simply cannot.

In a number of locations within the FSA, Staff appears to have exaggerated the impacts of OGS's water use. For instance, the paragraph beginning at the bottom of Page 4.9-30 reads:

The majority of DWD's supply is untreated water purchased from the Contra Costa Water District (CCWD) through the United States Bureau of Reclamation (USBR) Central Valley Project (CVP) which relies on the Sacramento-San Joaquin Delta (DWD, 2005). DWD also uses local groundwater to supply a portion (less than 20 percent) of its supply (DWD, 2005). DWD delivered about 5,250 acre-feet in 2004. Based on 2005 growth projections, DWD projected to deliver about **7,100 acre-feet in 2010 and 9,100 acre-feet in 2015** (DWD, 2005). OGS operational water usage would represent **3-5 percent** of DWD's total water deliveries. However, DWD's 2005 Urban Water Management Plan indicates that DWD is relying on increased water purchases of CVP water from CCWD to provide much of the additional supplies required to meet future demand including that of OGS. **(Emphasis Added)**

The OGS is projected to come online in 2013. Based on DWD's water use projections for 2010 and 2015, the OGS's peak use of 250 AFY would represent only 2.7 to 3.5 percent of DWD's total, not 3-5 percent.

A paragraph from the middle of Page 4.9-31 of the FSA reads:

For instance, in 2009, CCWD faced a 55 percent cut in their CVP allocation. To limit the impacts to their water users, CCWD met the allocation cuts through mandatory conservation measures and purchase additional supplies at a cost of four times normal rates. In response, DWD was forced to cut their use of CCWD water by 20 percent. DWD met this allocation cut by increasing groundwater pumping and through a 10 percent reduction in water use by their customers. ***If OGS adds an additional 5 percent to DWD's total water demand, DWD would need to increase the water supply cuts to other customers by 50 percent (to a total reduction of 15 percent), increase groundwater pumping by about 24 percent,*** or charge a premium to its existing customers who continue to utilize water at their historic rates to balance water supplies with demand during similar drought years. **(Emphasis Added)**

This is not true. Staff appears to be performing this analysis assuming that DWD would receive no additional CVP allocation were OGS to come online. The fact is that DWD would receive additional allocation from CCWD as necessary to cover the OGS demand. In the event of a drought, and a corresponding reduction in allocation of CCWD water to DWD, such reduction would be based on historical use. Thus, the percent

reduction would be near identical with or without OGS. Any reduction in allocation resulting from OGS would more appropriately be compared to OGS's demand as a percentage of all CVP and SWP allocations.

Our understanding, based on a conversation with Mike Yeraka (General Manager of DWD), is that CCWD has a CVP contract for ~~around~~ 195,000 AFY plus 5,700 AFY of ECCID Delta Water purchases , but currently uses only about ~~120,000~~ 110,000 AFY which includes 98,000 AFY in water sales and 12,000 AFY in conveyance losses (CCWD FY 2012 Budget p.13 and DWD 2005). We understand that the difference is available to CCWD and DWD customers on a first-come, first-served basis. Thus, whether OGS uses 250 AFY of this allocation or not, the allocation will eventually be used by other future residential, commercial, or industrial uses.

The following paragraph on Page 4.9-31, attempts to paint a bleak picture regarding the availability of CPV water for DWD:

The CVP has experienced frequent reductions in water allocations to water supply districts due to regulatory restrictions during drought periods. During periods of limited allocations, water users serviced by CVP contractors including DWD are required to limit their use of water. South of the Delta, agricultural users have had full allocations only one of the past ten years and have had their allocations cut by 25-60 percent in seven of the past ten years and cut by 90 percent in 2009. ***Urban users have only seen full allocations three of the past ten years and had their allocations cut by more than 20 percent in four of the past ten years. Water supplies derived from the CVP project are significantly limited. As new users take up a portion of the limited water available, the potential for shortages and limitations increases and other users would need to further limit water usage to make up for the additional supply requirements. (Emphasis Added)***

Rather than comparing actual CVP water supply allocations to contractual maximums, it would be more appropriate to look at the actual impacts historically experienced within DWD's service territory. According to Mike Yeraka, DWD has never had to suspend water flow to any of its customers during drought conditions due to overuse ~~mandate water use restrictions on its customers~~. During drought years, DWD has always been successful in reducing demands through the use of water conservation and economic incentives (e.g. tiered rates). The only years that DWD has needed to implement mandatory water conservation were in 1976/77, 1991 and 2009.

NO LORS REQUIRE THE OGS TO COMMIT TO USING RECYCLED WATER NOW

Staff cites the same arguments it has used for a very long time to require applicants to employ dry cooling. CCGS will use dry cooling for the OGS. Yet Staff now claims that the same LORS it has determined in a number of cases were satisfied by dry cooling without using recycled water for the remainder of water uses, prohibits the OGS from using non-recycled water. This is unsupported and Staff is incorrect on the law. Water Code Sections 13500 and 13552.6 require recycled water availability at the same cost as potable water. CCGS proposed a Condition of Certification memorializing its commitment to use recycled water in the future if the circumstances change making recycled water available at the same cost as potable water. Staff rejected this approach. It is reiterated here for the Committee to consider and we believe it embodies the objectives of the Water Code Sections cited by Staff. In fact, CCGS has gone one step further in offering that the Project Owner be responsible for up to ½ mile of recycled water and ½ mile of wastewater infrastructure necessary to make recycled water available to the OGS. We request the Committee reject and delete Staff's Conditions of Certification **SOIL&WATER-4, -8, and -9** and replace them with the following:

SOIL&WATER-4: Freshwater supplied by the potable connection with Diablo Water District (DWD) shall be used as the primary water supply for project operation for process, sanitary, and landscape irrigation purposes. Freshwater use shall not exceed the annual water-use limit of 250 acre-feet per year.

Following commencement of project operations and within eighteen (18) months of all of the following conditions being met and assuming the CEC approves a project amendment allowing the project to use recycled water and dispose of the associated high TDS wastewater, the primary water supply for project operations including all process and landscape irrigation shall be exclusively recycled water provided by Ironhouse Sanitary District (ISD):

- ISD has constructed a recycled water pipeline passing within 0.5 mile of the Oakley Generating Station and capable of delivering a minimum of 409 gpm of disinfected tertiary recycled water meeting Title 22 requirements to the Oakley Generating Station.

- ISD has constructed a high TDS wastewater pipeline passing within 0.5 mile of the Oakley Generating Station and capable of accepting a minimum of 200 gpm of wastewater having TDS and concentrations of individual constituents of up to four (4) times the TDS and concentrations of individual constituents of the recycled water supplied to the Oakley Generating Station.
- ISD has acquired the necessary easements/rights of way to extend the recycled water and high TDS wastewater pipelines to the Oakley Generating Station.
- ISD has established rates and charges for recycled water that are and will remain no greater than those of Diablo Water District for potable water.
- ISD has established rates and charges for the discharge of high TDS wastewater that are and will remain no greater than those of ISD for discharge of sanitary wastewater.
- ISD will charge no additional fees for connection to the recycled water and high TDS discharge pipelines beyond those fees paid by the project for the initial connection to the ISD sanitary sewer system.
- DWD has agreed to waive any claims regarding duplication of service with respect to the use of recycled water at the Oakley Generating Station.

Use of recycled water shall be limited to 280 acre-feet per year (or as determined in review of the project amendment). After the project switches to the primary recycled water supply, the backup water supply for project operation for process and landscape irrigation shall be freshwater provided by the potable connection with DWD. The use of freshwater from DWD for these purposes shall be limited to 25 acre-feet per year. The Project owner shall notify the CPM of any disruptions in the primary recycled water supply exceeding 24 hours. For any planned disruptions in the primary recycled water supply that will exceed 7 days, the Project owner shall obtain

CPM approval on a water supply disruption plan that outlines the reasons and duration for the planned disruption, and the volume of secondary water that will be utilized during the planned disruption. Sanitary water shall be supplied by the potable connection with DWD. Use of groundwater other than that provided by DWD as a part of their supply is prohibited for operational uses.

Prior to using potable and recycled water for construction or operational uses, the project owner shall install and maintain metering devices as part of the water supply and distribution systems to monitor and record, in gallons per day, the total volume(s) of water supplied to OGS from DWD and ISD. Those metering devices shall be operational for the life of the project.

The project owner shall monitor and record the total water used on a monthly basis including recycled water from ISD and potable water from DWD. For calculating the annual water use, the term "year" will correspond to the date established for the annual compliance report (ACR) submittal. For the first year of operation, the project owner shall prepare an annual Water Use Summary, which will include the monthly range and monthly average of daily potable and recycled water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. For subsequent years, the annual Water Use Summary shall also include the yearly range and yearly average water use by the project. The annual Water Use Summary shall be submitted to the CPM as part of the ACR.

Verification: At least sixty (60) days prior to commercial operation of OGS, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the water supply and distribution systems. When the metering devices are serviced, tested and calibrated, the project owner shall provide a report summarizing these activities in the next annual compliance report. The project owner, in the annual compliance report, shall provide a Water Use Summary that states the source and quantity of potable and recycled water used on a monthly basis and on an annual basis in units of acre-feet. Prior annual water use including yearly range and yearly average shall be reported in subsequent annual compliance reports (ACR).

Once recycled water is being used as the primary supply for process and landscaping uses, the CPM shall verify that any planned disruptions in the recycled water supply are short in duration and do not result in total fresh water for process and landscaping uses exceeding the 25 AFY limit. In the ACR, the project owner shall provide a discussion of any disruptions in the primary recycled water supply exceeding 24 hours including the cause of the disruption and all efforts to address the disruption.

CONDITION OF CERTIFICATION SOIL&WATER-6

For the reasons outlined in the Biological Resources Opening Testimony of Doug Davy and Richard Crowe, we recommend Condition of Certification **SOIL&WATER-6** be eliminated as unnecessary with the incorporation of our recommended modifications to Condition of Certification **BIO-19**.

With the incorporation of the conditions of certification as modified herein, we believe construction and operation of the OGS will comply with all applicable laws, ordinances, regulations and standards and will not result in significant water resources impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Traffic and Transportation for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
TRAFFIC AND TRANSPORTATION
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Traffic and Transportation associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Traffic and Transportation section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.12.

Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.

Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

Exhibit 52 **Email from City of Oakley to California Energy Commission (CEC) regarding Traffic and Transportations Clarifications**; dated February 16, 2011, and docketed on February 22, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Traffic and Transportation Section of the Final Staff Assessment. With incorporation of those the Conditions of Certification, the OGS will comply with all applicable Traffic and Transportation-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

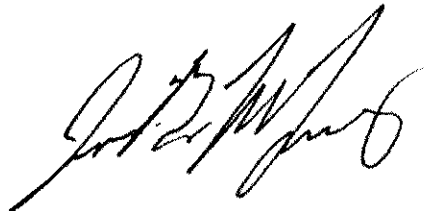
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Transmission Line Safety and Nuisance for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
TRANSMISSION LINE SAFETY AND NUISANCE
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Transmission Line Safety and Nuisance associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Transmission Line Safety and Nuisance section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II;** dated June 30, 2009, and docketed on June 30, 2009, Section 3.4.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Transmission Line Safety and Nuisance Section of the Final Staff Assessment. With the incorporation of those Conditions of

Certification the construction and operation of the OGS will comply with all applicable Transmission Line Safety and Nuisance-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Visual Resources for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
VISUAL RESOURCES
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Visual Resources associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Visual Resources section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.13.

Exhibit 21 **City of Oakley Review and Approval of the Landscape Plan and Screen Tree Plan for the Oakley Generating Station Project**; dated June 23, 2010, and docketed on June 29, 2010.

- Exhibit 24 **Contra Costa Generating Station, LLC's Supplemental Information Item (SII) #2 – Oakley Generating Station Landscape Plan, Revised 6-24-10**; dated June 24, 2010, and docketed on July 21, 2010.
- Exhibit 27 **Contra Costa Generating Station, LLC's Internal E-mail regarding an Updated Landscape Plan**; dated July 9, 2010, and docketed on August 17, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Visual Resources Section of the Final Staff Assessment. With incorporation of those the Conditions of Certification, the OGS will comply with all applicable Visual Resources -related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Waste Management for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
WASTE MANAGEMENT
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Waste Management associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Waste Management section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 5.14, and Appendix 5.14.

Exhibit 2 **Contra Costa Generating Station, LLC's Data Adequacy Supplement**; dated August, 2009, and docketed on August 20, 2009, Response 12.

- Exhibit 8 **URS/Dames & Moore (Frederick Quivik, Ph.D.)
Determination of Eligibility**; dated October 18, 2000, and
docketed on December 15, 2009.
- Exhibit 13 **Contra Costa Generating Station, LLC's Phase 1
Environmental Site Assessment – Transmission Line
Corridor**; dated March, 2010, and docketed on April 7, 2010.
- Exhibit 14 **Contra Costa Generating Station, LLC's DuPont Property
Due Diligence Summary Report (Purchase and Sale
Agreement between Contra Costa Generating Station,
LLC (CCGS) and Pacific Gas and Electric Company
(PG&E)**; dated January 15, 2010, and docketed on April 29,
2010.
- Exhibit 40 **Contra Costa Generating Station, LLC's Email from
CH2MHill to the CEC Regarding Annual Solid Waste
Generated During Operation**; dated November 9, 2010, and
docketed on November 9, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments
on the Preliminary Staff Assessment**; dated January 28,
2011, and docketed on January 28, 2011.
- Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments
on the Preliminary Staff Assessment**; dated February 11,
2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Waste Management Section of the Final Staff Assessment. With incorporation of those the Conditions of Certification, the OGS will comply with all applicable Waste Management-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

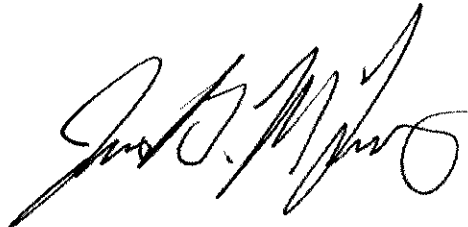
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Worker Safety for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', with a stylized, cursive script.

James McLucas

**OAKLEY GENERATING STATION PROJECT
WORKER SAFETY AND FIRE PROTECTION
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Worker Safety and Fire Protection associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Worker Safety and Fire Protection section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II;** dated June 30, 2009, and docketed on June 30, 2009, Section 5.16.

Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.

Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Worker Safety and Fire Protection Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification the construction and operation of the OGS will comply with all applicable Worker Safety and Fire Protection-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

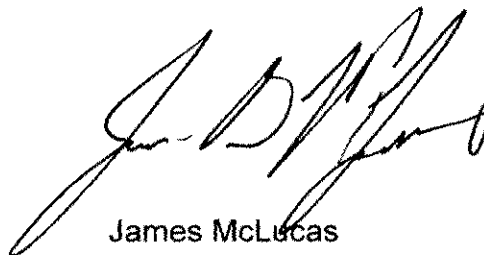
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Facility Design for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over the printed name.

James McLucas

**OAKLEY GENERATING STATION PROJECT
FACILITY DESIGN
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Facility Design of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Facility Design section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 2.1.

Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Facility Design Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification the construction and operation of the OGS will comply with all applicable Facility Design-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Geology and Paleontology for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
GEOLOGY AND PALEONTOLOGY
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Geology and Paleontology associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Geology and Paleontology section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Sections 5.4 & 5.8.

Exhibit 32 **Contra Costa Generating Station, LLC's Supplemental Information Item #3: Sanitary Sewer Force Main**; dated September, 2010, and docketed September 21, 2010.

Exhibit 10

Contra Costa Generating Station, LLC's Response to the Oakley Generating Station Project Data Request Set 1 (#1-43); dated February, 2010, and docketed on February 11, 2010, Responses 34 & 40.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Cultural Resources Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification construction and operation of the OGS will comply with all applicable Cultural Resources-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

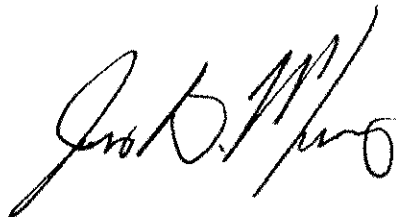
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Power Plant Efficiency for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.



James McLucas

**OAKLEY GENERATING STATION PROJECT
POWER PLANT EFFICIENCY
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Power Plant Efficiency of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Power Plant Efficiency section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 2.6.

V. Opinion and Conclusions

I agree with the analysis and conclusions contained in the Power Plant Efficiency Section of the Final Staff Assessment and believe the OGS will be highly efficient generation source.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Power Plant Reliability for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
POWER PLANT RELIABILITY
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Reliability of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Power Plant Reliability section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 2.5.

Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.

**Contra Costa Generating Station, LLC's Final Comments
on the Preliminary Staff Assessment;** dated February 11,
2011, and docketed on February 11, 2011.

V. Opinion and Conclusions

I agree with the analysis and conclusions contained in the Power Plant Reliability Section of the Final Staff Assessment and believe the OGS will be highly reliable generation source.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

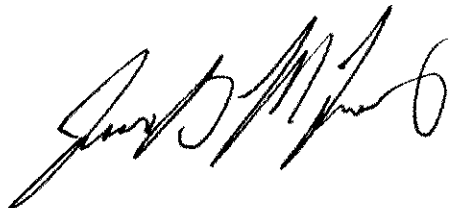
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Transmission System Engineering for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', with a stylized flourish at the end.

James McLucas

**OAKLEY GENERATING STATION PROJECT
TRANSMISSION SYSTEM ENGINEERING
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the Transmission System Engineering associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the Transmission System Engineering section of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II;** dated June 30, 2009, and docketed on June 30, 2009, Section 3.0, and Appendix 3.0.

- Exhibit 2 **Contra Costa Generating Station, LLC's Data Adequacy Supplement**; dated August, 2009, and docketed on August 20, 2009, Responses 2 & 3.
- Exhibit 9 **Contra Costa Generating Station, LLC's Response to the Oakley Generating Project Data Request Set 1 (#1-43)**; dated February, 2010, and docketed on February 11, 2010.
- Exhibit 10 **Contra Costa Generating Station, LLC's Response to the Oakley Generating Station Project Data Request Set 1 (#1-43)**; dated February, 2010, and docketed on February 11, 2010, Responses 41 through 43.
- Exhibit 22 **Contra Costa Generating Station, LLC's Response to CEC Staff Workshop Queries # 3-17**; dated July, 2010, and docketed on July 2, 2010, Response 5.
- Exhibit 28 **Contra Costa Generating Station, LLC's Transition Cluster Phase II Interconnection Study Report**; dated July 30, 2010, and docketed on August 17, 2010.
- Exhibit 38 **Contra Costa Generating Station, LLC's Transition Cluster Phase II Interconnection Study Report**; dated September 22, 2010, and docketed on November 5, 2010.
- Exhibit 43 **Contra Costa Generating Station, LLC's Appendix A – Revision 2 – Transition Cluster Phase II Interconnection Study Report**; dated November 18, 2010, and docketed December 20, 2010.
- Exhibit 46 **Contra Costa Generating Station, LLC's Initial Comments on the Preliminary Staff Assessment**; dated January 28, 2011, and docketed on January 28, 2011.

Exhibit 50 **Contra Costa Generating Station, LLC's Final Comments on the Preliminary Staff Assessment**; dated February 11, 2011, and docketed on February 11, 2011.

Exhibit 51 **Contra Costa Generating Station, LLC's Transmission Line Reconductoring Analysis (Response to Data Request 74)**; Dated February 2011, and docketed on February 17, 2011.

V. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the Transmission System Engineering Section of the Final Staff Assessment. With the incorporation of those Conditions of Certification the construction and operation of the OGS will comply with all applicable Transmission System Engineering-related laws, ordinances, regulations and standards and will not result in significant environmental impacts.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

DOCKET NO. 09-AFC-4

DECLARATION OF
Douglas Davy

I, Doug Davy, declare as follows:

1. I am presently employed by CH2M Hill, as a Program Manager
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to Alternatives for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Sacramento, CA on March 4, 2011.



Douglas Davy

**OAKLEY GENERATING STATION PROJECT
ALTERNATIVES
OPENING TESTIMONY**

I. Name: Doug Davy

II. Purpose:

My testimony addresses the subject of the Alternatives associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

Doug Davy: I am presently employed at CH2M HILL and have been for the past 7 years and am presently a Program Manager with that organization. I have a PhD in Archaeology and I have over 24 years of experience in the field of regulatory compliance and project management support for infrastructure development projects. The Alternatives section of the AFC was prepared under my direction as AFC project manager, as were post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume.

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

IV. Exhibits

In addition to this written testimony, I am sponsoring the following exhibits in this proceeding.

Exhibit 1 **Contra Costa Generating Station, LLC's Application for Certification (AFC) Volumes I & II**; dated June 30, 2009, and docketed on June 30, 2009, Section 6.0.

V. Opinion and Conclusions

I agree with the analysis and conclusions contained in the Alternatives Section of the Final Staff Assessment and believe the proposed project is the environmentally superior alternative.

STATE OF CALIFORNIA

Energy Resources
Conservation and Development Commission

In the Matter of:

Application For Certification for the
OAKLEY GENERATION STATION
PROJECT

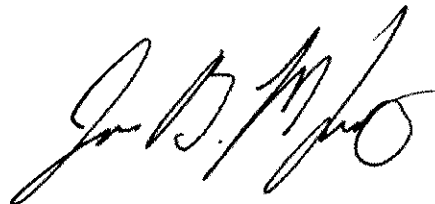
DOCKET NO. 09-AFC-4

DECLARATION OF
James McLucas

I, James McLucas, declare as follows:

1. I am presently employed by Radback Energy, Inc. as a Senior Vice President.
2. A copy of my professional qualifications and experience is included herewith (Attachment A to Testimony) and is incorporated by reference in this Declaration.
3. I prepared the attached testimony relating to General Conditions and Compliance for the Oakley Generating Station (California Energy Commission Docket Number 09-AFC-4).
4. It is my professional opinion that the attached prepared testimony is valid and accurate with respect to issues that it addresses.
5. I am personally familiar with the facts and conclusions related in the attached prepared testimony and if called as a witness could testify competently thereto.

I declare under penalty of perjury, under the laws of the State of California, that the foregoing is true and correct to the best of my knowledge and that this declaration was executed at Danville, CA on March 4, 2011.

A handwritten signature in black ink, appearing to read 'James McLucas', is written over a horizontal line.

James McLucas

**OAKLEY GENERATING STATION PROJECT
GENERAL CONDITIONS AND COMPLIANCE
OPENING TESTIMONY**

I. Name: James McLucas

II. Purpose:

My testimony addresses the subject of the General Conditions and Compliance associated with the construction and operation of the Oakley Generating Station Project (OGS), Docket 09-AFC-4.

III. Qualifications:

James McLucas: I am presently employed at Radback Energy, Inc. as the Senior Vice President, Engineering and have been for the past 3-1/2 years. I have a Degree in Mechanical Engineering and I have 29 years of experience in the development, engineering and construction of energy projects including solar, wind, cogeneration, and gas-fired combined cycle technologies and also water and wastewater treatment projects. I supervised and assisted in the preparation of the AFC, as well as the post-filing information, data responses, and supplemental filings. A detailed description of my qualifications is contained in the attached resume

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

IV. Opinion and Conclusions

I agree with the analysis, conclusions and Conditions of Certification contained in the General Conditions and Compliance Section of the Final Staff Assessment.



**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV**

**APPLICATION FOR CERTIFICATION
FOR THE *OAKLEY GENERATING STATION***

**Docket No. 09-AFC-4
PROOF OF SERVICE
(Revised 3/3/2011)**

APPLICANT

Greg Lamberg, Sr. Vice President
RADBACK ENERGY
145 Town & Country Drive, #107
Danville, CA 94526
Greg.Lamberg@Radback.com

APPLICANT'S CONSULTANTS

Douglas Davy
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Sacramento, CA 95833
ddavy@ch2m.com

COUNSEL FOR APPLICANT

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sgalati@gb-llp.com
mmills@gb-llp.com

INTERESTED AGENCIES

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e-recipient@caiso.com

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State Water Project Power and
Risk Office
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ENERGY COMMISSION

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Chair and Associate Member
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Hearing Officer
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Pierre Martinez
Siting Project Manager
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Kevin W. Bell
Staff Counsel
kwbell@energy.state.ca.us

Jennifer Jennings
Public Adviser
E-mail preferred
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Marie Mills, declare that on March 04, 2011, I served and filed copies of the attached **CONTRA COSTA GENERATING STATION, LLC'S OPENING TESTIMONY**, dated March 04, 2011. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:

[\[http://www.energy.ca.gov/sitingcases/contracosta/index.html\]](http://www.energy.ca.gov/sitingcases/contracosta/index.html). The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

- ☒ sent electronically to all email addresses on the Proof of Service list;
☐ by personal delivery;
☒ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

- ☒ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

- ☐ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 09-AFC-4
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.



Marie Mills

Attachment A

Resumes

Richard E Crowe

Senior Environmental Technician/CH2M HILL

Mr. Crowe is an experienced field biologist with fourteen years of experience including specific expertise with special-status species surveys, wetland delineations, permitting, and construction management in the Central Valley. He is experienced in working within NEPA and CEQA guidelines and have conducted technical studies in support of numerous AFC's, EIR, NES, Initial Studies, and other environmental documents.

Education

B.S. – Wildlife Biology/Forestry in progress.

Professional Registrations

Endangered Species Act Section 10 Scientific Take Permit for Vernal Pool Invertebrates

California Department of Fish and Game Scientific Collector's Permit

Distinguishing Qualifications

- Over Fourteen years experience working in Central Valley ecosystems
- Extensive experience in conducting pre-construction surveys and construction monitoring
- Extensive experienced with monitoring horizontal directional drilling projects, monitored 53 horizontal directional drills to date
- Experienced and trained wetland delineator
- Experienced with vernal pool invertebrates
- Recognized by the California Department of Fish and Game as qualified to conduct surveys for sensitive raptors throughout San Joaquin and Sacramento counties
- Experienced with NEPA and CEQA guidelines
- Experienced with preparing a variety of environmental permits and documents

Selected Project Experience

Lodi Energy Center, Northern California Power Authority (NCPA), San Joaquin County, CA.

Biologist in charge of endangered/threatened species and nesting bird surveys in support of mitigating project impacts through the San Joaquin County Habitat Conservation Program. Worked directly with California Energy Commission (CEC) staff on mitigating project impacts and with wording of the CEC Preliminary Staff Assessment and Final Staff Assessment. Currently CEC Designated Biologist for construction and operation of a 296-megawatt combined cycle power plant. Currently performing all duties associated with biological compliance and construction monitoring, as well as submitting Monthly Compliance Reports documenting compliance to the California Energy Commission.

Los Medanos Energy Center to Dow Pittsburg Transmission Line Project, Contra Costa County, CA. Designated Biologist for construction of transmission line project. Performed all duties associated with biological compliance and construction monitoring, submitted Monthly Compliance Reports (MCR's) documenting compliance to California Energy Commission.

Colusa Generating Station, PG&E, Colusa County, CA. Designated Biologist for construction and operation of a 660-megawatt combined-cycle power plant. Performed all duties associated with biological compliance and construction monitoring, submitted MCR's documenting compliance to the California Energy Commission.

Humboldt Generating Station, PG&E, Humboldt County, CA. Co-Designated Biologist for construction and operation of a 660-megawatt combined-cycle power plant. Performed all duties associated with biological compliance and coordinated Biological Monitoring with on-site Biological Monitor.

Gateway Generating Station, PG&E, Contra Costa County, CA. Biological Monitor for construction of 660-megawatt combined-cycle power plant. Performed all duties associated with biological compliance and construction monitoring, submitted Monthly Compliance Reports (MCR's) documenting compliance to California Energy Commission (CEC).

Praxair Hydrogen Pipeline Project, Contra Costa County, CA. Lead field biologist in support of permitting and Biological Resources Evaluation for a 21.5 mile, 12-inch diameter hydrogen gas pipeline and associated natural gas. Conducted wetland delineation, special status species surveys, extensive tree inventory, and assisted in rare plant and botanical surveys.

Roseville Electric, Roseville Electric Park, Roseville CA. Biological monitor for ongoing construction of a 125 mega-watt power plant. Conducted all forms of biological monitoring on power plant and associated linear facilities. Storm Water Pollution Prevention Plan inspector for City of Roseville on Roseville Electric Park project..

ARB, Inc., Concord to Sacramento Pipeline Project. Environmental Coordinator on 71-mile 20-inch petroleum products pipeline between Concord and Sacramento, California. Biologist responsible for environmental compliance and multi-agency liaison.

Roseville Electric, Reason Farms North Parcel, Placer County, CA. Conducted Jurisdictional Wetlands and Waters of the U.S. on 116 acre proposed mitigation parcel for future Roseville Energy Park.

Calpine Natural Gas Company, Rio Vista Pipeline Project. Biologist responsible for permitting, wetland delineating, threatened and endangered species surveys, biological monitoring, consultation with Fish and Wildlife Service and agency liaison. Project consisted of 11.5 mile 12" natural gas pipeline with an associated 1-mile horizontal directional drill beneath the Sacramento River.

Merced Irrigation District Foster Farms Transmission Line Project Supplemental EIR. Conducted biological studies for 25-mile transmission line in Stanislaus and Merced counties. Conducted wetland delineation using the ACOE 1987 methodology, mapped potential fairy shrimp habitat, and conducted site reconnaissance of potential substation and river crossing locations.

Wetland Delineation, Red Beach Training Area, Camp Pendleton, CA. Conducted wetland delineation on 1,122 acres of assorted plant communities within Camp Pendleton Marine Corps Base.

Calpine Corporation, Sutter Energy Center, Sutter County. Conducted 5 year Avian Collision Study on new Western Area Power Administration transmission lines from Sutter Energy Center to O'Banion Substation.

Modesto Irrigation District Utilities Project. Biologist responsible for construction monitoring and supervising crews during construction for protection of potential valley elderberry longhorn beetle habitat during transmission line upgrades and new substations in the vicinity of Ripon and Riverbank.

Calpine Sutter Power Plant Project. Field assistant for habitat mapping of Swainson's hawk, giant garter snake, and vernal pool fairy shrimp to determine potential construction impacts and the need for possible pre-construction surveys and monitoring during construction. Also assisted with wet-season vernal pool invertebrate sampling using USFWS approved protocols.

SMUD, Consumes Power Plant Project, Sacramento County. Conducted giant garter snake, burrowing owl, Valley Elderberry Longhorn Beetle surveys and consultation with Fish and Wildlife Service. Assisted with cultural studies on 26 +/- mile natural gas pipeline, studies included pedestrian transects, use of ground penetrating radar on selected areas, and sifting soil in 1-meter square points along right-of-way.

Obsidian Butte Pipeline Project, Salton Sea. Assisted with archeological pedestrian surveys for the Obsidian Butte pipeline project at the Salton Sea.

Calpine Corporation, Calpine Natural Gas Company, Sacramento and Solano Counties. On-call biologists for Calpine Natural Gas Company, duties include; Fish and Game, Army Corps permitting. And construction monitoring during construction.

Calpine Corporation, Delta Energy Center, Contra Costa County. Biological monitor for construction of a 880 mega-watt power plant. Conducted all forms of biological monitoring on power plant and associated linear facilities. Key contact with California Department of Fish and Game Wardens during all facets of construction.

1700-acre wetland delineation for the Army Corps of Engineers, Chico, California. Conducted wetland delineation on Rock Creek-Keefer Slough Flood Control Project.

Shotgun Creek Estates EIR. Field assistant for biological studies in support of EIR on proposed 1,600-acre residential subdivision in the Tuolumne County foothills. Assisted with 1994-95 USFWS protocol vernal pool invertebrate surveys in a 250-acre portion of the project site.

Camanche Greens EIR. Field technician for studies in support of Environmental Impact Report Biology Chapter for a proposed 514-acre residential and golf course subdivision in western Amador County. Assisted in wetland delineation using the ACOE 1987 methodology and conducted elderberry shrub inventory and inspection for the federally threatened valley elderberry longhorn beetle according to USFWS 1994 guidelines.

Army Corps of Engineers Phase 111 Levee Repairs at 284 individual work sites in San Joaquin and Stanislaus Counties. Developed and implemented a worker environmental awareness program. Conducted pre-construction surveys and photo-documentation, focused at ensuring contractor compliance with Endangered Species Act, Clean Water Act and Corps of Engineers Section 01130 environmental protection programs. Conducted photo-documentation of post-construction conditions at established photo-stations, and compiled all of the above documentation for submittal to the Corps.

Army Corps of Engineers Phase 111 Levee Repairs at 166 individual work sites in Sacramento, Solano, and Yolo Counties. Developed and implemented a worker environmental awareness program, with emphasis on identification of giant garter snake and its habitat. Conducted pre-construction surveys and photo-documentation, focused at ensuring contractor compliance with Endangered Species Act, Clean Water Act and Corps of Engineers Section 01130 environmental protection programs. Participated in field meetings at individual work sites with responsible agencies and their contractors to identify environmentally superior construction methods. Conducted photo-documentation of post-construction

conditions at established photo-stations, and compiled all of the above documentation for submittal to the Corps.

San Joaquin County Department of Public Works Roads and Bridges. Principal field biologist for all of San Joaquin Counties road maintenance projects, flood damaged road projects, flood damaged bridge projects and seismic retrofit projects. Duties include biological assessments of each site, Natural Environment Studies (NES) for federally funded sites and conducting database searches, evaluating biological resource impacts, developing mitigation measures as needed, and ensuring compliance with the Endangered Species Act and Clean Water Act on rapid turn-around public works projects.

Weston Ranch Bridge Project. Conducted intensive construction monitoring of an active Swainson's hawk nest for eight weeks during pile driving associated with construction of a new bridge. Documented hawk activity, monitored noise levels, and recorded construction activities. Upon completion, assisted in the preparation of a comprehensive monitoring report that was submitted to CDFG. Currently monitoring revegetation activities at the old bridge site as a requirement of the CDFG Streambed Alteration Agreement.

Central Valley Agriculture Facilitation. Conducted wetland determinations and formal wetland delineation's for numerous farmers in Merced, Stanislaus, San Joaquin, and Contra Costa counties; most of the projects involved conversion of grazing land to orchards and vineyards. The studies were conducted pursuant to both USDA Farm Bill and the Clean Water Act.

Kirkwood Ski Resort Biological Studies. Field assistant for biological studies for over 300 acres zoned for future land development activities in the Kirkwood community. Conducted wetland delineation using the ACOE 1987 methodology, processed field data, and prepared report for submittal to the ACOE. Conducted mountain yellow-legged frog surveys in all major waterways within the 300 acres project site.

Sutter Gold Venture Lincoln Project Access Road. Conducted inspection for the federally-threatened valley elderberry longhorn beetle or evidence of past inhabitation on an elderberry shrub located within the construction zone for a proposed access road to a gold processing plant.

Evaluation of Second-Growth Forest Treatments for Wildlife; USDA Forest Service, Clearwater Valley in Gifford Pinchot National Forest, WA. Field technician for conducting research to determine the effects of various silviculture modifications of second growth forest on wildlife. Fieldwork included, data collection for tree growth parameters, setting up and laying out research grids, and conducting wildlife observations.

Forest Stand Exams; USDA Forest Service, Deschutes National Forest; Oregon. Field crew leader for conducting intensive forest stand exams on 55,000 acres of the Deschutes National Forest. Responsible for data management and quality control of over 12,000 individual sample points, including forest measurements, forest disease evaluation, habitat evaluation, and sensitive plant and wildlife surveys. Assisted in coordination and organization of 20 crew members, including subcontractors, for field data collection and on-site daily planning.

Natural Resource Inventory for North Stockton Projects, CA. Field technician for biological studies in support of Environmental Impact Report for proposed 800-acre residential development in north Stockton. Assisted with 1994-95 USFWS protocol vernal pool invertebrate surveys in a 40-acre portion of the project site.

Calaveras Springs Special Plan Project Vernal Pool Invertebrates Surveys. Field assistant for biological studies for 150-acre commercial, industrial, and residential development project in Calaveras County. Conducted USFWS protocol vernal pool invertebrate surveys and assisted with field verification of previously delineated wetlands.

Ringtail Population Monitoring Project. Student research assistant for ringtail populations studies in Brockman Canyon, South Sutter Buttes, CA. Assisted with trapping, measuring, and tagging ringtails.

California Department of Transportation Beach Lake Mitigation Bank. Field assistant for full protocol giant garter snake surveys of Morrison Creek for I-5 overpass widening, construction of giant garter snake hibernacula, and installation and monitoring of artificial burrows for burrowing owls.

Specialized Training

- Wetland Delineation, Richard Chinn Environmental Training, Inc., 1998
- Fairy Shrimp Identification, Dr. Denton Belk, 1998
- OSHA, 40-hour Hazardous Materials Training, Network Environmental Systems
- First Aid and CPR Training, American Red Cross
- 10-Hour Construction Safety Awareness Training CH2M HILL
- Site Safety Coordinator Training, CH2M HILL
- Hydric Soils Workshop, Dr. J. Herbert Huddleston, Oregon State University

Memberships in Professional Organizations

- Burrowing Owl Consortium
- California Inland Invertebrate Working Group
- National Audubon Society
- Ducks Unlimited
- Stone Lakes National Wildlife Refuge Association
- Bat Conservation International
- California Waterfowl Association
- California Native Grass Association



Summary of Experience

Mr. Darvin has specialized in the meteorological aspects of air quality issues for the last sixteen years. He has extensive experience in air quality management, dispersion modeling, meteorological modeling, greenhouse gas emission inventories, monitoring, major source permitting, complex terrain model development and implementation, emission inventory and health risk assessments. His experience spans more than 25 different states and several countries.

He has been actively involved with recent PSD permits for many large-scale solid fuel and gaseous fuel projects across the United States. Mr. Darvin has performed the following in support of PSD applications for utilities: baseline air quality and air quality modeling analyses (including preparation and negotiation of the modeling protocol), prepared the PSD and air permit regulatory applicability analyses, managed the preparation of the air quality emissions inventory, and assisted with the Best Available Control Technology (BACT) evaluations.

Specific project experience includes emissions calculations, modeling of impacts, evaluation of regulatory applicability and compliance, New Source Review (NSR) and Prevention of Significant Deterioration (PSD) permitting, and minor source permitting. He has used and is thoroughly familiar with a number of air quality models, including AERMOD, ISC3, CALPUFF, CALMET, COMPLEX I AND II, IGM, FDM, RTDM, CTSCREEN, CTDMPPLUS, UAM, DEGADIS, SPILLS, VISCREEN, PLUVUEII, MESOPUFF, INPUFF, BLP, PAL, CAMEO, CALINE4, OCD5, RAM, TRACE, MM5, SLAB, and the Paris Airshed Model. These models have been used in scientific and development settings as well as in regulatory settings.

Education

M.S. Atmospheric Science, San Francisco State University, 1993

B.A. Physical Geography/Meteorology, University of California, Santa Barbara, 1985.

Select Project Experience

A representative selection of Mr. Darvin's projects is included below.

Western GeoPower ATC (June 2009-September 2009). Provided air dispersion modeling assessments for a 39 MW geothermal power plant, located in the Geysers area. Project modeling included normal and upset scenarios for H₂S impact analyses.

Caithness Blythe II AFC and PSD Permit Applications (June 2009-Present). Project manager and lead modeler for the preparation of the air quality permits for a 600 MW combined cycle power plant in Blythe, California. Project included Class I impact assessments, BACT and secondary impact assessments.



Select Project Experience (continued)

Calpine Geysers (Ongoing). Air quality modeling in support of ongoing permitting for both criteria pollutants and toxics. Performed wind field analyses in support of upgrading the Geysers Air Monitoring Program for use with AERMOD.

British Petroleum Carson Refinery AFC and PSD Permit Applications (2008-Present) Air Quality Project Manager and lead modeler for preparation of the permit applications for expansion of the refinery cogeneration facility. The project includes regulatory review, offset acquisition, Class I impact assessments, and BACT.

Mountainview Power Plant – SCE (2005 to Present). Project Manager for preparing an air quality permit modification related to commissioning activities and plant startup/shutdown. The project includes preparing a CEMS certification protocol, siting a meteorological tower, and ongoing compliance and regulatory consulting.

Roseville Electric Project AFC, City of Roseville, Ca. (January 2003 to Present). Air Quality Project Manager for air quality analysis related to a proposed new 200 MW natural gas fired power plant. Analysis included evaluation of CEQA, Class I impacts, visibility impacts, complex terrain, and cooling tower plume modeling.

Pico Power Project AFC, City of Santa Clara. (January 2002 to November 2004). Air Quality Project Manager and lead air quality modeler for permitting a 180 MW power plant in the City of Santa Clara, Ca. Prepared and negotiated air quality permit with BAAQMD and prepared air section(s) of AFC for the California Energy Commission.

Russell City Energy Center AFC, Calpine (January 1999 to November 2002, September 2006-Present). Air Quality Project Manager for obtaining PSD permit and AFC for a large natural gas fired power plant, located near Hayward, Ca. Project required detailed emission calculations, air quality modeling, combined impact assessments, BACT analysis and demonstration, Title IV compliance, and Title V compliance issues.

Metcalf Energy Center AFC, Calpine. (1998 to 2003) Lead air quality modeler for modeling a large natural gas fired power plant, located near San Jose, Ca. Project included CEQA, using refined modeling techniques to determine nitrogen deposition impacts, Class I analysis, and downwash analysis.

Otay Mesa Generating AFC, Calpine. (1999 to 2004). Lead Meteorologist for permitting a combined cycle power plant, located near San Diego, Ca. Project included Class I impacts, a nitrogen deposition impact assessment, and a downwash analysis in complex terrain. Modeling was used to prepare PSD permit application as well as the AFC application which was submitted to CEC.

CalEnergy Blackrock Geothermal Expansion (2007-Present). Lead Meteorologist for permitting three geothermal power plants in the Salton Sea area. Project was in support of a CEC license as well as local District Permits.



Select Project Experience (continued)

East Altamont Energy Center AFC (2000-2002) Lead Meteorologist for permitting large power plant, located near Tracy, Ca. Project included meteorological data set assessments, criteria pollutant and toxics impacts analysis, and construction impact modeling. Modeling was used to prepare PSD permit application as well as the AFC application for submittal to the CEC.

San Joaquin Energy Center AFC (2001-2002) Lead Meteorologist for permitting large power plant, located near the town of San Joaquin in the San Joaquin Valley. Project included preparing modeling assessments for toxics and criteria pollutants, meteorological data set assessments, construction impacts, and plume visibility assessments for the CEC and local air agency.

Prevention of Significant Deterioration (PSD) Permit Modification, Kettle Falls Generating Station, Avista Corporation, Kettle Falls Washington. Prepared a PSD application for modification to the Kettle Falls Generating Station, a wood-waste fired generating facility to address emission increases resulting from a capacity increase modification at the facility. Air quality modeling analyses were required to assess compliance with ambient air quality standards and PSD increments. A toxic air pollutant evaluation was also prepared.

PSD Permitting and EIS For 2000-MW Coal-Fired Power Plant, Sierra Pacific Resources, Nevada. Managed the preparation of a Prevention of Significant Deterioration (PSD) permit application for a 2000-megawatt coal-fired power plant in northeastern Nevada proposed by Sierra Pacific Resources. Evaluation of PSD increments involved extensive air quality modeling for regions with complex terrain. Detailed air quality analyses were performed to address complex issues including: long-range transport of pollutants and subsequent effects on acid deposition, effects of plant emissions on visibility in nearby and distant Class I areas, evaluation of pollutant buildup during stagnation conditions and its effect on visibility, dust emissions from the construction and operation of the power plant, and PSD increments. As part of the state's permitting requirements, an evaluation of air toxics was performed.

PSD Permitting for Rinker Materials Cement Kiln in Brooksville, Florida. Mr. Darwin performed the baseline air quality and air quality modeling analyses, prepared the PSD and air permit regulatory applicability analyses, managed the preparation of the air quality emissions inventory and assisted with the BACT evaluation. The project fuel sources included coal, oil, and natural gas.



Select Project Experience (continued)

Air Quality Permitting for an Ammonia/Urea Plant, Btu Nitrogen Company, Wallula, Washington. Prepared a Notice of Construction application for the proposed Btu Nitrogen Plant near Wallula, Washington which included a 600 ton per day ammonia plant and 1,000 ton per day urea fertilizer plant. The facility was to be located in a PM₁₀ nonattainment area. Air quality modeling was used to demonstrate compliance with PM₁₀ requirements and air quality standards for criteria and toxic air pollutants. Additionally, Best Available Control Technology analyses were prepared for both criteria and toxic air pollutants.

Power Generation Facility – 1250 MW Combined-Cycle, PSD Air Quality Permitting, Kootenai Generation LLC, Rathdrum, Idaho. Managed preparation of a PSD permit application for a proposed 1,250 MW gas-fired combined-cycle turbine power generation facility to be located in Rathdrum, Idaho. Evaluation of local and regional air quality impacts were assessed with the ISCST3 model and CTSCREEN model for impacts in complex terrain. Potential impacts on regional haze and acid deposition on distant federal Class I areas were evaluated with the CALPUFF modeling system. Other air quality evaluations required for the PSD permit application include evaluation of impacts from toxic air pollutants and evaluation of Best Available Control Technology (BACT).

Clean Fuels Refinery Modification, Chevron, Los Angeles, California. Lead air quality modeler for preparation of an Environmental Impact Report (EIR) and New Source Review permit for a large refinery modification in Los Angeles to support the Clean Fuels Program. Project also included toxic emissions calculations and preparation of a Health Risk Assessment.

Prevention of Significant Deterioration - Calpine Rocky Mountain Energy Center. Project manager for preparing PSD application for a 620 MW power plant, located near Hudson Colorado. Project required completion of a PSD permit application, air quality impact modeling analysis in both near and distant from the source, BACT demonstration, and assessment of Class I area impacts. Project was deemed complete by agency in less than 4 weeks.

Arctic Ocean Permitting, Arco Alaska. Task Leader and lead modeler for the first OCS permit ever submitted to the USEPA. Permit was for several off-shore oil exploration drilling platforms in the Arctic Ocean off Alaska. Project involved use of OCD to calculate impacts from exploratory drilling rig and support vessels. Impacts at ANWR were also assessed.



Select Project Experience (continued)

Mesoscale Complex Terrain Model Development, Italian Government and Alyeska. Developed a mesoscale complex terrain wind field model to determine impacts of topographically induced winds on a large man-made lake in the Italian Alps. This model has also been used to diagnose trajectories of potential oil spills in Alaskan waters.

Lead Dispersion and Deposition Study, ASARCO, Leadville, Colorado. Lead scientist for assessing potential deposition of lead from smelting operations over a 130-year period. Results of emissions calculations, modeling and deposition were used to develop a soil sampling program and subsequent cleanup criteria.

Douglas Davy, Ph.D.

Project Manager

Education

Ph.D., Archaeology
M.A., Anthropology
B.A., Anthropology

Relevant Experience

Dr. Davy has 24 years of experience providing regulatory compliance and project management support for infrastructure development projects. He has served as project manager for numerous environmental licensing and permitting projects, directing multidisciplinary teams of planners, engineers, and scientists in helping to resolve complex environmental regulatory issues.

Dr. Davy has served as project manager for 13 Applications for Certification (AFCs) before the California Energy Commission and has also worked on numerous NEPA and CEQA and local permitting projects for energy infrastructure development.

Representative Projects

- **Project Manager, Oakley Generation Station, Radback Energy, Incorporated, Oakley, California.** Project manager for AFC before the CEC for a 600-MW natural gas-fired power plant. Directed a multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests, and providing expert testimony. Participated in consultations with CEC staff and other regulatory agencies.
- **Project Manager, Rice Solar Energy Project Application for Certification, SolarReserve, LLC, Riverside County, CA.** Project Manager for 150 MW concentrating solar energy project featuring a mirror field of 17,500 heliostats, solar receiver tower, and integral thermal storage using a liquefied salt mixture. The project design includes a 1,410-acre project site, air-cooled condenser, steam turbine generator, hot and warm salt storage tanks, and 9.2-mile-long 230 kV transmission line. Directed multidisciplinary team of scientists and engineers in preparing license application and permitting documents for the California Energy Commission, Bureau of Land Management, Western Area Power Administration, US Fish and Wildlife Service, California Department of Fish and Game, and other agencies.
- **Project Manager, CPV Vaca Station, Competitive Power Ventures, Vacaville, California.** Project manager for AFC before the CEC for a 600-MW natural gas-fired power plant. Directed a multidisciplinary team of scientists and engineers in providing project development support and preparing application document, responding to data requests, and providing expert testimony. Participated in consultations with CEC staff and other regulatory agencies.

Douglas Davy, Ph.D.

- **Project Manager, Humboldt Bay Repowering Project AFC, Pacific Gas and Electric Company, Eureka, California.** Project manager for AFC before the CEC for the 163-MW natural gas-fired power plant using 10 Wärtsilä 18V50DF dual-fuel turbine-generators. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing.
- **Project Manager, Walnut Creek Energy Park and Sun Valley Energy Center AFCs, Edison Mission Energy, Los Angeles and Riverside Counties, California.** Project manager for AFCs before the CEC for two 500 MW natural gas-fired peaking power plants using GE Energy LMS100 technology. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing.
- **Project Manager, Inland Empire Energy Center, Calpine Corporation, Riverside County, California.** Project manager for AFC before the CEC for the 810-MW natural gas-fired power plant. Directed multidisciplinary team of scientists and engineers in preparing testimony for licensing. Managed preparation of license amendments, including conversion of the turbine technology to the GE Energy S107H System and for a rerouting of the natural gas pipeline. Coordinated consultations with CEC staff and other regulatory agencies.
- **Project Manager, Russell City Energy Center, Calpine/Bechtel Joint Development, Hayward, California.** Project manager for the preparation of an AFC before the CEC for a 600-MW natural gas-fired power plant and appurtenant facilities including natural gas, water supply, and electrical transmission lines. Prepared environmental assessment associated with reconductoring 14 miles of 230 kV transmission line. Project qualified for an expedited 6-month licensing process under the Governor's emergency power plant licensing executive order. Also served as project manager for an amendment to the project license involving movement of the project configuration.
- **Project Manager, Silver State Photovoltaic Power Projects, NextLight Renewable Energy, LLC, Clark County, NV.** Program Manager for 400 MW solar photovoltaic power plant project located in Clark County, Nevada. Prepared two Plans of Developments to support the Bureau of Land Management (BLM) Right-of-Way Applications for two projects (Silver State North and Silver State South) and developed environmental studies and permitting plans to support the BLM's National Environmental Policy Act (NEPA) compliance process for the project.
- **Project Manager, WaveConnect Projects, Pacific Gas and Electric Company, Eureka, California.** Project Manager for a 5 MW hydrokinetic pilot project located offshore of Eureka, Humboldt County California. Preparing a Hydrokinetic Pilot Project License Application before the Federal Energy Regulatory Commission for this project, one of the first proposed to convert the ocean's energy to electrical power in the world. Worked with a stakeholder and regulatory agency group numbering 50 persons to develop siting guidelines for the wave energy farm and onshore cable train, conducted environmental baseline studies and impact analyses, worked with numerous federal, state, and local agencies to prepare permit applications for this innovative project.

JIM MCLUCAS

CURRENT POSITION

Senior Vice President, Engineering for Radback Energy, a startup energy company focusing on the development of large-scale natural gas-fired and renewable energy projects throughout the Western United States.

EDUCATION

1977 - 1981 University of California Santa Barbara, California
B.S. Mechanical Engineering

- Graduated with High Honors
- Member, Tau Beta Pi and Pi Tau Sigma Honors Engineering Societies
- Recipient, President's Undergraduate Fellowship
- Recipient, University of California Appropriate Technology Grant

PROFESSIONAL REGISTRATION

Mechanical Engineer California, M23815

EXPERIENCE

2007 – Present Radback Energy Danville, California
Senior Vice President, Engineering

- Responsible for all engineering needs in the support of the development of energy projects, including cycle design and performance, site layouts, equipment procurement, transmission interconnection, gas supply, water supply, wastewater disposal, emissions, construction cost estimates, and scheduling.

2007 – Third Planet Windpower San Ramon, California
Director of Engineering

- Responsible for all technical aspects associated with wind energy development including wind resource analyses, wind turbine technical requirements, performance estimates, development support engineering, transmission, and wind farm design.

Senior Project Developer

- Responsible for the development of new large-scale wind projects including a 500 MW wind farm near Gladstone, NM.

2000 – 2007 Calpine Corporation Pittsburg, California
Manager of Water Technology and Chemical Operations

- Responsible for overseeing Calpine's water treatment specialists, providing operational assistance to plants nation-wide, supporting ongoing development efforts, and design and specification of new water and wastewater treatment systems, chemical storage and feed facilities, and water chemistry sampling

and monitoring systems for new construction.

Regional Engineering Manager

- Regional Engineering Manager in Calpine's Western Region office, responsible for engineering assistance to support the development and permitting of new power projects. Responsibilities included plant sizing, cycle configuration, site layouts, water balances, emissions calculations, interfacing with Calpine's thermal engineering, plant engineering, environmental, construction, asset management, finance, and operations groups, preparation of Applications for Certification, Environmental Impact Statements/Reports, written and verbal testimony to the CEC, technical interface with gas, electric, water, and wastewater utilities and state and local agencies, coordinating site geotechnical investigations and surveys, and preparation of project-specific plant design guidelines providing the basis for the detailed design.

Energy Experience

- Project engineer for the development of the Inland Empire Energy Center (IEEC), originally configured as a 670 MW 2x1 combined cycle power plant using General Electric (GE) 7FB combustion turbines. GE later purchased this project and the CEC license and air permit were amended to allow the IEEC to be GE's North American launch site for their state-of-the-art "H" technology combined cycled units. The project is now an 800 MW facility incorporating two of GE's "H" units. Responsibilities included development, engineering, and permitting support for both the original licensing and amendments, negotiation of eight contracts for the supply for potable water, raw water, and recycled water, and the disposal of sanitary and process wastewater. Performed engineering management, under services being provided by Calpine Power Services, for the design of the various project linear facilities, including those for potable water, raw water, recycled water, sanitary sewer, non-reclaimable wastewater, transmission, natural gas, and various road improvements.
- Project engineer for the development of Calpine's.
- Project engineer for the development of Calpine's Russell City Energy Center, a 620 MW 2x1 combined cycle power plant using Siemens Westinghouse 501FD combustion turbines, to be located in Hayward, California.
- Provided project engineering supporting the development of the following additional Calpine projects, which have not moved forward:
 - East Altamont Energy Center, a 3x1 1000 MW project located in eastern Alameda County
 - Moapa Paiute Energy Center, a 3x1 1000 MW project located northeast of Las Vegas, Nevada
 - Teayawa Energy Center, a 2x1 600 MW project located near Coachella, California
 - Turner Energy Center, a 2x1 620 MW project located in Turner, Oregon
- Under Calpine Power Services, functioned as the project engineer supporting the development and permitting of Turlock Irrigation District's Walnut Energy Center, a 250 MW 2x1 combined cycle power plant using GE 7EA combustion turbines. Duties during the construction of this facility included preparation of specifications and bid evaluations for cooling tower and boiler

chemical feed systems, water/steam sampling systems, and the zero-liquid discharge system.

- Under Calpine Power Services, functioned as the project engineer supporting the development and permitting of the City of Roseville's Roseville Energy Park, a 160 MW 2x1 combined cycle power plant using Alstom GTX 100 combustion turbines.

1988 – 2000 CH2M HILL

Oakland, California

1981 – 1985

Senior Project Manager

- Senior project manager, mechanical engineer, and project delivery coordinator in CH2M HILL's Water Business Group. Experience includes preliminary and detailed designs, preparation of specifications and drawings, equipment selection, system optimization, economic analyses, feasibility studies, computer analyses, cost estimating, value engineering, construction management, field inspection, permitting, and startup for water and wastewater treatment plants and energy projects for both industrial and municipal clients.

Water/Wastewater Experience

- Staff engineer overseeing the design of a Title 22 Recycled Water Facility (RWF) for Calpine Corporation. The RWF, located at Delta Diablo Sanitation District's wastewater treatment plant, provides recycled water for Calpine's Delta Energy Center and Los Medanos Energy Center, both located in Pittsburg, California. This facility was designed and constructed on a fast-track basis with major equipment pre-purchased, and multiple engineering and construction contracts. Responsibilities also included assistance with contract negotiations and coordination with the raw water and wastewater utilities.
- Project manager, lead mechanical engineer, and startup engineer for the Monterey Regional Water Pollution Control Agency's Salinas Valley Reclamation Project (SVRP), a 38.5-mgd Title 22 water reclamation plant, the effluent of which is used to irrigate unprocessed food crops. Constructed facilities include an influent pump station, coagulation/flocculation structure, dual media filters, chlorine contact basins, backwash equalization basin and clarifier, chemical building, chlorination building, reclaimed water storage pond, and reclaimed water distribution pipelines including two directionally drilled river crossings. Responsibilities also included managing SCADA system development and programming effort, preparation of portions of the plant operations manual, and training of the operations and maintenance personnel.
- Lead engineer on the design of Contra Costa Water District's Multipurpose Pipeline project involving a new 20-mile, 42-inch pipeline and pump station to convey treated water from the District's Randall Bold Water Treatment Plant to their treated water service area.
- Lead mechanical and I&C engineer for the preliminary design of ozonation facilities for five of EBMUD's filter plants. Responsibilities included development and preparation of purchase documents, including specifications and process and instrumentation diagrams (P&IDs) for ozone system equipment. Lead mechanical engineer during final design of ozonation facilities, chemical systems, and filtration improvements at two of the filter

plants. Field project engineer during the construction phase of these two projects, with technical responsibilities including submittal review, preparation of clarifications and change orders, startup and testing, SCADA system programming, preparation of the operations manual, and training.

- Project manager, lead mechanical, and startup engineer for the design and construction of the Paralta Well Ozone Treatment Project for the California-American Water Company in Seaside, California. The facility includes in-line injection of ozone for the oxidation of sulfide and chemical storage and feed systems for zinc orthophosphate and sodium hypochlorite.
- Other ozonation experience includes senior consultant roles on ozonation projects for Palm Beach County Water Utility Department's Water Treatment Plant 2W; the City of Valdosta, Georgia's, Water Treatment Plant; Tulsa, Oklahoma's, A.B. Jewell Water Treatment Plant, and peer review responsibilities for Contra Costa Water District's Bollman Water Treatment Plant ozonation project.
- Project manager for the design of the City of San Jose's 145-cfs Old Oakland Road Stormwater Pump Station. Responsibilities include the design of the new pump station and outfall, coordination with utilities, permitting (RWQCB, Corps of Engineers, California Department of Fish & Game, and SCVWD), and engineering services during bidding and construction.
- Project manager and lead mechanical engineer for the design of a Site Chemical and Industrial Waste System Upgrade project for IBM in San Jose, California, involving the design of new double-contained piping and leak detection systems for approximately 40,000 lineal feet of piping for industrial waste, heavy metal waste, scrubber waste, brine waste, and fuel oil piping systems to comply with Title 40 CFR regulations.
- Lead mechanical engineer for the design of dechlorination facilities at Hayward Marsh for Union Sanitary District. The dechlorination facilities include bulk chemical storage tanks, chemical metering equipment, secondary containment, and controls systems for injecting and mixing sodium bisulfite into the effluent for dechlorination purposes.
- Lead mechanical engineer for the design of a pump station and reservoir to provide potable water and fire protection water for the City of Redwood City. Responsibilities included a computer network analysis of the water distribution system.
- Project manager and lead mechanical engineer for the design of modifications at the San Jose/Santa Clara Water Pollution Control Plant to comply with the City of San Jose's Toxic Gas Ordinance. The modifications included new double-contained piping systems for the unloading and handling of chlorine and sulfur dioxide, leak detection equipment, a chlorine and sulfur dioxide scrubber system, and a PLC-based controls system for automated response to chlorine and sulfur dioxide leaks.

Energy Experience

- Staff mechanical engineer for the design of the 14.7-MW SEGS-1 Solar Electric Generating Station located in the Mojave Desert near Barstow, California. This project, designed for Atkinson Mechanical Contractors, included 560 parabolic solar collectors heating oil to 600 degrees F, which, in turn, was used to generate steam for the production of electricity through a simple cycle. Responsibilities included assisting in the preparation of the power block contract, design of various balance-of-plant systems, piping

stress analysis, and preparation of the plant operations manual.

- Project manager and lead mechanical engineer for the design of a cogeneration facility consisting of two 650-kW ebulliently-cooled reciprocating engine generators, a 400-ton absorption chiller, and a 600-ton centrifugal chiller providing electricity, steam, chilled water, and hot water for an electronics plant for Burroughs Corporation.
- Staff mechanical engineer responsible for conceptualization and detailed design of a medium Btu gas collection, compression, blending, and delivery system including four reciprocating gas compressors, an 86,000-cf low-pressure gas holder, and a 10-million cf/day flare system constructed as part of a 5.5-MW energy recovery system expansion at the San Jose/Santa Clara Water Pollution Control Plant.
- Project manager for the rehabilitation of existing 3.5-MW reciprocating engine generator and 12,600-hp reciprocating engine blower facilities at the San Jose/Santa Clara Water Pollution Control Plant.
- Other cogeneration experience includes a feasibility study for Mobil Chemical, Bakersfield, California and the feasibility study and preliminary design of an incinerator waste heat recovery system including a 1-MW condensing steam turbine generator for the City of Palo Alto, California. The Palo Alto study was later revised to include a reciprocating engine generator facility to use landfill gas produced nearby.

1985 – 1988 Power Projects, Incorporated Walnut Creek, California

Lead Senior Engineer

- Lead mechanical engineer from the initial development through final acceptance of two 28-MW combined cycle turnkey cogeneration projects for O.L.S Energy. Responsibilities included process design, development of P&IDs, preparation of equipment and subcontract specifications, bid evaluations, review of vendor submittals, construction support, and startup coordination. Responsibilities also included the negotiation and coordination with the water, wastewater, and natural gas utilities for each project. Both projects were engineered and constructed simultaneously on a "fast track" schedule with the initial startup of the facilities within 16 months after close of financing.