

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:)
)
Application for Certification) Docket No. 02-AFC-04
for the Walnut Energy Center)
by Turlock Irrigation District)

TURLOCK IRRIGATION DISTRICT

PETITION TO REOPEN THE HEARING RECORD

ELLISON, SCHNEIDER & HARRIS L.L.P.

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INTRODUCTION

Pursuant to the “Notice of Availability of Presiding Member’s Proposed Decision and Notice of Committee Conference and Notice of Commission Hearing” dated January 14, 2004 (the “Committee Order”), the Turlock Irrigation District (the “District”) hereby petitions the Committee to reopen the record to receive additional information on Visual Resources as it relates to one Condition, VIS-6 (the “Petition”). Specifically, the District asks the Committee to reopen the record to receive certain testimony attached hereto regarding the cooling tower design for the District’s Walnut Energy Center project (“WEC”). The Committee has plenary discretion to reopen the record for this limited purpose.¹

As set forth in the testimony of Randy Baysinger, Gary Rubenstein and Jim McLucas attached to the Petition, the District desires to revise condition VIS-6 related to the cooling tower design specifications. The testimony demonstrates that the proposed revisions to VIS-6 will have no potentially significant impacts on the environment and will comply with all applicable laws, ordinances, regulations, and standards (“LORS”).

The District has proposed changes in the cooling tower design in order to save money for its ratepayer-owners. This monetary savings is significant, especially given that the proposed changes will have no significant environmental effects and will comply with LORS.

In addition to supplying the technical information relating to the proposed design change, the District’s testimony also proposes specific changes to the verification language of Condition VIS-6. Specifically, the District should be allowed to order the cooling tower, but the District remains “at risk” (1) regarding the Commission’s approval of the requested revisions to VIS-6, pre-certification and (2) regarding the Staff’s notification that the cooling tower meets the design criteria, post-certification.

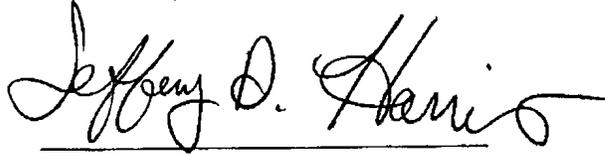
The Commission Staff has had the opportunity to review the technical information set forth in the District’s testimony. It is the District’s understanding that the Staff will concur with the District’s conclusions that the proposed revisions to VIS-6 will comply with all applicable LORS and will not result in any significant environmental impacts.

For these reasons, the District respectfully requests that the Committee reopen the record at the February 10, 2004 Committee Hearing. The District’s witnesses will be prepared to summarize their testimony and will be available for cross-examination; however, the District is hopeful that the District’s testimony will be received by declaration. Similarly, the District anticipates being able to agree to accept Staff testimony, if any, via declaration.

¹ Public Resources Code §§25218(e), 25218.5; 20 CCR §§ 1212, 1702(h).

Dated: January 30, 2004

ELLISON, SCHNEIDER & HARRIS LLP

A handwritten signature in black ink that reads "Jeffery D. Harris". The signature is written in a cursive style with a horizontal line underneath the name.

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Attorneys for the Turlock Irrigation District

Visual Resources

I. Introduction

A. Names

Randy Baysinger, Jim McLucas, Gary Rubenstein

B. Purpose

This testimony proposes changes to Condition of Certification VIS-6 to reflect the design specifications of the cooling tower the Turlock Irrigation District (TID) prefers to procure.

C. Qualifications

Our qualifications are summarized more completely in the attached resumes (Appendix A).

II. Summary

TID is seeking modification to Condition of Certification VIS-6 contained in the Final Staff Assessment and Presiding Member's Proposed Decision. This condition requires, in part, that final design specifications for the cooling tower be submitted to ensure that the cooling tower is designed so that plume frequency will not increase from the cooling tower design as originally analyzed by the CEC Staff.

In response to a request for proposals for the Walnut Energy Center cooling tower, TID received a bid for a tower that is preferable, but which is not consistent with proposed Condition of Certification VIS-6. This tower is significantly less expensive than the tower design originally analyzed by the CEC Staff, and procurement of this tower will save money for TID's ratepayer-owners. This monetary savings is significant, especially given that the proposed changes will have no significant environmental effects and will comply with LORS.

TID has assembled the following design specifications for this alternative cooling tower:

	97F Case	46F Case	33F Case
Design Case			
Configuration (CT x ST, Power Density)	2 x 1, NPD	2 x 1, NPD	2 x 1, NPD
Dry Bulb Temperature, deg. F	97.0	46.0	33.0
Wet Bulb Temperature, deg. F	70.0	43.0	32.0
Number of Combustion Turbines Operating	2	2	2
Combustion Turbine Load, %	100%	100%	100%
Evaporative Cooling (Yes/No?)	Yes	No	No
Power Augmentation (Yes/No?)	No	No	No
Duct Burning (Yes/No?)	No	No	No
Site Altitude, ft	85	85	85
Barometric Pressure, psia	14.65	14.65	14.65
Cooling Tower Data			
Allowance to WB Temp to Account for Recirculation, deg. F	2	2	-
Cooling Tower Design Wet Bulb Temperature, deg. F	72	45	32
Number of Cells	5	5	5
Number of Fans Operating	5	5	5
Leaving Air Flow/Cell, cfm	1,226,000	1,222,000	1,219,000
Total Leaving Air Flow, cfm	6,130,000	6,110,000	6,095,000
Temperature of Leaving Air, deg. F	95	81	75
Heat Rejected from CW, MMBtu/hr	657	678	688
Density of Leaving Air, lbs/cf	0.0698	0.0722	0.0732
Exhaust Flow/Cell, lbs/min	85,549	88,236	89,205
Exhaust Flow/Cell, kg/sec	647	667	674
Tower Heat Input, MMBtu/hr	657	678	688
Tower Heat Input, MW	193	199	202
Heat Input/Cell, MW	38.5	39.7	40.3
Factor, kg/sec-MW	16.8	16.8	16.7

The numbers presented above reflect the final engineering design values for the cooling tower, and thus do not include the preliminary design margins used to calculate the preliminary engineering design values as those preliminary calculated values are superseded by the detailed design values.

This alternative cooling tower is a somewhat smaller than the tower previously analyzed by the CEC Staff. Based on a basin wall that extends about 3.5 feet above grade, the height to the top of the fan stack is about 44.3 feet (30.6 feet to the fan deck). The fan stack diameter (back-calculated from the discharge velocity and fan discharge rate) is about 31.6 feet. The tower width is about 42.7 feet and the tower length is about 240.7 feet (excluding basin and stairs).

The noise produced by this cooling tower will be similar to that assumed in the noise model used by the Applicant to predict the noise levels resulting from operation of the Walnut Energy Center. Thus, the use of this cooling tower will not increase the project's noise levels above those previously analyzed by the TID and CEC Staff.

The energy requirements (pumping and fan horsepower) associated with this cooling tower will be less than the cooling tower used in the preliminary design; therefore, the project's efficiency will improve and therefore will not be negatively impacted by the use of this alternative cooling tower.

TID proposes to modify Condition of Certification VIS-6 to reflect the final design specifications included above. TID believes that these proposed changes to Condition of Certification VIS-6 will not affect the CEC Staff's conclusion that there is no significant

adverse impact associated with the potential formation of visible water vapor plumes associated with the project.

TID also proposes minor revisions to the verification language. These proposed revisions allow TID to order the cooling tower “at risk.” Specifically, TID will be allowed to order the cooling tower now, but TID remains “at risk” regarding: (1) the Committee and then the full Commission’s approval of the requested revisions, pre-certification; and (2) the Staff’s notification that the cooling tower meets the design criteria, post-certification. It is essential for TID to procure the cooling tower at this time to maintain its construction schedule and on-line date for the project.

Consequently, TID proposes to revise VIS-6 as follows:

VIS-6 The project owner shall ensure that the Walnut Energy Center cooling tower is designed and operated so that the plume frequency will not increase from the design as certified.

The cooling tower shall be designed so that the exhaust air flow rate per heat rejection rate (1) will not be less than ~~45.0~~ 16.7 kilograms per second per megawatt when the ambient temperatures are between 32 and 46 80 degrees F.; and (2) will not be less than ~~19.0~~ kilograms per second per megawatt when the ambient temperatures are greater than 46 degrees F and less than 80 degrees F.

Verification: At least 30 days prior to ~~ordering~~ construction of foundations for the cooling towers, the project owner shall provide to the CPM for review the final design specifications of the cooling tower related to plume formation. The project owner shall not ~~order~~ begin construction of the cooling tower foundation until notified by the CPM that the ~~two~~ design requirements above ~~have~~ has been satisfied.

The project owner shall provide a written certification in each Annual Compliance Report to demonstrate that the cooling towers ~~have~~ has consistently been operated within the above-specified design parameters, except as necessary to prevent damage to the cooling tower. If determined to be necessary to ensure operational compliance, based on legitimate complaints received or other physical evidence of potential non-compliant operation, the project owner shall monitor the cooling tower operating parameters in a manner and for a period as specified by the CPM. For each period that the cooling tower operation monitoring is required, the project owner shall provide to the CPM the cooling tower operating data within 30 days of the end of the monitoring period. The project owner shall include with this operating data an analysis of compliance and shall provide proposed remedial actions if compliance cannot be demonstrated.

**DECLARATION OF
Randy Baysinger**

I, Randy Baysinger, declare as follows:

1. I am presently employed by Turlock Irrigation District as Assistant General Manager.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the attached testimony on Visual Resources for the Walnut Energy Center based on my independent analysis and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: January 28, 2004


Signed: _____

At: Turlock, California

Randy Baysinger

Assistant General Manager, Power Generation Administration, Turlock Irrigation District

Education

B.S., University of California, Davis, 1977

Professional Registrations

Professional Electrical Engineer, California, E 10552

Distinguishing Qualifications

- 26 years experience in the design, construction and project management of power generation facilities. Experience in transmission and substation engineering.
- Experience in power system protection

Relevant Experience

Mr. Baysinger has 26 years of experience in the design, construction and operation of utility power generation facilities. He has been the lead engineer or project manager on numerous generation, transmission and substation projects.

Representative Projects

Small Hydro Project. Lead engineer on project consisting of four (4) separate small hydro power plants. Output ranged from 1 MW to 6 MW. Responsible for construction and start up testing.

Walnut Power Plant. Lead Engineer on two unit, simple cycle gas turbine power plant. Plant consisted of two Frame 5 gas turbines capable of firing on natural gas and fuel oil. Responsible for design review, construction and start up testing.

Don Pedro Power Plant. Lead engineer on 40 MW high head hydro project. Responsible for FERC licensing, design, construction and start up testing.

LaGrange power Plant. Project manager on two unit 6 MW hydro rehabilitation project. Project consisted of refurbishing a hydro plant originally built in 1924. Project consisted of new forebay construction, refurbished penstocks, new turbines, generators, and control system. Responsible for entire project, from conception through commissioning.

Almond Power Plant. Project manager for single unit, combined cycle gas turbine power plant. Plant consisted on one LM5000 areoderivative gas turbine, heat recovery steam generator, and associated plant equipment. Project used reclaimed water from local city wastewater treatment plant. Responsible for entire project, from conception through commissioning.

DECLARATION OF

Jim McLucas

I, Jim McLucas, declare as follows:

1. I am presently employed by Calpine Corporation as a regional engineering manager.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the attached testimony on Visual Resources for the Walnut Energy Center based on my independent analysis and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 1-28-04

Signed:  _____

At: Dublin, CA

Jim McLucas
Regional Engineer

Education and Registration

University of California - Santa Barbara, California
B.S. Mechanical Engineering - Graduated with High Honors, Member, Tau Beta Pi and Pi Tau Sigma, Recipient, President's Undergraduate Fellowship and University of California Appropriate Technology Grant

Professional Registration

Mechanical Engineer, California

Experience

22 years

Calpine Corporation

2000 to Present

Regional Engineer

Regional engineering manager for Calpine's Western Region and Canada responsible for engineering assistance to support the development and permitting of new power projects, including Calpine's East Altamont Energy Center, Inland Empire Energy Center, San Joaquin Valley Energy Center, Moapa Paiute Energy Center, and Turner Energy Center, Turlock Irrigation District's Walnut Energy Center and City Of Roseville's Roseville Energy Park. Responsibilities include 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, 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.

CH2M HILL

1981-1985, 1988 – 2000

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 Recycled Water Facility (RWF) for Calpine Corporation. The RWF provides recycled water for two Calpine power plants located in Pittsburg, California. Responsibilities also included assistance with 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. 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.

Power Projects, Incorporated

1985 – 1988

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.

**DECLARATION OF
Gary Rubenstein**

I, Gary Rubenstein, declare as follows:

1. I am presently employed by Sierra Research as a Senior Partner.
2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.
3. I prepared the attached testimony on Visual Resources for the Walnut Energy Center based on my independent analysis and my professional experience and knowledge.
4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed herein.
5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: 11/28/04

Signed: Gary Rubenstein

At: Sacramento, California

Gary S. Rubenstein

Education

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

Professional Experience

August 1981 - Present Senior Partner
Sierra Research

As one of the founding partners of Sierra Research, responsibilities include project management, and technical and strategy analysis in all aspects of air quality planning and strategy development; emission control system design and evaluation; rulemaking development and analysis; vehicle inspection and maintenance program design and analysis; and automotive emission control design, from the initial design of control systems to the development of methods to assess their performance in customer service. As the Partner responsible for Sierra Research's activities related to stationary sources, he has supervised the preparation of control technology assessments, environmental impact reports and permit applications for numerous industrial projects, including over 8000 megawatts of electrical generating capacity, in the Western United States.

Mr. Rubenstein has worked on the following key projects while with Sierra: preparation of the 1986 ozone and carbon monoxide nonattainment plans for Kern County, California; preparation of the air quality portions of the EIR/EIS for the controversial expansion of operations at the South Lake Tahoe Airport; preparation and defense of the air quality permit applications for the ACE project, the first utility-scale (90 MW) coal-fired power plant built in California; development of the CALIMFAC and EMFAC99 models, California's motor vehicle emission factor models; preparation and defense of analyses of the air quality impacts of the proposed merger between Southern California Edison and San Diego Gas & Electric Company, which would have created the country's second largest electric utility; and preparation and defense of analyses of the air quality impacts of the proposed Eagle Mountain Landfill which, when constructed, will be the largest landfill in the United States.

Mr. Rubenstein has presented testimony and served as a technical expert witness before numerous state and local regulatory agencies, including the U.S. Environmental Protection Agency, California State Legislative Committees, the California Air Resources Board, the California Energy Commission, the California Public Utilities Commission, the South Coast and

Bay Area Air Quality Management Districts, several rural California air pollution control districts, the Hawaii Department of Health, and the Alabama Department of Environmental Management. Mr. Rubenstein has also served as a technical expert on behalf of the California Attorney General and Alaska Department of Law.

Additional project experience includes the conduct and supervision of projects related to the development of emissions inventories for air quality planning purposes; the assessment of air quality trends; preparation of State Implementation Plans; the development and exercise of motor vehicle emission factor models; the analysis of motor vehicle emission data; and the preparation of legislative and regulatory analyses.

June 1979 - July 1981 Deputy Executive Officer
California Air Resources Board

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

July 1978 - July 1979 Chief, Energy Project Evaluation Branch
Stationary Source Control Division
California Air Resources Board

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

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