State Of California

The Resources Agency of California

Memorandum

Date : June 23, 2006
Telephone: (916) 651-8853
File: Los Esteros 2, Phase 2 (3-AFC-2)

DOCKET
03-AFC-2
DATE JUN 23 2006
RECD. JUN 23 2006

To: DOCKETS UNIT

From: California Energy Commission **Robert Worl, Project Manager** Robert Worl
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: **LOS ESTEROS CRITICAL ENERGY FACILITY 2 Phase 2 (03-AFC-2); DECLARATIONS AND RESUMES FOR STAFF TESTIMONY SUPPORTING THE MOTION FOR OVERRIDE OF LORS NONCOMPLIANCE**

The attached Declarations and Resumes are from staff supporting the prepared and docketed testimony in the above Siting case. The declarations and resumes are for:

- Mark Hesters
- Ajoy Guha, P.E.
- R. Peter Mackin, P.E.

Attachments

DECLARATION OF
Ajoy Guha P. E.

I, **Ajoy Guha** declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Systems Assessments and Facilities Siting Division as an **Associate Electrical Engineer**.

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

3. I helped prepare the staff testimony on **Electricity Supply Benefits And Loss Analysis Resulting From Conversion Of The Los Esteros Critical Energy Facility To A Combined-Cycle Plant**, for the **Los Esteros Critical Energy Facility, Phase 2**, based on my independent analysis of the Application for Certification and supplements hereto, 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 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: Ajoy Guha Signed: 6-23-06

At: Sacramento, California

RESUME

AJOY GUHA

Associate Electrical Engineer
California Energy Commission
1516 Ninth Street, MS 46
Sacramento, CA 95814

EDUCATION:
MSEE, POWER SYSTEMS ENGINEERING, PURDUE UNIVERSITY, INDIANA
BSEE, ELECTRICAL ENGINEERING, CALCUTTA UNIVERSITY, INDIA

CERTIFICATIONS:
REGISTERED PROFESSIONAL ENGINEER, CALIFORNIA, INDIANA & ILLIINOIS
MEMBER OF IEEE; MEMBER OF THE INSTITUTION OF ENGINEERS OF INDIA

SUMMARY OF PROFESSIONAL BACKGROUND:

Ajoy Guha, P. E. has years of electric utility experience with an extensive background in evaluating and determining current and potential transmission system reliability problems and their cost effective solutions. He has a good understanding of the transmission issues and concerns. He is proficient in utilizing computer models of electrical systems in performing power flow, dynamic stability and short circuit studies, and provide system evaluations and solutions, and had performed generator interconnection studies, area transfer and interconnected transmission studies, and prepared five year transmission alternate plans and annual operating plans. He is also experienced in utilizing Integrated Resource Planning computer models for generation production costing and long term resource plans, and had worked as an Executive in electric utilities and experienced in construction, operation, maintenance and standardization of transmission and distribution lines.

WORK EXPERIENCE:

CALIFORNIA ENERGY COMMISSION, ENERGY FACLITIES SITING AND ENVIRONMENTAL DIVISION, SACRAMENTO, CA, 11/2000-Present.
Working as Associate Electrical Engineer in the Transmission System Engineering unit on licensing generation projects. Work involves evaluating generation interconnection studies and their impacts on transmission system, and providing staff assessments and testimony to the commission, and coordination with utilities and other agencies.

ALLIANT ENERGY, DELIVERY SYSTEM PLANNING, MADISON, WI, 4/2000-9/2000.
Worked as Transmission Services Engineer, performed Generator Interconnection studies and system planning studies.

IMPERIAL IRRIGATION DISTRICT, POWER DEPT., Imperial, California, 1985-1998.
Worked as Senior Planning Engineer in a supervisory position and in Transmission, Distribution and Integrated Resource planning areas. Performed interconnection studies for 500 MW geothermal plants and developed plan for a collector system, developed methodologies for transmission service charges , scheduling fees and losses. Worked as the Project Leader in the 1992 Electricity Report (ER 92) process of the California Energy Commission. Worked as the Project Leader for installation of an engineering computer system and softwares. Assumed the Project Lead in the standardization of construction and materials, and published construction standards.

CITY LIGHT & POWER, Frankfort, Indiana, 1980 – 1985.
Worked as Assistant Superintendent and managed engineering, construction and operation depts.

WESTERN ILLINOIS POWER CO-OP., Jacksonville, Illinois, 1978 – 1980.
Worked as Planning Engineer and was involved in transmission system planning.

THE CALCUTTA ELECTRIC SUPPLY CORPORATION LTD. (CESC), Calcutta, India, 1964 –1978.
Worked as District Engineer and was responsible for managing customer relations, purchasing and stores, system planning, construction, operation and maintenance departments of the most industrialized Transmission and Distribution division of the Utility. Worked as PROJECT MANAGER for construction of a 30 mile Double Circuit 132 kV gas-filled Underground Cable urban project. During 1961-63, worked as Factory Engineer for design, manufacturing and testing of transformers, motor starters and worked in a coal-fired generating plant.

DECLARATION OF
Mark Hesters

I, **MARK HESTERS** declare as follows:

1. I am presently employed by the California Energy Commission in the **Engineering Office** of the Systems Assessments and Facilities Siting Division as a **Senior Electrical Engineer**.

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

3. I helped prepare the staff testimony on **Electricity Supply Benefits And Loss Analysis Resulting From Conversion Of The Los Esteros Critical Energy Facility To A Combined-Cycle Plant**, for the **Los Esteros Critical Energy Facility, Phase 2**, based on my independent analysis of the Application for Certification and supplements hereto, 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 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: June 23, 2006 Signed: _____

At: Sacramento, California

Mark Hesters
Associate Electrical Engineer

Mark Hesters has fourteen years of experience in electric power regulation. He worked in the Engineering Office of the California Energy Commission's Energy Facilities Siting & Environmental Protection Division since 1998 providing analysis of California transmission systems and testimony on transmission systems in several Commission power plant certification processes. Prior to that Mark worked in the CEC's Electricity Analysis Office providing lead analysis on Southern California Edison resource issues and modeling support for all areas of California. He holds a B.S. degree from the University of California at Davis in Environmental Policy Analysis and Planning.

DECLARATION OF
R. Peter Mackin, P.E.

I, R. **Peter Mackin** declare as follows:

1. I am presently employed by Utility System Efficiencies, Inc. as the Vice President, Reliability Services and Principal Electrical Power Systems Analyst.

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

3. I helped prepare the testimony on **ELECTRICITY SUPPLY BENEFITS AND LOCAL SYSTEM EFFECTS CREATED BY THE CONVERSION OF THE LOS ESTEROS CRITICAL ENERGY FACILITY TO A COMBINED-CYCLE PLANT**, for the **Los Esteros 2 Power Plant Licensing Case, Docket # 03-AFC-2** based on my independent analysis of the Application for Certification and supplements hereto, 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 issues 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: June 23, 2006 Signed: R. Peter Mackin

At: Sacramento, California

Utility System Efficiencies, Inc.

2108 Marchita Way
Carmichael, CA 95608
Phone: 916.487.6870
Cell: 916.759.9063
petermackin@useconsulting.com

R. Peter Mackin

Vice President, Reliability Services & Principal Electrical Power Systems Analyst

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ACADEMIC BACKGROUND

M.S., Electric Engineering, Montana State University, 1982
B.S., Civil Engineering, Montana State University, 1981

PROFESSIONAL EXPERIENCE

Peter Mackin has over 24 years of power system planning and computer application development experience and has been involved in WSCC/WECC planning and operating activities since 1985. In April of 2006, Mr. Mackin joined Utility System Efficiencies, Inc. as Vice President, Reliability Services and Principal Electrical Power Systems Analyst.

While employed at Navigant Consulting, Mr. Mackin performed several transmission and resource integration studies for the Alberta Electric System Operator (AESO) as well as generation interconnection studies and transmission feasibility analyses for other clients. Mr. Mackin was a member of the NERC Version 0 and Phase III/IV Standards drafting teams. In addition, Mr. Mackin provided expert witness testimony at FERC in Docket no. ER01-1639-006.

While employed by the California ISO (Cal-ISO), Mr. Mackin performed or reviewed system planning studies for Reliability Must Run generation requirements, new generator interconnection studies, as well as Participating Transmission Owner annual Transmission Assessments. In addition, Mr. Mackin helped develop the Cal-ISO's New Facility Interconnection Policy and Long-Term Grid Planning Policy. Mr. Mackin has provided expert witness testimony regarding six new generation projects before the California Energy Commission.

While employed by Pacific Gas and Electric Co. (PG&E), Mr. Mackin was the lead transmission planning engineer performing transient stability simulations for the 500-kV California – Oregon Transmission Project. In addition, Mr. Mackin performed, supervised or reviewed studies to determine simultaneous import capabilities into California from the Pacific Northwest and the Desert Southwest. For two years, he served as chairman of the work group that undertook these studies comprised of utilities from California, the Northwest, and the Southwest.

Utility System Efficiencies, Inc. — 2006-Present

- **WECC Three Phase Rating Process.** Is leading the WECC Project Review Group and supervising the WECC Phase 2 rating studies for the Montana Alberta Tie Ltd. (MATL) project. The MATL project is a proposed 230 kV tie line between Lethbridge, Alberta and Great Falls, Montana. This project has a proposed bidirectional rating of 300 MW.

Navigant Consulting, Inc. — 2001-2006

- **California Power Authority. 2001.** Reviewed or supervised the review of the transmission system impact of 60 proposed projects submitted to the California Power Authority. This review was designed to discover any potential fatal flaws in the transmission interconnection for each project. This information along with input from other critical subject areas was used to rank the viability of each project.

- **Open Access Tariff Review. 2001.** Reviewed the Open Access Tariff (OAT) of SaskPower to determine compliance with FERC Order 888 and the NERC Available Transmission Capacity (ATC) calculation methodology.

- **Alberta 500 kV System Studies. 2001-2002.** Was the lead technical manager on a project to evaluate 500 kV transmission alternatives for the Alberta Transmission Administrator. This project included steady state, post-transient, and transient simulations to determine power system performance under various scenarios. The objective of this project was to develop preferred alternatives for three different generation development scenarios in the Province of Alberta. Additional analysis performed for these studies included EMF and SSR calculations and EMTP simulations.

- **Independent Consultant's Report for the California Department of Water Resources. 2001-2002.** Revised all major WECC transmission path limitations for input into the production simulation models used to by NCI help evaluate the power purchase contracts signed by CDWR on behalf of the people of the State of California.

- **Other Generation Projects (NCI). 2001-2002.** Reviewed studies and other information to provide clients with feasibility analysis regarding transmission interconnection for various potential generation projects. Also developed dynamic models for some projects to be able to model transient behavior of the new generation project. These potential generation projects ranged in size from 35 MW to over 600 MW.

- **Transmission Project Feasibility Analysis. 2001-2002.** Performed a feasibility analysis for a confidential client to determine the viability of a potential merchant transmission project. Reviewed the transmission studies and supervised the production simulation studies that were used to evaluate the economic potential of the project.

- **Silicon Valley Power Pico Project. 2002.** Was the project manager for the system studies being performed on behalf of Silicon Valley Power to determine the impacts of the Pico Project on the transmission systems of PG&E and Silicon Valley Power. The Pico Project is a 150 MW combined cycle power plant that is located in the City of Santa Clara, California.

- **NERC Facility Ratings Standard Authorization Request Drafting Team. 2003.** Was a member of the team that drafted the Standard Authorization Request (SAR) for NERC Standards FAC-008 to FAC-013 (Determine Facility Ratings, System Operating Limits, and Transfer Capability). This SAR was used as the basis for the new NERC Standards that were recently approved.

- **Alberta Transmission Development – Strategy and Conceptual Studies. 2003.** Was the project manager on a project to evaluate various transmission and generation development scenarios for the Alberta Electric System Operator (AESO). This project determined the transmission reinforcements needed to reliably serve Alberta load under various generation development and power export scenarios. The capital and O&M costs of the needed transmission reinforcements and the market price of the generation were combined in a financial model to determine the NPV for each scenario. These scenarios were then used to show the benefits to Alberta ratepayers of having adequate transmission available to accommodate a generation development near the low cost fuel supply sources.

- **Edmonton – Calgary Transmission Needs Assessment. 2003-2004.** Supervised and performed system planning studies in support of the Alberta Electric System Operator's (AESO) Edmonton-Calgary 500 kV Transmission Development Need Application to the Alberta Energy and Utilities Board. These studies involved powerflow and dynamic simulations of the Alberta electric system to help determine the short-term and long-term reinforcements needed to reliably and economically serve Alberta load while simultaneously minimizing the amount of congestion on the transmission system.

- **NERC Version 0 Standards Drafting Team. 2004.** Was a member of the team that revised the North American Electric Reliability Council's (NERC) Planning Standards and Operating Practices to create the Version "0" set of NERC Reliability Standards. The Planning Standards and Operating Policies were modified so that they contained only requirements that are needed to maintain power system reliability. These new Reliability Standards will form the foundation of any reliability requirements that might be mandated via federal legislation.

- **Reliability Must Run (RMR) Generation Expert Witness Testimony. 2004-2005.** Provided expert witness testimony for the Western Area Power Administration (WAPA) in FERC Docket ER01-1639-006. Supervised a series of RMR studies that demonstrated the reliability benefits provided to the system by generation units controlled by WAPA. Quantified these RMR benefits using a methodology similar to that used by the ISO to determine the RMR contract payments for RMR generation. All parties to this case agreed to a settlement after the hearing but prior to the issuance of the ALJ's decision.

- **NERC Phase III/IV Standards Drafting Team. 2005.** Is currently vice chairman of the NERC Phase III/IV Standards Drafting Team. This team is responsible for revising the NERC Phase III/IV Standards to be clear and enforceable, while incorporating the concerns of the industry as reflected in comments that have been received on all previous postings of these standards.

- **Montana Alberta Tie Ltd (MATL). 2005-2006.** Lead the first phase of the WECC Project Rating Review process as well as the WECC Regional Planning Project Review process for the MATL project. Successfully obtained WECC Phase 2 status for this project. The MATL project is a proposed 230 kV tie line between Lethbridge Alberta and Great Falls Montana. This project is has a proposed bidirectional rating of 300 MW.

California ISO Grid Planning 1997-2001

- **1998 Reliability Must Run Study. 1997-1998.** Performed all analyses to determine the minimum generation requirements for the Humboldt, North Valley, Sacramento, Sierra, North Bay and North Coast divisions of Pacific Gas and Electric Co. This work involved steady state powerflow, voltage stability and transient stability analyses. The results of these studies were used by the California ISO Board of Governors to determine the RMR requirements for the ISO control area and to designate generators that would become RMR units for each year. In addition, evaluated proposals for Local Area Reliability Services (LARS) that could serve as alternatives to RMR contracts for maintaining system reliability. These alternatives were evaluated based on, among other criteria, effectiveness, cost, environmental impact, safety, and impact on markets.

- **Alturas Project. 1997-1998.** Represented the ISO on the WSCC review group reviewing the system studies for the Alturas Transmission Project. The Alturas Transmission Project is a 345-kV transmission line that runs from Hilltop substation in northern California to Valley Road Substation west of Reno, NV. As the ISO representative, had significant input into ISO policy regarding the Alturas Transmission Project and its effects on other transfer paths in the WSCC.

- **Transmission Expansion Plans. 1998-2000.** Responsible for reviewing transmission studies and recommended transmission expansion plans for various areas of the ISO controlled grid. For the 1999 Transmission Expansion Plan, reviewed studies and recommended transmission expansion plans for PG&E's North Valley, Sacramento, Sierra, Stockton, Stanislaus, Yosemite, Fresno, and Kern divisions. For the 2000 Transmission Expansion Plan, reviewed studies and recommended transmission expansion plans for PG&E's Humboldt, North Valley, Sacramento, Sierra, Stockton, and Stanislaus divisions.

- **Los Medanos Energy Center (a. k. a., Pittsburg District Energy Facility). 1998-2001.** The Los Medanos Energy Center is a 555 MW combined cycle generator project currently operating in Pittsburg, California. Was responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject area of Transmission System Engineering. Also worked with PG&E and Calpine to develop operating procedures to allow the full output of the plant to be available to serve load following system condition changes that were not studied in the system impact and facility studies.

- **Delta Energy Center. 1998-2001.** The Delta Energy Center is an 880 MW combined cycle generator project located in Pittsburg, California. Was responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject area of Transmission System Engineering. Also worked with PG&E and Calpine to develop additional mitigation plans to allow the full output of the plant to be available to serve load following system condition changes that were not studied in the system impact and facility studies.

- **Three Mountain Power Project. 1998-2001.** The Three Mountain Power Project is a proposed 500 MW combined cycle generator project located in Burney, California. Was responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject area of Transmission System Engineering. Also assisted in negotiations between TANC, PG&E, and TMPP, regarding the issues of congestion management, curtailment priorities, and Existing Transmission Contracts.

- **Computer Model Development. 1999.** Developed an "EPCL" model for the GE PSDS program to simulate the fast governor response of the Humboldt Bay Power Plant to system line faults or system under-frequency events. This model was required to correctly model the power system in PG&E's Humboldt Division, and use of this model allows for more accurate unit commitment in the area.

- **Moss Landing Power Plant Project. 1999-2000.** The Moss Landing Power Plant Project is a 1060 MW combined cycle generator project currently operating east of Moss Landing, California. Was responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject area of Transmission System Engineering.

- **Metcalf Energy Center. 1999-2001.** The Metcalf Energy Center is a 600 MW combined cycle generator project in southern San Jose, California. Responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject areas of Alternatives, Transmission System Engineering and Local System Effects. The Local System Effects testimony was based on studies performed by Mr. Mackin (with assistance from CEC Staff) to determine the local and regional electrical benefits that would result from the construction and operation of the Metcalf Energy Center.

- **Policy Development. 1999-2001.** One of the primary developers of the California ISO's New Generation Interconnection Policy and the ISO's Long-Term Grid Planning Policy. In addition to developing the policies, had significant input in to the development of the Tariff language implementing both policies. Both policies were developed through a comprehensive stakeholder process involving representatives from generators, transmission owners, loads, and regulators.

- **El Segundo Modernization Project. 2000-2001.** The El Segundo Modernization Project is a 280 MW (net increase) combined cycle generator project planned to be located at the site of the existing El Segundo Generating Station located in the city of El Segundo, California. Was responsible for reviewing all system impact and facility studies associated with this project to make sure that the project would meet all applicable local and regional reliability criteria. In addition, provided expert witness testimony before the California Energy Commission in the subject area of Transmission System Engineering.

- **Other Generation Projects. 2000-2001.** While at the ISO, was responsible for reviewing all studies for each individual generation project to ensure that the project was in compliance with local and regional reliability criteria. During 2000 and 2001, was responsible for 36 different generation projects (six of these are listed above). In addition to reviewing studies, was also responsible for tracking internal ISO processes to make sure that when each of these generators was ready to synchronize to the ISO controlled grid, all internal ISO requirements had been met.

- **August 10 Validation Study and System Model Development. 2000-2001.** Was one of six task force members that developed "interim" modeling recommendations for WSCC operating transfer capability studies. The task force investigated various model parameters (e. g, induction motor models, motor inertia, multi-terminal DC, gas turbine, steam and hydro governors among others) before developing a recommendation that all operating study cases should model induction motors for approximately 20% of the system load. This recommendation was then benchmarked against a well-documented system disturbance, the August 10, 1996 collapse of the WSCC system. The task force is currently investigating additional load modeling parameters, and is working on developing a long-term load modeling recommendation for the WSCC system.

Pacific Gas and Electric Co. 1983-1997

- **Computer Model Development. 1985-1995.** Helped develop a revised Static VAr Compensator model for the WSCC transient stability program. This revised model incorporated a non-windup limiter on the firing angle control of the SVC. Also helped develop the "MaxFlow" program. This program is a DC powerflow model that uses linear programming techniques to determine the maximum flow on any particular system element for any possible combination of a defined list of system inputs. This model is especially useful in determining the system impact of transmission contracts that allow any load to be served from any generation source.

- **California – Oregon Transmission Project. 1985-1993.** Was the lead transmission planning engineer for PG&E performing transient stability simulations for the 500-kV California – Oregon Transmission Project. The California – Oregon Transmission Project is a 340-mile, 500-kV transmission line between Oregon and California. This project was placed in service in March of 1993.

- **California Simultaneous Import Studies. 1991-1994.** Performed, supervised or reviewed operating studies to determine simultaneous import capabilities into California from the Pacific Northwest and the Desert Southwest. For two years, served as chairman of the work group that undertook these studies. The study work group was comprised engineers from utilities in California, the Northwest, the Rocky Mountain region, and the Southwest.

- **Transmission Oriented Production Simulation. 1993-1994.** Lead PG&E representative on the WSCC Transmission Oriented Production Simulation Program Development Task Force. This task force developed a recommendation to WSCC management regarding program requirement to accurately model transmission system constraints in a production simulation program. In addition, this task force evaluated products on the market or under development to develop a recommendation to WSCC management regarding program

packages that could potentially meet the requirements developed in the first recommendation.

- **Area Planning. 1995-1997.** Responsible for all Area Transmission planning activities for PG&E's North Valley Division. This work included forecasting division transmission loads, basecase development, contingency analysis, problem identification, solution development, and recommendation to Management on the appropriate projects to maintain system reliability.

- **Simultaneous Transfer Limit Studies. 1997.** Served as a PG&E representative on Operating Capability Study Group (OCSG), a work group of utility engineers that was formed following the major WSCC system disturbances on July 2, July 3, and August 10, 1996. The OCSG developed modeling and study methodologies to ensure that simultaneous transfer limits determined from the studies would be conservative and not result in system collapse if a major disturbance were to occur while operating at the determined limits.

Power Systems Analysis Tools

- General Electric PSLF/PSDS - 9 *Years*
- WSCC Interactive Power Flow System (IPS) and WSCC Stability - *12 Years*
- Power Technologies, Inc. PSS/E - *2 Years*

Professional Associations and Committee Memberships

- WECC Disturbance Monitoring Work Group, Chair, 2004 – Present
- WECC Planning Coordination Committee, Member, 2004 - Present
- WECC/WSCC Technical Studies Subcommittee, Member, 2001 - 2005
- WSCC Modeling and Validation Work Group, Member, 1997 – 2001
- Sacramento Area Transmission Planning Group, Member, 1998 – 2001
- Sacramento Valley Study Group, Member, January 1999 – 2001
- Operating Capability Study Group (OCSG), Member, 1997
- Operating Studies Subcommittee (OSS), Member, 1994 –1997, 2001 - 2006
- WSCC Transmission Oriented Production Simulation Program T.F., Member, 1993–1994
- WSCC PAST Technical Studies Work Group, Chairman, 1991-1992
- WSCC PAST Subcommittee, Member, 1991-1992
- WSCC PAST Study Methodology Review Work Group, Member, 1991-1994
- WSCC Program Work Group, Member, 1985-1990
- IEEE Power Engineering Society, Senior Member

Publications and Presentations

"AN INTERIM DYNAMIC INDUCTION MOTOR MODEL FOR STABILITY STUDIES IN THE WECC" L. Pereira, D. Kosterev, P. Mackin, D. Davies, J. Undrill, and W. Zhu, IEEE Transactions on Power Systems, pgs 1108-1115, November 2002

"Grid Planning and Generator Interconnection In California", P. Mackin, EUCI Congestion Management Conference, Denver, CO; June 22-23, 2000

"Power System Stability Controls in a Restructured Industry – The California ISO Perspective", P. Mackin, IEEE/PES 1998 Summer Power Meeting, San Diego, CA; July 13-17, 1998

"SUBTRANSMISSION REDUCTION FOR VOLTAGE INSTABILITY ANALYSIS"; J. McCalley, J. Dorsey, J. Luini, P. Mackin, G. Molina; IEEE/PES 1992 Winter Power Meeting; New York, NY; January 26-30, 1992

DECLARATION OF
DAVID ASHUCKIAN

I, **DAVID ASHUCKIAN** declare as follows:

1. I am presently employed by the California Energy Commission in the Electricity Analysis Office of the Systems Assessments and Facilities Siting Division as Office Manager.

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

3. I helped prepare the staff testimony on **ELECTRICITY SUPPLY BENEFITS AND LOSS ANALYSIS RESULTING FROM CONVERSION OF THE LOS ESTEROS CRITICAL ENERGY FACILITY TO A COMBINED-CYCLE PLANT**
4. **SECTION**, for the LOS ESTEROS CRITICAL ENERGY FACILITY based on my independent analysis of the Application for Certification and supplements hereto, data from reliable documents and sources, and my professional experience and knowledge.

5. It is my professional opinion that the prepared testimony is valid and accurate with respect to the issue addressed therein.

6. 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: June 23, 2006 Signed: David A. Ashuckian

At: Sacramento, California

David A. Ashuckian
Statement of Qualifications

EDUCATION

- Second Bachelors, Mechanical Engineering, California State University Sacramento
- Associate of Science, Aviation Maintenance Technology, Sacramento City College
- Bachelor of Arts, Criminal Justice/Biology, California State University Sacramento,

MANAGEMENT TRAINING

- Effective Appraisals
- Creative Management
- Resolution Training
- Application Review
- Interview/Selection Criteria
- Facilitator Training
- Cross Train Working Groups
- Basic Supervision
- Contract Management
- Preventing Workplace Harassment

EXPERIENCE

- **13 Years of Supervisory/Management Experience**.

  2002-Present. Responsible for managing, directing, and supervising activities and technical staff of the Electricity Analysis Office. Directing data collection and analysis, reporting on trends, providing timely information to various federal, state, and local agencies and making recommendations to promote well functioning energy markets and sound public policy.

  1998-2002. Supervised the Light-Duty Vehicle and Infrastructure Program for the Energy Commission. Planning, directing, and supervising staff. Conducted technical analyses, developed policy recommendations, budgets and new programs. Managed vehicle, infrastructure, and research and development projects. Coordinated intra-governmental programs related to energy, air quality, and environmental impacts with local, state, and federal agencies.

  1996-1997. Supervised Air Resources Board staff, implementing mobile source elements of the State Implementation Plan, conducting research and analysis, coordinating Air District activities, planning and program development, technology assessment, and analyzing air quality and mobile source legislation.

  1993-1995. Acting Supervisor for research activities and staff of Caltrans' Advanced Vehicle and Alternative Fuels Program. Analyzing vehicle and fuel technologies, emissions impacts, personnel and resource management, contract development, management, and review, scheduling and task assignment. Participate as Department representative on technical committees. Initiate, develop, and respond to sensitive correspondence and legislation relating to transportation, air quality and alternative fuels.

- **16 Years of experience making effective presentations to elected officials, government executives, and industry stakeholders.**

  1998- Present. Representing the California Energy Commission at legislative hearings, Department of Energy Meetings in Washington D.C., Speaking at International Conferences held in the U.S., Canada, Philippines, and numerous other locations. Making presentations at meetings of other state agencies, the Commission, Air Districts, and other agencies throughout the United States.

  1995-1998. Represented the California Air Resources Board at Air District meetings and International Conferences. Made presentations to Board members, the California Environmental Protection Agency and U.S. Environmental Protection Agency.

  1990-1995 Represented the California Department of Transportation, speaking at International Transportation Conferences, made presentations at meetings with industry, Air Districts throughout California, and other state agencies.

- **14 Years of experience planning developing and managing complex and sensitive programs.**

  2002-Present. Responsible for providing critical information and independent, objective analyses of the electricity market, electrical systems operations and technical modeling which supports that analysis.

  1998-2002. Developed policy recommendations and implemented $5M Efficient Vehicle Incentive Program, $6M Alternative Fuel Infrastructure Program, and $4M Zero-emission vehicle market development program.

  1995-1998. Developed policy recommendations for implementing the Enhanced Inspection and Maintenance (Smog Check II) program. Development of Equivalent Zero-Emission, and Hybrid-electric vehicle Regulations.

  1992-1995. Initiated new Alternative Fuel Development program. Provided recommendations to the Deputy Director of Caltrans Headquarters to address questions from the Legislature regarding District activities. Coordinated Caltrans activities with Federal and local government through the California Alliance for Advanced Transportation Systems (CAATS).

- **16 Years of experience working with other agencies.** Contacts include the Department of Energy, Federal Highway Administration, United states Environmental Protection Agency, Members of the California Legislature, Bureau of Automotive Repair, California Air Resources Board, California Public Utilities Commission, California Independent System Operator, California Air Districts, and Metropolitan Planning Organizations. Mobile Source Emission Reduction Committee of the South Coast Air Basin, CALSTART. California electric and Natural gas utilities and various private industries.

- **Ability to provide new perspectives and implement new programs.**

  Extensive experience working with various organizations allows me to bring new perspectives to the organization. In addition, having both technical hands-on experience and an engineering background provides the ability for me to work well with staff at all levels of the organization and implement new initiatives.