State of California

The Resources Agency of California

Memorandum

To: James D. Boyd, Presiding Member
John L. Geesman, Associate Member

Date: March 13, 2006
Telephone: (916) 654-4206

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

Subject: **San Francisco Electric Reliability Project (AFC 04-AFC-1)**

Attached is the testimony of Lawrence Tobias on behalf of the California Independent System Operator (CA ISO) submitted for the San Francisco Electric Reliability Project (SFERP). It is staff's intent to sponsor the CA ISO's attached testimony at the project's future Evidentiary Hearings.

Exhibit No.: _____
Commissioner - Presiding Member: James D. Boyd
Commissioner - Associate Member: John Geesman
Hearing Officer: Stanley Valkosky and Gary Fay
Witness: Lawrence Tobias

BEFORE THE
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

In the Matter of the Application For Certification of the San Francisco Electric Reliability Project	Application 04-AFC-1

TESTIMONY OF LAWRENCE TOBIAS ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR

Submitted by the California Independent System Operator

Charles Robinson, Vice President and General Counsel
Grant Rosenblum, Regulatory Counsel
California Independent System Operator
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March 10, 2006

BEFORE THE
ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION
OF THE STATE OF CALIFORNIA

In the Matter of the City and County of San Francisco Application For Certification of the San Francisco Electric Reliability Project	Application 04-AFC-1

TESTIMONY OF LAWRENCE TOBIAS ON BEHALF OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR

Submitted by the California Independent System Operator

Q. Please state your name, position, employer, duties and qualifications.

A. My name is Lawrence Tobias, Senior Regional Transmission Engineer with the California Independent System Operator Corporation ("CA ISO"). My statement of duties and qualifications is provided as Attachment 1 to this testimony.

Q. On whose behalf are you submitting this testimony?

A. I am submitting this testimony on behalf of the CA ISO.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to support the reliable interconnection of the San Francisco Electric Reliability Project to Pacific Gas & Electric's (PG&E) transmission system.

Q. Do you use any specialized terms in your testimony?

A. Yes. Unless indicated otherwise, we use terms as defined in the CA ISO Tariff Appendix A: Master Definitions Supplement.

Q. Please discuss the basic background information associated with your testimony?

A. The City and County Of San Francisco ("CCSF") has applied to the California Energy Commission Of The State Of California for an Application For Certification of the San

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Francisco Electric Reliability Project (SFERP). As such and in accordance with Amendment 39 of the CA ISO Tariff, the proposed new generation project was analyzed through System Impact Studies (SIS) conducted by PG&E. The SIS report was reviewed by the CA ISO and preliminary interconnection approval was granted November 11, 2003. Following this preliminary approval, PG&E conducted a Facilities Study to identify the method and means for interconnecting the project to PG&E's transmission system. A Facilities Study Report was reviewed by the CA ISO with final interconnection approval granted May 28, 2004. Due to a change in site location to the present proposed location south of Potrero Substation, an updated Facilities Study was conducted with CA ISO approval again granted on June 27, 2005.

Q. Please briefly describe the SFERP Project and the method of interconnecting the SFERP to PG&E's Potrero Substation.

A. CCSF proposes to interconnect a new gas turbine generating facility to PG&E's Potrero 115 kV Switchyard. The proposed project will consist of three LM6000 combustion turbine generator units rated 50.5 MW each. The net output of the proposed project will be 145.1 MW. A Facilities Study Report for the SFERP was issued March 19, 2004 for the original site, which was adjacent to the existing Potrero Power Plant. In January of 2005, CCSF proposed a new site and interconnection plan for the SFERP. The new site is approximately 0.3 miles south of the original site. The proposed new interconnection to PG&E's transmission grid will be via two new 115 kV underground generation tie lines. Each of the two new 115 kV underground lines is capable of transmitting the full 145.1 MW of SFERP to PG&E's transmission grid. The original proposed generation tie lines were overhead.

Q. Is the proposed method and transmission facilities for interconnecting the SFERP to the transmission grid adequate?

A. Yes – I reviewed the Feasibility/Updating Facility Study II (F/UFS) for the SFERP and found that the proposed interconnection via two 115 kV cables from the Project to PG&E's Potrero Substation to be adequate to address any reliability problems and therefore granted final interconnection approval in a letter dated June 27, 2005.

Q. Please summarize the CA ISO forecasted reliability need for the proposed CCSF CTs?

A. The CA ISO has determined that generation located within San Francisco will remain critical to the long-term ability to serve load in the San Francisco Peninsula Area. Completion of the SFERP along with the transmission projects identified in the CA ISO Revised Action Plan for San Francisco (Attachment 2) will allow for the release of Potrero units 3, 4, 5, and 6 from Reliability Must-Run (RMR) obligations.

Q. Please describe the background associated with the CA ISO Revised Action Plan for San Francisco.

A. In 1998, the City entered into an agreement with PG&E to close the Hunters Point Power Plant (Hunters Point) as soon as it is released from its Reliability Must Run (RMR) Agreements. To that end, in approving the Jefferson Martin transmission line, the CA ISO Board of Governors provided the directive to the CA ISO to work with the City and County of San Francisco and interested stakeholders with the goal of closing the Hunters Point Power Plant. PG&E and the CA ISO jointly developed a list of reliability upgrades required to release all of Hunters Point Power Plant from RMR. With that accomplished, the CA ISO set upon a course to facilitate retirement of all generator units at the Potrero Power Plant. On September 10, 2004, the CA ISO Board approved the Revised Action Plan for San Francisco (Attachment 2). This action plan facilitates the release of Potrero Power Plant generation units from their RMR agreements. Specifically, the proposed CCSF CT's will allow for the release of Potrero Unit #3 from its RMR contract and are required to continue to mitigate for potentially overloading the Newark-Ravenswood 230 kV line upon an outage of the Tesla-Ravenswood 230 kV line. It is important to note that only the power plant owner (Mirant) can decide to retire their generator units.

Q. Are there other things that must be considered when addressing load-serving concerns for the San Francisco Peninsula Area?

A. For an area like the San Francisco Peninsula Area where the load is served through a radial transmission system, adequate generation and transmission capacity within and into the area is required to account for planned or forced outages of transmission facilities, and to protect for the next possible transmission facility outage before the initial transmission facility or facilities

are put back in service. Under these conditions, sufficient generation or remaining import capability to serve load is required to prevent loss of load for the next outage of a single transmission facility.

Q. Please explain the CA ISO's responsibilities in the transmission planning and expansion process in California.

A. Pursuant to the provisions of Assembly Bill 1890 ("AB 1890"), the CA ISO is charged with maintaining the reliability of the CA ISO Controlled Grid. The CA ISO Controlled Grid is comprised of transmission facilities and rights turned over to the CA ISO's Operational Control by San Diego Gas & Electric Company ("SDG&E"), Southern California Edison Company ("SCE"), PG&E and various municipalities (collectively, the Participating Transmission Owners or Participating TOs). In addition to the CA ISO's responsibility to maintain system reliability, the CA ISO is also charged with planning and expanding the CA ISO Controlled Grid so as to ensure a reliable and efficient transmission system. These functions and responsibilities are codified in the CA ISO Tariff, which is on file and available for public inspection at the FERC.

Q. Does this conclude your testimony?

A. Yes. It does.

References

Cal-ISO (California Independent System Operator). Cal-ISO Conformed Tariff I, http://www.caiso.com/docs/2005/06/30/2005063008075711458.htrnl

Cal-ISO (California Independent System Operator). California Independent System Operator's Review and Findings of the San Francisco Electric Reliability Power Project, System Impact Study (SIS) Report Letter Dated November 11, 2003.

Cal-ISO (California Independent System Operator). California Independent System Operator's Review and Findings of the San Francisco Electric Reliability Project Facilities Study Report (FSR) Letter Dated May 28, 2004.

Cal-ISO (California Independent System Operator). California Independent System Operator's Review and Findings of the San Francisco Electric Reliability Project Feasibility/Updating Facility Study II (F/UFS) Letter Dated June 27, 2005.

San Francisco Electric Reliability Project, California Energy Commission Application for Certification, Dated March 18, 2004.

NERC (North American Electric Reliability Council) / Western Electricity Coordinating Council (WECC) Planning Standards, http://www.caiso.com/docs/2001/06/04/2001060418221123496.html

CA ISO Grid Planning Standards, http://www.caiso.com/docs/2001/06/04/2001060418221123496.html

DECLARATION OF

Lawrence S. Tobias

I, Lawrence S. Tobias declare as follows:

1. I am a Senior Regional Transmission Engineer presently employed by the California Independent System Operator (California ISO).

2. A copy of my professional qualifications and experience is attached hereto and incorporated by reference herein.

3. I prepared the California ISO testimony on transmission system reliability for the San Francisco Electric Reliability Project based upon my independent analysis of the Application for Certification, the System Impact Study, the Facilities Study, data from reliable documents and sources, and my professional experience and knowledge.

4. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue(s) addressed therein.

5. I am personally familiar with the facts and conclusions related in the testimony and if called as a witness could testify competently thereto.

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

Dated: *September 30, 2005*

Signed: Lawrence S. Tobias

At: *Folsom, California*

Attachment 1

Resume

Lawrence Scott Tobias

151 Blue Ravine Road
Folsom, Calif., 95630
(916) 608-5763
email: LTobias@caiso.com

Work Experience: **California Independent System Operator**

1999 – Present Grid Planning Engineer, then Senior Grid Planning Engineer in 2001, then Senior Regional Transmission Engineer in 2005 - primary responsibilities are to insure reliability of the Cal-ISO grid through involvement in the following:

- Presently am lead engineer for PG&E's (& was for SDG&E's) Annual Grid Assessment, Expansion Plan
- Participate in determining SF Bay Area Reliability Must-run requirements
- Presently am lead engineer for San Francisco Area long-term studies
- Prepared and presented testimony at California Energy Commission hearings related to permitting of a new generation plant
- Worked in close coordination with various state agencies in developing policies related to electric power supplies
- Participated in San Onofre Nuclear Power Plant Operational Studies
- Reviewed New Merchant Generation Interconnection studies
- Developing a library of PG&E and SDG&E technical information
- Was lead engineer for developing a Long-term Southern CA 500 kV regional plan
- Participate in Cal-ISO Controlled Grid Annual Assessment
- On-going development and maintenance of a listing of PTO transmission projects

Pacific Gas & Electric Company

1997 – 1999 Senior Transmission Planning Engineer - primary responsibilities are North Bay Division transmission planning, WRTA regional planning coordination, Sacramento Area transmission reinforcement, and Northern California WSCC Area Coordinator.

1995 - 1997 Transmission Planning Engineer - primary responsibilities were North Bay Division transmission planning and PG&E's WSCC Technical Studies Subcommittee member.

1994-1995 Transmission Planning Associate - primary responsibilities were Los Padres Division transmission planning and PG&E's WSCC Technical Studies Subcommittee member.

1979-1993 Transmission Planning Analyst - primary responsibilities were interconnected system planning, dynamic system analysis, and PG&E's representative and then Chairman of the WSCC Pacific and Southwest Transfer Subcommittee.

1971-1979 Engineering Assistant within Transmission Planning - primary responsibilities were interconnected system planning and dynamic system analysis.

Awards and Recognition:

Performance recognition awards have been received four times at the ISO and twelve times at PG&E. Reasons sited were dedication, innovation, teamwork, and cost reduction. Performance recognition letters related to interconnected system studies and Chairmanship of the WSCC PAST Subcommittee were also received.

Education:

- Electrical Engineering diploma from International Correspondence School.
- Associate in Engineering Degree from Cogswell Polytechnical College.
- The following ISO and PG&E classes:
  Leadership Fundamentals
  Dynamics of Leadership
  Intelligent Risk Taking
  Regulatory Issues
  Situational Negotiation Skills
  Project Management Process
  Valuing Differences
  Leadership Skills for Supervisors
  Business Leadership
  Technical Writing
  Effective Negotiations
  Economic Analysis
  Characteristics of the Successful Employee
- The following external classes:
  Voltage Control and Reactive Power Planning
  Power System Scheduling and Operation
  Power System Dynamics
  GE PSLF and Dynamic Simulation Programs

Attachment 2 - Revised Action Plan for San Francisco

PG&E Transmission Projects and City Peaking Power Plants Necessary
To Meet NERC/WECC/CAISO Planning Requirements

As of March 1, 2006

	Project	ESTIMATED COMPLETION DATE/STATUS	ISSUE	Resolution of Issue
	A. Release Hunters Point Units 2 & 3 From Their RMR Agreements			
1	Potrero Static VAR Compensator	December 2004, Completed	NERC/WECC/CAISO Planning Standards	This project allowed ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 2 and 3 released from their RMR Agreement
	B. Release Hunters Point Units 1 & 4 From Their RMR Agreements			
2	San Mateo-Martin No. 4 Line Voltage Conversion	Completed	NERC/WECC/CAISO Planning Standards	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement
3	Ravenswood 2nd 230/115 kV Transformer Project	Completed	NERC/WECC/CAISO Planning Standards	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement
4	San Francisco Internal Cable Higher Emergency Ratings	Completed: To Be Used Upon Completion of the Jefferson-Martin 230 kV Project	NERC/WECC/CAISO Planning Standards	These ratings are an interim solution that in combination with the other listed projects allows PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreements. In 2007, a third Martin-Hunters Point 115 kV cable will replace the emergency ratings.
5	Tesla-Newark No. 2 230 kV Line Reconductoring	February 2005, Completed	RMR Criteria	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement
6	Ravenswood-Ames 115 kV Lines Reinforcement	April 2005, Completed	RMR Criteria	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement
7	San Mateo 230 kV Bus Insulator Replacement	May 2005, Completed	Operations Requirement During San Mateo Bus Wash	Eliminate bus wash at San Mateo 230 kV bus will reduce the 400 MW generation operational requirement down to less than 200 MW

8	Potrero-Hunters Point (AP-1) 115 kV Cable	April 2006 Under Construction	NERC/WECC/CAISO Planning Standards	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement. Scheduled for Dec. 2005 operation.
9	Jefferson-Martin 230 kV Line	March – April 2006 Under construction	NERC/WECC/CAISO Planning Standards	This project in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreement
10	Potrero 3 SCR retrofit	June 2005 Completed	NERC/WECC/CAISO Planning Standards	This project ensures the availability of Potrero 3 at full capacity thereby reducing overall Greater Bay Area RMR requirements. This project or the reduced capacity available without the retrofit in combination with the other listed projects allows ISO/PG&E to meet planning requirements with Hunters Point Power Plant Units 1 and 4 released from their RMR Agreements
C. Release Potrero Unit 3 From Its RMR Agreement				
11	San Francisco Electric Reliability Project and San Francisco Airport Electric Reliability Plant	Dec 2007	NERC/WECC/CAISO Planning Standards	These projects will allow ISO/PG&E to meet planning requirements with Potrero 3 released from its RMR Agreement. CEC permit suspended due to a change in where to site near Potrero.
Release Potrero Units 4, 5, & 6 From Their RMR Agreements (assumes previous completion of Peaking Power Plants by the City)				
12	Upgrade the Newark-Dumbarton 115 kV line	December 2006 Engineering in Progress	NERC/WECC/CAISO Planning Standards	This upgrade is needed in combination with the other listed mitigations to allow ISO/PG&E to meet planning requirements with Potrero Units 4, 5, and 6 released from their RMR Agreement
13	Upgrade the Bair-Belmont 115 kV Line	Scheduled for May 2007	NERC/WECC/CAISO Planning Standards	This upgrade is needed in combination with the other listed mitigations to allow ISO/PG&E to meet planning requirements with Potrero Units 4, 5, and 6 released from their RMR Agreement
14	Upgrade the Metcalf-Hicks & Metcalf-Vasona 230 kV lines	Scheduled for May 2007	NERC/WECC/CAISO Planning Standards	This upgrade is needed in combination with the other listed mitigations to allow ISO/PG&E to meet planning requirements with Potrero Units 4, 5, and 6 released from their RMR Agreement
15	Add voltage support at Ravenswood substation	Scheduled for May 2007	NERC/WECC/CAISO Planning Standards	This upgrade is needed in combination with the other listed mitigations to allow ISO/PG&E to meet planning requirements with Potrero Units 4, 5, and 6 released from their RMR Agreement