

AFFIDAVIT OF M. D. WHYTE

State of California )  
County of Los Angeles )

I, M. D. Whyte, being duly sworn say:

(1) That I am an employee of Southern California Edison Company, Manager of Electric System Planning. My present responsibilities include: generation planning, system load forecasts, load management program planning and evaluation, and transmission and subtransmission planning. I am duly authorized to make the statements contained herein.

The information submitted to the Nuclear Regulatory Commission ("NRC") and Department of Energy ("DOE") by letter dated January 14, 1980 as "Enclosure A, Analysis of Reliability Impacts Resulting from San Onofre Unit 1 TMI Backfit Outage" and supporting appendices was prepared under my direction and supervision. If called as a witness, I could testify concerning the contents of that submittal.

(2) By letter dated January 4, 1980 from Harold R. Denton, of the Nuclear Regulatory Commission, to Mr. James H. Drake of Southern California Edison, the Company was advised that if it desired to seek an extension of time for implementation of the Category A items of Lessons Learned Short Term Requirements relative to the Three Mile Island accident based on adverse reliability impacts, certain specified

Exhibit B

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information should be submitted to both the Nuclear Regulatory Commission and the Department of Energy by January 15, 1980. Licensees have elected to request for reliability reasons that implementation of Category A items be deferred beyond January 31, 1980. In furtherance of that end, the information identified in the above-referenced letter of January 4, 1980 was submitted on January 15, 1980 to the Department of Energy and the Nuclear Regulatory Commission by letter dated January 14, 1980 from R. Dietch of Southern California Edison to Harold R. Denton of the Nuclear Regulatory Commission.

(3) A portion of Enclosure A of the January 14, 1980 submittal entitled "Analysis of Reliability Impacts Resulting from San Onofre Unit 1 TMI Backfit Outage" is attached hereto as Attachment A and by this reference is incorporated herein as though set forth in full. As more fully discussed in Attachment A, based on the loads and resources data contained in that submittal of January 14, 1980, it is concluded that:

(a) An outage of SONGS Unit 1 during the month of February would adversely impact the reliability of the combined electric power systems in the State of California and reduce California's ability to provide assistance to the Pacific Northwest.

(b) Any outage of SONGS Unit 1 in addition to the outage currently planned for refueling and maintenance in April 1980, or any delay in the

commencement of the refueling and maintenance outage beyond April 1, 1980, would adversely impact the reliability of the combined electric power systems in the State of California during summer 1980 by delaying the return-to-service date following SONGS Unit 1 refueling into the peak load summer period.

(c) Reliability of the electric power systems in the State of California and the Pacific Northwest can be enhanced by performing the TMI backfit work and the refueling/maintenance work concurrently. Such concurrent scheduling will effectively add 1308 megawatt-weeks of generating capacity to the region in 1980, which directly enhances reliability.

(4) The letter of January 14, 1980 to me from James L. Mulloy, Chairman, Western Systems Coordinating Council (Exhibit C to the Answer to Order to Show Cause) was based at least in part on the same information submitted to the NRC and DOE on January 15, 1980.

(5) It is my conclusion, based on the information contained in the submittal of January 14, 1980 as well as the conclusion of the Western System Coordinating Council that a shutdown of SONGS Unit 1 during the month of February 1980 would adversely impact reliability in

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(2) By letter dated January 4, 1980 from Harold R. Denton, of the Nuclear Regulatory Commission, to Mr. James H. Drake of Southern California Edison, the Company was advised that if it desired to seek an extension of time for implementation of the Category A items of Lessons Learned Short Term Requirements relative to the Three Mile Island accident based on adverse reliability impacts, certain specified

information should be submitted to both the Nuclear Regulatory Commission and the Department of Energy by January 15, 1980. Licensees have elected to request for reliability reasons that implementation of Category A items be deferred beyond January 31, 1980. In furtherance of that end, the information identified in the above-referenced letter of January 4, 1980 was submitted on January 15, 1980 to the Department of Energy and the Nuclear Regulatory Commission by letter dated January 14, 1980 from R. Dietch of Southern California Edison to Harold R. Denton of the Nuclear Regulatory Commission.

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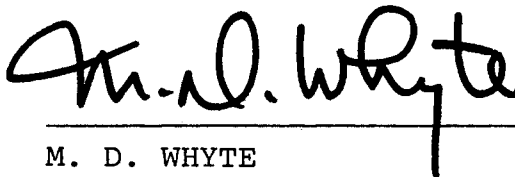
(c) Reliability of the electric power systems in the State of California and the Pacific Northwest can be enhanced by performing the TMI backfit work and the refueling/maintenance work concurrently. Such concurrent scheduling will effectively add 1308 megawatt-weeks of generating capacity to the region in 1980, which directly enhances reliability.

(4) The letter of January 14, 1980 to me from James L. Mulloy, Chairman, Western Systems Coordinating Council (Exhibit C to the Answer to Order to Show Cause) was based at least in part on the same information submitted to the NRC and DOE on January 15, 1980.

(5) It is my conclusion, based on the information contained in the submittal of January 14, 1980 as well as the conclusion of the Western System Coordinating Council that a shutdown of SONGS Unit 1 during the month of February 1980 would adversely impact reliability in

California and would reduce the ability of California to aid the Pacific Northwest with respect to its reliability problems. As stated by the Western Systems Coordinating Council, (Exhibit C), the Pacific Northwest has experienced some curtailment this season and the shutdown of SONGS Unit 1 in February 1980 would limit California's ability to aid in avoiding further such curtailments.

(6) Based on reliability considerations, the shutdown of SONGS Unit 1 for implementation of Category A action items and the shutdown for refueling now scheduled for April 1, 1980 should be combined and scheduled for March 15, 1980.

  
M. D. WHYTE

Subscribed and sworn to before  
me this 18th day of January,  
1980.

  
Notary Public

In and for the County of Los  
Angeles, State of California

My Commission Expires June 8, 1981

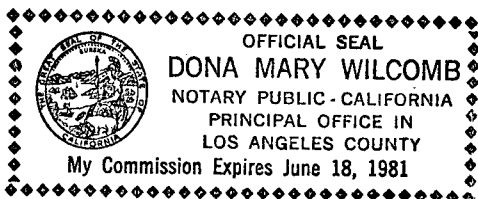


Exhibit B

## Enclosure A

### Analysis of Reliability Impacts Resulting from San Onofre Unit 1 TMI Backfit Outage

#### Introduction

The Nuclear Regulatory Commission (NRC) has ordered Southern California Edison to remove the San Onofre Nuclear Generating Station (SONGS) Unit 1 from service by January 31, 1980, in order to implement specified TMI Lessons Learned Short Term requirements. Implementation of such requirements which have not been completed by January 31, 1980 requires shutdown of the unit for an estimated duration of two to three weeks. This outage would be in addition to the currently planned refueling and maintenance outage of approximately 10 weeks now scheduled to commence April 1980. The following addresses the system and regional reliability implications of removing SONGS Unit 1 from service on or after January 31, 1980 to accomplish the TMI backfit work.

#### Conclusions

From analysis of loads and resources data as discussed in the following appendices, it is concluded that:

- (1) An outage of SONGS Unit 1 during the month of February would adversely impact the reliability of the combined electric power systems in the State of California and reduce California's ability to provide assistance to the Pacific Northwest.
- (2) Any outage of SONGS Unit 1 in addition to the outage currently planned for refueling and maintenance in April 1980, or any delay in the commencement of the refueling and maintenance outage beyond April 1, 1980, would adversely impact the reliability of the combined electric power systems in the State of California during summer 1980 by delaying the return-to-service date following SONGS Unit 1 refueling into the peak load summer period.
- (3) Reliability of the electric power systems in the State of California and the Pacific Northwest can be enhanced by performing the TMI backfit work and the refueling/maintenance work concurrently. Such concurrent scheduling



will effectively add 1308 megawatt-weeks of generating capacity to the region in 1980, which directly enhances reliability.

### Recommendation

It is recommended that the SONGS Unit 1 shutdown be delayed until March 15, 1980. This will provide the best possible opportunity to minimize power system reliability problems in both California and the Pacific Northwest.

### Discussion

Loads and resources data for SDG&E, SCE and the other major electric power systems of the State of California have been analyzed to determine the impact of an outage of SONGS Unit 1 for TMI backfit work. The data used in this analysis are documented in Appendices 1 through 11 attached to this report. (Note: The appendices are organized in accordance with the enclosure to Mr. Harold R. Denton's letter of January 4, 1980, to Mr. James H. Drake entitled "Information Required for Evaluation of Adverse Electric System Reliability Impact.") The following adverse impacts on system reliability have been determined.

### February 1980 Statewide Reliability

The statewide loads and resources analysis as presented in Appendix 10 indicates that the combined electric power systems of the State will be operating with reduced reserves during this period. Reserve margins after accounting for average forced outages are currently projected to be 8.6% under normal weather and load conditions assuming SONGS Unit 1 is on-line. The primary factors which contribute to the problem of reduced margins during February, 1980 are 1) the unavailability of the Diablo Canyon Nuclear Power Plant, 2) the planned outage of the Rancho Seco Nuclear Power Plant, and 3) the aggressive maintenance program by the California utilities required to mitigate extremely low margins anticipated during the summer of 1980. The additional outage of SONGS Unit 1 would further exacerbate the reliability problems.

The projected margins are sensitive to several assumptions: in particular, forced outages and weather conditions. Forced outages vary widely about the average. The analysis in Appendix 4 indicates that loads during the winter can be expected to vary as much as 3 to 4% due to the impact of adverse weather. Variations in these parameters could severely reduce the already tight margins.

Scheduling of the TMI backfit work concurrently with the planned refueling and maintenance outage on March 15 would prevent further deterioration of Statewide reliability.

#### Regional Support to the Pacific Northwest

The Pacific Northwest Region of the United States is currently experiencing energy reserve margins at critically low levels. These problems are caused by continued below average-year hydro runoff conditions in that region for the fourth consecutive year.

As of the beginning of January 1980, an 80% of average-year runoff was projected for the region. An extended spell of cold and dry weather could cause energy shortages requiring regional rationing of available energy supplies.

As indicated above, the State of California is projecting low winter margins even with SONGS Unit 1 in-service. Should the Pacific Northwest need emergency assistance to deal with energy problems in their region during February, the California utilities would only be able to provide a minimal amount of assistance. An outage of SONGS Unit 1 during this period would further limit the extent to which assistance could be provided to the Northwest.

#### Impact on Other Maintenance and Reliability

The California utilities currently have aggressive programs of generator unit maintenance and betterments in progress in anticipation of the summer 1980 loads. An outage of SONGS Unit 1 in addition to that currently planned could force the deferral of some of this planned maintenance thus jeopardizing the reliability of those units for which maintenance was deferred. The result would be higher forced outages during the summer of 1980, already forecast as a critical period of low reserves for the State of California.

#### Impact of Delays in the Refueling and Maintenance Outage for SONGS Unit 1

The analysis of loads and resources contained in Appendix 10 indicates that capacity margins after average forced outages in California during the summer of 1980 will range as low as 5%. Therefore, the SONGS Unit 1 refueling and maintenance outage must be completed prior to June 15 (when summer peaks can begin to be expected) to enhance the reliability of the combined electrical systems and to reduce the likelihood of rotating service interruptions which is the final stage of California's 3-stage plan for dealing with deficiencies in generating capacity.

Cost Implications of TMI Backfit Outage

While SCE and SDG&E recognize that the decision on a delay of the TMI backfit outage at SONGS Unit 1 is to be based on equipment availability and local and regional system reliability considerations, it is the companies' position that any such decision should be made with an understanding of the impact on foreign oil usage and fuel costs. As detailed in Appendix 11, a three-week outage of SONGS Unit 1 in addition to the scheduled refueling outage would increase the requirements for imported oil in the first quarter of 1980 by approximately 360,000 barrels at a current-year differential fuel cost to the ratepayers of approximately 9 million dollars. However, the utilities plan to combine the retrofit outage with an earlier refueling outage will reduce the added cost to the ratepayers to approximately \$400,000 due to loss of residual energy in the core.

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# Western Systems Coordinating Council

JAMES L. MULLOY  
CHAIRMAN  
LOS ANGELES DEPT. OF WATER & POWER  
P. O. BOX 111  
LOS ANGELES, CA 90051  
TEL.: (213) 481-5651

January 14, 1980

Mr. M. D. Whyte  
Manager, Electric System Planning  
Southern California Edison Company  
P.O. Box 800  
Rosemead, California 91770

Dear Mr. Whyte:

As Chairman of the Western Systems Coordinating Council, (WSCC), I requested the WSCC Technical Staff to review your submittal to Mr. H. R. Denton of the Nuclear Regulatory Commission discussing the impact on system reliability incurred from a special outage of the San Onofre Nuclear Generating Unit No. 1 in early February to complete the remaining post-TMI retrofit requirements.

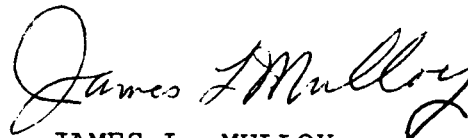
The Technical Staff reviewed the submittal and concurs with your conclusion of the impact on system reliability. Combining the two outages in mid-March would increase the availability of one of the larger units of the region during this period of tight reserve and energy margins, and therefore, enhance system reliability. In addition, the combined outage would further the Nation's objective to minimize the industries oil burn requirements with a savings of approximately 360,000 barrels of oil.

Of particular concern is the current situation in the Pacific Northwest where the runoff, as of January 1, 1980, is projected to be 80 percent of the annual average. As you may be aware, certain industries in that area have already experienced service curtailments as a result of the need to overdraft storage reservoirs and the prolonged outage of the Trojan Nuclear Facility. If the remainder of the winter is cold and dry, energy shortages in the Pacific Northwest could be experienced starting in February, and the outage of San Onofre prior to return to service of Rancho Seco would certainly reduce the ability of the California systems to provide any emergency support to the Northwest should the need arise.

January 14, 1980

Based on the aforementioned, we believe that your alternative of accelerating commencement of the scheduled refueling outage from early April to mid-March to accommodate both refueling and the retrofit simultaneously would enhance the reliability of the California and Northwest systems during a period of tight margins.

Sincerely,



JAMES L. MULLOY  
Chairman, WSCC

cc: Mr. Dennis Eyre.  
Administrative Manager  
WSCC