ATTACHMENT A

Exhibit No.:
Date: October 20, 1998
Witness: James A. Ross

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UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation	Docket No. ER98-992-000 et al.

PREPARED DIRECT TESTIMONY OF

JAMES A. ROSS

ON BEHALF OF THE

COGENERATION ASSOCIATION OF CALIFORNIA

OCTOBER 1998

REGULATORY & COGENERATION SERVICES, INC.

PREPARED DIRECT TESTIMONY OF JAMES A. ROSS

ON BEHALF OF THE COGENERATION ASSOCIATION OF CALIFORNIA

I. INTRODUCTION AND SUMMARY OF CONCLUSIONS

Q PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A My name is James A. Ross. I am a member of the consulting firm of Regulatory & Cogeneration Services, Inc. ("RCS"), a utility rate and economic consulting firm. My business address is 500 Chesterfield Center, Suite 320, Chesterfield, Missouri, 63017. A statement of my qualifications is attached as Appendix A.

Q ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Cogeneration Association of California ("C.A.C.").

C.A.C. represents the power generation, power marketing and cogeneration operation interests of the following entities: Kern River Cogeneration Company; Sycamore Cogeneration Company; ARCO Western Energy ("AWE") Placerita I; AWE Placerita II; Midway Sunset Cogeneration Company; AWE Kern Field Projects; AWE Oxford Lease Projects; Mid-Set Cogeneration Company; Coalinga Cogeneration Company; Sargent Canyon Cogeneration Company; Salinas River Cogeneration Company; Texaco North Midway Cogeneration Project; Texaco McKittrick Cogeneration Project; Texaco Four Star Lost Hills Cogeneration Project; and Union Pacific Fuels, Inc.

Q **WHAT IS THE PURPOSE OF THIS TESTIMONY?**

A The purpose of this testimony is to respond to testimony filed by the California Independent System Operator ("ISO") in support of the Pro Forma Participating Generator Agreement ("PGA").

Q **PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.**

A My conclusions and recommendations are as follows:

The pro forma Participating Generator Agreement submitted by the ISO was designed for electric generators which are in the business of producing and selling electricity, i.e. "merchant plants." Qualifying Facilities were not built for the purpose of generating and selling electricity, but rather were built to produce steam and other forms of energy used for industrial purposes. Rules designed for merchant plants are ill-suited to the unique operating circumstances of Cogenerators.

It is my recommendation that the Commission order the ISO to develop a separate and independent pro forma Participating Generator Agreement for Qualifying Facilities, which takes into account the special circumstances of Cogenerators. Terms of the QF PGA should include the following

1. Only the Cogenerator's output which is available to fully participate in the market, like a merchant plant, should be subject to the ISO's tariffs and protocols.
2. The Cogenerator must be allowed greater flexibility in the scheduling of outages.

3. The ISO should not be permitted, by amending its tariffs and protocols, to unilaterally amend the PGA negotiated with a Cogenerator.

4. The Cogenerator should be allowed to terminate its PGA without FERC approval.

II. ISO PARTICIPATING GENERATOR AGREEMENT.

Q WHAT PURPOSE IS SERVED BY THE ISO PARTICIPATING GENERATOR AGREEMENT?

A. The PGA is used by the ISO to secure compliance with ISO Tariffs and Protocols.

Q. DOES THE PGA REQUIRE A PARTICIPATING GENERATOR TO ADHERE TO ALL ISO TARIFF PROVISIONS THAT CAN BE INTERPRETED BY THE ISO TO APPLY TO THAT GENERATOR?

A Yes, the PGA states that "...The Participating Generator wishes to be able to Schedule Energy and to submit Adjustment Bids, Supplemental Energy bids and bids for Ancillary Services to the ISO through a Scheduling Coordinator and, therefore, wishes to undertake to the ISO that it will comply with the applicable provisions of the ISO Tariff." This requirement also places an obligation on the Participating Generator to comply with all ISO protocols as well.

III. THE ISO PGA DOES NOT PROPERLY ACCOMMODATE COGENERATION OPERATIONAL CIRCUMSTANCES

Q **ARE THE C.A.C. COGENERATION PLANTS SUBJECT TO THE ISO TARIFFS AND PROTOCOLS?**

A Yes. Members of the C.A.C. are Qualifying Facilities ("QFs") which operate combustion turbines whose primary purpose is to supply steam for enhanced oil production. The particular entities which filed protests in this proceeding are Midway Sunset Cogeneration Company ("MSCC") and Texaco North Midway ("North Midway"). Both are QFs which supply steam for enhanced oil recovery. MSCC has purchase power agreements ("PPAs") with Southern California Edison Company ("Edison") and Pacific Gas and Electric Company ("PG&E") which establish the terms, conditions and obligations of its electrical power production operation associated with its steam obligations. Texaco North Midway has a purchase power agreement with Pacific Gas and Electric Company.

Q **ARE COGENERATORS CONFRONTED WITH OPERATIONAL CIRCUMSTANCES THAT DIFFER FROM THOSE OF A TYPICAL MERCHANT PLANT?**

A Yes. A typical merchant plant is designed to solely produce electrical power. Merchant plants can generally increase or decrease their production to accommodate the need for more or less electrical power on short notice. Moreover, changes to a merchant plant's scheduled maintenance outages solely impacts when the production of electrical power is produced.

On the other hand, a cogeneration facility is designed to produce both electrical power and process steam through a sequential process that ties the electrical and steam

production together. Accordingly, a cogenerator has additional operational considerations associated with its steam obligations. In many applications, the production of steam is the principle function of the cogeneration plant with the electrical power generated as a by-product. The cogenerator's steam obligations constrain the ability of the plant to change that portion of the electrical power generation that is tied to the steam production. Additionally, the cogenerator's maintenance outage may be directly tied to the time when the equipment using the process steam is scheduled for maintenance.

Q WHICH ASPECTS OF THE ISO TARIFF ARE OF CONCERN FOR A COGENERATOR?

A The ISO Tariff provisions that address maintenance outages, including coordination of those outages, and dispatch provisions are of particular concern. (There are aspects of the metering provisions that are also of concern, however it is my understanding that metering issues are to be addressed in a different proceeding.)

Q CAN YOU PROVIDE EXAMPLES OF OUTAGE PROVISIONS OF THE ISO TARIFF WHICH ARE OF CONCERN?

A Yes. The ISO's Outage Coordination Protocol (OCP) requires each generator to provide, annually and quarterly, the scheduled start and finish date for each outage at each generating

unit (OCP 2.2.1 & 2.2.2), and requires a generator to obtain approval of certain changes in the date of a previously scheduled outage (OCP 2.2.3 & 4.4.2). Planned outages are given priority over unplanned outages. (OCP 4.4.8). The ISO may delay its approval of an outage if it deems the request incomplete (OCP 4.4.3). Approval may be withheld for reasons of "System Reliability or Security." (OCP 2.2.3, 3.2.1, & 4.4.4). No outage may be initiated without the ISO's approval (OCP 4.4.7 & 4.4.9).

Outages of cogenerators may need to be coordinated with the production process to which they are connected. A cogenerator may be able to give the ISO advanced information about outages but not on the kind of timetable and with the level of detail demanded by the Outage Protocol. Outages are dictated by production needs of the industry and may change over time. A cogenerator may be in a situation where repairs to the generating unit are essential, if production schedules are to be maintained, and it cannot await ISO approval of an outage without experiencing significant losses in production.

Q CAN YOU PROVIDE EXAMPLES OF DISPATCH PROVISIONS OF THE ISO TARIFF WHICH ARE OF CONCERN?

A Sections 5.1.1 and 5.1.2 of the ISO tariff require Participating Generators to comply with ISO tariffs and protocols. Section 5.1.3 of the tariff allows the ISO to assume supervisory control of generating units to maintain the reliability of the grid. Dispatch Protocols give the ISO responsibility for dispatching generating units to address imbalances, to relieve Congestion

and satisfy reliability criteria. (DP 8.1.1). The ISO may order generating units to increase or decrease generation to alleviate congestion (DP 8.3 - 8.5), to provide balancing (DP 8.6), to satisfy reserve requirements (DP 8.7), and to manage over-generation conditions (DP 8.8). Participating generators are required to "comply fully and promptly with the ISO's Dispatch Instructions", the only exception being for "public health or safety" which does not include "[s]hedding load for a System Emergency." (DP 9.2.1, 9.4.1). Moreover, the ISO is proposing that sanctions be developed. (DP 9.5.2).

It should be clearly understood that C.A.C. understands that in emergency circumstances all generators must obey ISO instructions to shut down or divert energy to or from the grid. However, the ISO dispatch procedures should recognize that unduly interfering with the level of output for cogenerating facilities that are not actively participating in the market can adversely impact the commercial process supported by the cogenerator. Compliance with the Dispatch protocols could create a severe hardship for the company and interfere with the commercial operation of the facility.

Q **HAS THE ISO PROPOSED TO EXEMPT CERTAIN QFs OPERATING UNDER PPAs FROM THE SECTION OF THE TARIFF THAT DEFINES THE RELATIONSHIP BETWEEN THE ISO AND GENERATORS?**

A Yes. The ISO has proposed that its tariffs and protocols are not necessarily applicable to all generators. For example, Section 5.1.4 of the ISO tariff provides that a generating unit whose output is limited to 10 MW, all of which is sold to the interconnecting UDC or to

customers connected to the UDC system, need not comply with Section 5 of the tariff (except for Section 5.6 which addresses system emergencies).

However, neither MSCC nor North Midway meet the conditions of Section 5.1.4. Both North Midway and MSCC are larger than 10 MW and do not sell all of their output to the interconnecting UDC.

Q WOULD AN EXEMPTION FOR MSCC AND NORTH MIDWAY THAT IS SIMILAR TO THE ONE PROVIDED IN SECTION 5.1.4 ELIMINATE THE CONFLICT BETWEEN THE COGENERATOR'S OPERATIONAL CONSTRAINTS AND THE TERMS AND CONDITIONS OF THE ISO PGA?

A Yes. However, a more appropriate solution to the problem is to develop a separate Qualifying Facility PGA that specifically addresses the operational consideration of all cogenerators. There will be other cogenerators in the same position as MSCC and North Midway in the next few years. Power Purchase Agreements covering the operations of other Qualifying Facilities will be expiring. These additional QFs will be placed in the position of: (1) requiring special exemptions; or (2) being forced to sign a PGA that is inconsistent with their operational characteristics; or (3) having to stop operating. Accordingly, the appropriate solution is a separate Participating Generator Agreement that is more carefully sculpted to fit the needs of Qualifying Facilities. There are over 600 QFs in California. This is a significant population of generators whose operational characteristics are not being addressed by the ISO PGA.

Q. WHAT SHOULD BE THE CHARACTERISTICS OF A QF PGA?

A. A Cogenerator's ability to fully participate in the sale of electricity into the market structure is limited because Cogenerators were established primarily to serve the steam and/or electrical requirements of an existing entity (i.e., to provide electricity and/or thermal energy for a process that is usually on the same site as the Cogenerator). In some instances, the Cogenerator may be at a different site than the production process, which would require the Cogenerator to use the ISO Controlled Grid to transmit the electricity to the process. The new QF PGA should address the circumstances under which the Cogenerator can participate in the Day-Ahead, Hour-Ahead and Real-Time Markets.

Dispatch

The QF PGA should allow the ISO to exercise dispatch authority over any electrical energy that fully participates in the market, while protecting from undue ISO interference the electrical energy needed by the Cogenerator to serve on-site electrical load, the electrical energy to satisfy PPA obligations, and the steam obligations of the Cogenerator. This could be accomplished by distinguishing from a Cogenerator's total electrical output that portion of the electrical output that is fully participating in the market. The following definitions provide the basis for making such a distinction:

1. **Market Available Capability** is the hourly capacity and associated energy which is sold over the ISO controlled grid into the market with a bid price greater than zero.

It is capability in excess of the capacity and associated energy that is: (i) coupled to the thermal obligations of the QF Participating Generator; (ii) used by the thermal host's production process; and (iii) sold pursuant to a power purchase agreement.

2. **Non-Market Capability** is the hourly capacity and associated energy coupled to the thermal host's production process, and/or that sold pursuant to a power purchase agreement.

3. **Process Capability** is the hourly capacity and associated energy coupled to the thermal host's production process.

4. **Total Unit Capability** is the sum of the Market Available Capability and the Non-Market Capability.

Each of these defined "Capabilities" would be identified in the QF PGA and it would be the responsibility of the Cogenerator to fully participate in the market with only the Market Available Capability. The Cogenerator would be required to inform the ISO of any change in any of the unit's capabilities and to modify its participation in the ISO market accordingly. This approach would provide the ISO with control over any portion of the QF's generation that is fully participating in the market and provide the QF with the assurance that its non-market electrical generation (e.g., that portion of its generation tied to steam obligations) can be operated in a manner similar to its operation before the ISO was established.

<u>Outages</u>

The QF PGA would give a Cogenerator greater flexibility to re-schedule outages. I recommend that Cogenerators be allowed to give the ISO no less than 24 hours advance notice of any maintenance outage requiring less that a day to complete; a request for a maintenance outage should be deemed approved unless the ISO notifies the Cogenerator of its objection at least twelve hours before the outage is scheduled to occur.

The ISO should not be permitted to request a Maintenance Outage or a change to planned Maintenance Outage unless the request is necessary to avoid an immediate or imminent System Emergency. When, after exhausting all other means to avoid a System Emergency, the ISO determines that a change in the outage schedule is necessary, the ISO should be required to provide notice of its request to the Cogenerator at the earliest possible opportunity.

Q. **DO YOU HAVE OTHER CONCERNS WITH THE PRO FORMA PGA?**

A. Yes.

Agreement Should Supersede Tariff.

A significant concern is with the PGA's provision that amendments to the ISO's tariffs and protocols will supersede the terms of the Agreement. The ISO could single-handedly nullify negotiated contractual terms by filing amendments to its tariff. This is particularly harmful

to Cogenerators whose situation does not fit the model of a merchant plant and may want to negotiate terms which accommodate its unique circumstances.

Termination

Another concern is with the Termination provisions of the PGA. Cogenerators may, by signing the PGA, become subject to the FERC's jurisdiction. Cogenerators should be willing to abide by the ISO's operating rules consistent with the QF PGA to the extent they have electricity available for sale on the grid. If the Cogenerator is no longer needed for the industrial process it serves, however, it should be allowed to withdraw from the market without obtaining the approval of the FERC.

Q HAS C.A.C. DISCUSSED ITS CONCERNS WITH THE ISO?

A Yes. C.A.C. has, on numerous occasions, expressed its concerns regarding the PGA to the ISO. Moreover, C.A.C. has repeatedly attempted to work with the ISO to develop a new Participating Generator Agreement for QFs. C.A.C. and the ISO have met on several occasions to discuss alternatives. While the ISO has acknowledged that a problem exists and has indicated a willingness to discuss the problem, the problem remains unresolved as of the date for filing C.A.C. testimony in this proceeding.

Q **WHAT IS YOUR RECOMMENDATION FOR RESOLVING THE CONCERNS YOU HAVE DISCUSSED?**

A It is my recommendation that the Commission order the ISO to develop a separate and distince pro forma Participating Generator Agreement for Qualifying Facilities. The QF PGA should take into account the special circumstances of Cogenerators. The Commission should allows individual QFs to negotiate or re-negotiate a PGA with the ISO consistent with the terms of the new QF PGA.

Q **DOES THIS CONCLUDE YOUR TESTIMONY?**

A Yes, it does.

QUALIFICATIONS OF JAMES A. ROSS

Mr. Ross is a graduate of the University of Missouri at Rolla, with the degrees of Bachelor of Science in Electrical Engineering and Master of Science in Engineering Management. After graduation in 1971, he was employed by Union Electric Company, a utility which provides service to Metropolitan St. Louis, Missouri, and surrounding areas. While assigned to the Power Operation Function, Mr. Ross was responsible for system operation-related engineering evaluations which included long-range and intermediate planning studies, various economic studies and computer simulation of system operations. In 1977 he was assigned to the Corporate Planning Function with responsibilities in capacity planning coordination activities and special studies.

Mr. Ross served on Edison Electric Institute committees and task forces, and participated in reliability, capacity planning, power plant siting and contract negotiation activities.

Subsequent to his approximate ten-year employment with Union Electric Company, Mr. Ross entered the field of utility rate and economic consulting. His experience includes evaluations related to various aspects of utility ratemaking, utility operation, utility planning, rate forecasting, contract negotiations and cogeneration activities. Mr. Ross is a member of Regulatory & Cogeneration Services, Inc. ("RCS"), utility rate and economic consultants. Through its offices in Chesterfield, Missouri and Vancouver, Washington, RCS provides a wide range of utility rate and economic consulting services. The members of RCS have extensive utility operation, planning, and

rate-related experience and have for several years been engaged in providing electric and gas utility-related consulting services to some of the largest corporations in the United States.

Mr. Ross has testified as an expert witness on utility rates, planning, contract negotiations and related matters before the regulatory commissions of Alabama, Arizona, California, Colorado, Florida, Idaho, Illinois, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Nevada, New York, Pennsylvania, South Carolina, Texas, Utah and Wyoming.

CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010, I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, D.C. this 18th day of September, 2000.

Michael Alcantar (sea)

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