BEFORE THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Application of SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS & ELECTRIC COMPANY for a Class 104(b) License to Acquire, Possess, and Use a Utilization Facility as Part of Unit No. 1 of the San Onofre Nuclear Generating Station	)	DOCKET NO. 50-206 Amendment No. 155

SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS & ELECTRIC COMPANY, pursuant to 10 CFR 50.90, hereby submit Amendment Application No. 155.

This amendment consists of Proposed Change No. 194 to Provisional Operating License No. DPR-13. Proposed Change No. 194 modifies the Technical Specifications incorporated in Provisional Operating License No. DPR-13 as Appendix A.

Proposed Change No. 194 is a request to revise Appendix A Technical Specifications to modify the positive barrier isolation requirements between the feedwater condensate system and the reactor coolant system due to power supply modifications to a recirculation valve.

In the event of a conflict, the information in Amendment Application No. 155 supersedes the information previously submitted.

Based on the significant hazards analysis provided in the Description of Proposed Change and Significant Hazards Analysis of Proposed Change No. 194, it is concluded that (1) the proposed change does not involve a significant hazards consideration as defined in 10 CFR 50.92, and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change.

Pursuant to 10 CFR 170.12, the fee of $150 is herewith remitted.

Subscribed on this 7th day of November, 1988.

Respectfully submitted,

SOUTHERN CALIFORNIA EDISON COMPANY

By: Kenneth P. Baskin
Kenneth P. Baskin
Vice President

Subscribed and sworn to before me this 7th day of November, 1988.

C. Sally Sebo
Notary Public in and for the County of
Los Angeles, State of California

OFFICIAL SEAL
C. SALLY SEBO
Notary Public-California
LOS ANGELES COUNTY
My Comm. Exp. Apr. 20, 1990

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of SOUTHERN CALIFORNIA EDISON COMPANY and SAN DIEGO GAS & ELECTRIC COMPANY (San Onofre Nuclear Generating Station Unit No. 1	)))))	Docket No. 50-206

CERTIFICATE OF SERVICE

I hereby certify that a copy of Amendment Application No. 155 was served on the following by deposit in the United States Mail, postage prepaid, on the 7th day of November, 1988.

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DESCRIPTION AND SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS
OF PROPOSED CHANGE NO. 194 TO THE TECHNICAL SPECIFICATIONS
PROVISIONAL OPERATING LICENSE NO. DPR-13

This is a request to revise Section 3.3.2, "Shutdown Status" and the Basis for Section 3.7, "Auxiliary Electrical Supply" of Appendix A Technical Specifications for the San Onofre Nuclear Generating Station, Unit 1 (SONGS 1).

DESCRIPTION OF CHANGES

In order to eliminate a single failure susceptibility in the recirculation system, the power supply for recirculation valve MOV-358 will be changed to be included on the Uninterruptible Power Supply (UPS) for MOV-850C. The design modifications to accommodate this change in power supply require revision to Technical Specification 3.3.2 which defines the "positive barrier" requirements between the feedwater condensate system and the piping connections to the reactor coolant system. Specification 3.3.2.A(1) will be revised to eliminate the specific requirement for MOV-850C, and replace the words "safety switches" with "supply breakers." In addition the basis for Technical Specification 3.7 will be revised to reflect the new service requirement for the UPS.

EXISTING TECHNICAL SPECIFICATION

See Attachment 1

PROPOSED TECHNICAL SPECIFICATION

See Attachment 2

SIGNIFICANT HAZARDS CONSIDERATION ANALYSIS

As required by 10 CFR 50.91(a)(1), this analysis is provided to demonstrate that a proposed license amendment to implement technical specifications associated with modifying the positive barrier requirements for motor operated valves at SONGS 1 represents a no significant hazards consideration. In accordance with the three factor test of 10 CFR 50.92(c), implementation of the proposed amendment was analyzed using the following standards and found not to: 1) involve a significant increase in the probability or consequences for an accident previously evaluated; or 2) create the possibility of a new or different kind of accident from any accident previously evaluated; or 3) involve a significant reduction in a margin of safety.

Discussion

By letters dated April 5, 1988 and June 21, 1988, SCE provided to the NRC descriptions of modifications associated with previously identified recirculation system single failures. SCE committed to implement the following design modifications in the recirculation system during the Cycle 10 refueling outage:

1. Change the power supply for recirculation valve MOV-358 to be included on the Uninterruptible Power Supply (UPS) for safety injection isolation valve MOV-850C, and

2. Provide a new supply breaker for MOV-850C downstream of the inverter output breaker and transfer switch to support maintenance activities and testing of the valves.

In review of the technical specifications to evaluate any impact from these modifications, it was determined that the positive barrier isolation requirements between the feedwater and RCS defined by Specification 3.3.2 would require revision. MOV-850C serves as one of the two isolation barriers on a section of piping between the feedwater system and the RCS, and thus is subject to the provisions of Specification 3.3.2. In accordance with these provisions, the inverter output breaker feeding MOV-850C must be open whenever fuel assemblies are in the vessel and the RCS pressure is less than 500 psig. With the addition of MOV-358 to the same inverter, opening of the inverter output breaker would remove power to MOV-358 as well as MOV-850C. This configuration is not necessary nor desirable because MOV-358 is not subject to the positive barrier requirements of Specification 3.3.2. For this reason, individual supply breakers will be provided for both MOV-850C and MOV-358 such that control power can be removed from MOV-850C without impacting MOV-358. The existing and proposed power supply configurations for MOV-358 and MOV-850C are illustrated in Figure 1.

For clarification of the new service requirements for the UPS, the Basis for Technical Specification 3.7 will be revised to reference that correct operation of the recirculation system is assured by the emergency power supply for MOV-358, namely, the UPS.

Analysis

Conformance of the proposed amendments to the standards for a determination of no significant hazard as defined in 10 CFR 50.92 (three factor test) is shown in the following:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   RESPONSE: NO

   The Technical Specification changes associated with the MOV-358 power supply design changes will not impact the manner in which positive barriers between the feedwater system and the RCS are established or maintained. Further, the addition of MOV-358 onto the UPS for MOV-850C has been evaluated as part of the single failure analysis documented in the June 21, 1988 letter to the NRC. The results of this evaluation concluded the UPS has sufficient power to supply the most limiting load profile for operation of MOV-850C and MOV-358 as follows:

   - Safety Injection on Demand
   - Loss of Offsite Power
   - 11-Second Delay to Start Emergency Diesels

- Train 2 Diesel Fails to Start
- MOV-850C Opens (to allow injection flow to loop C)
- MOV-358 Opens at 30 Minutes (to permit recirculation)
- MOV-850C Closes

SCE credits operator action to restore power to 480V Bus No. 3, thus no longer requiring the UPS for operation of MOV-358, in the event that recirculation is initiated beyond 30 minutes. With MOV-358 powered by the UPS, electrical independence will be provided from the two redundant recirculation valves MOV-356 (Train A) and MOV-357 (Train B), thereby preventing a single failure from disabling the power supply for more than one valve.

Based on the above, operation of the facility in accordance with this proposed change will not impact the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

RESPONSE: NO

The design changes associated with this proposed change have been reviewed in consideration to previously evaluated accidents. This proposed change does not impact the function of the associated equipment, only the power supply for the equipment. Therefore, the previous accident analyses which are based on the function of the equipment are not impacted. As part of the single failure analysis, the ability of the UPS to supply power to both MOV-850C and MOV-358 was evaluated under the most limiting sequence of events and determined to be acceptable. Therefore, it is concluded that operation of the facility in accordance with the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed change involve a significant reduction in a margin of safety?

RESPONSE: NO

This proposed change will not impact the manner in which positive barriers between the feedwater system and the RCS are established or maintained. The design changes associated with this proposed change will include supply power to MOV-358 through the MOV-850C UPS. The UPS has been analyzed and determined to have adequate capacity to supply the most limiting sequence of events for these two valves. In addition, thermal overload protection has been evaluated with consideration to the revised circuit configuration and breaker sizes to ensure compliance with the requirements of Regulatory Guide 1.106. The revised circuit configuration maintains the bypass of the existing thermal overload relays of the motor starters. Based on these considerations, it is concluded that operation of the facility in accordance with this proposed change will not involve a significant reduction in a margin of safety.

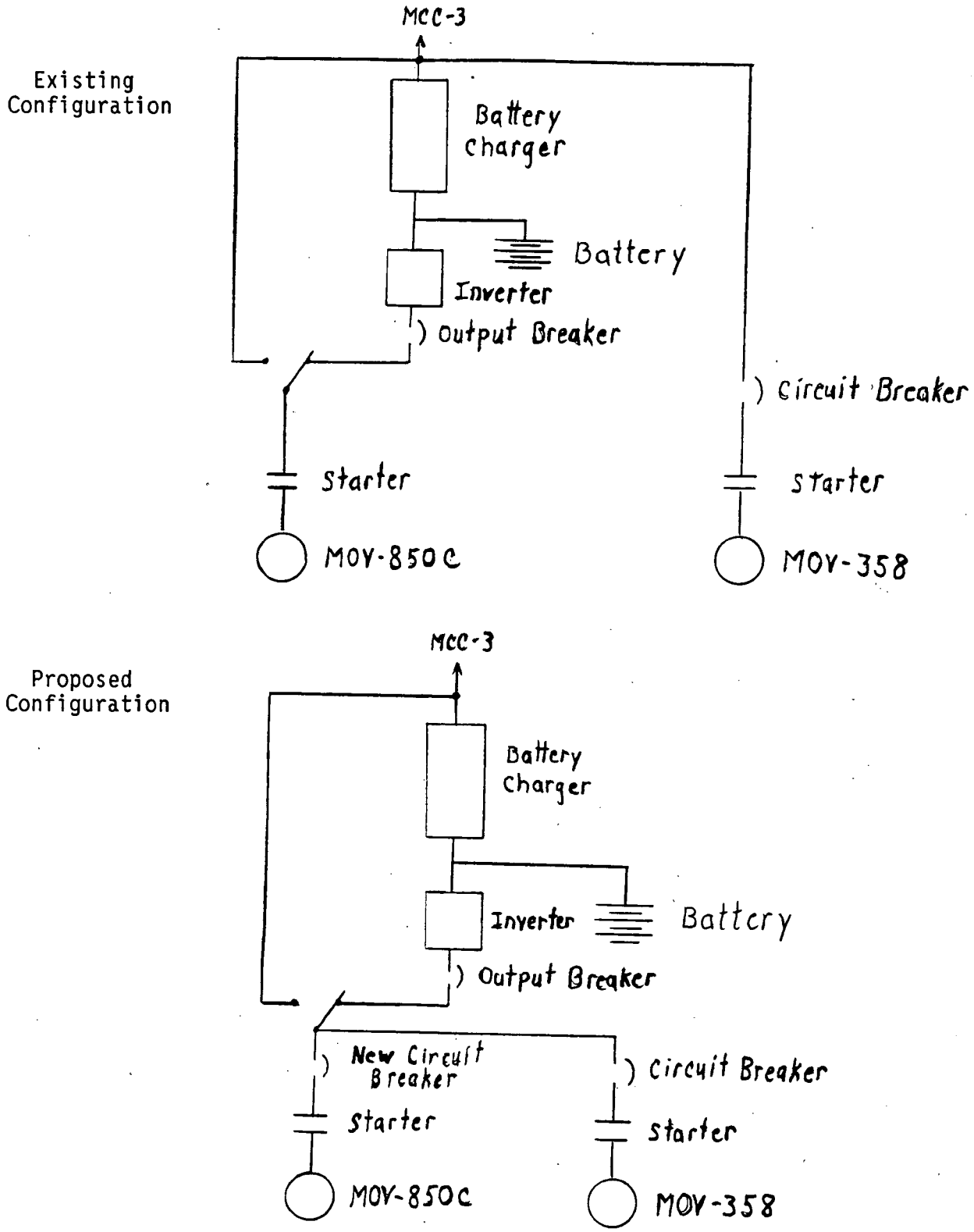
SAFETY AND SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Based on the above analysis, it is concluded that: (1) Proposed Change No. 194 does not involve a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change.

Attachment 1 - Existing Specifications
Attachment 2 - Proposed Specifications

MJT:0160n

FIGURE 1 - EXISTING AND PROPOSED
POWER SUPPLY CONFIGURATIONS FOR UPS



ATTACHMENT 1

EXISTING TECHNICAL SPECIFICATIONS

3.3.2 SHUTDOWN STATUS

APPLICABILITY: Applies to piping connections between the feedwater condensate system and the reactor coolant system.

OBJECTIVE: To preclude injection of feedwater condensate into the reactor coolant system when the reactor is shut down and to preclude the potential for overpressurization when water solid.

SPECIFICATION:

A. When reactor fuel assemblies are in the vessel and the reactor coolant pressure is less than 500 psig, two "positive barriers" shall be provided between the feedwater condensate system and the piping connections to the reactor coolant system. Additionally, when the reactor coolant system is water solid at less than 500 psig, two positive barriers shall be provided between the safety injection system and piping connections to the reactor coolant system. A "positive barrier" is defined as follows: 103 5/23/88

(1) Motor Operated Valves

When closed and tagged with safety switches open, except that power may be restored during no-flow tests of the safety injection system (Specification No. 4.2). For MOV 850C, the three (3) pole double throw switch must be connected to the inverter with the inverter output breaker open. 34 4/1/77

(2) Pneumatic/Hydraulic Operated Valves

When closed and the condition tagged with the respective hydraulic block valve closed except that they may be opened during no-flow tests of the safety injection system (Specification No. 4.2).

(3) Manually Operated Valves

When closed and condition tagged.

(4) Feedwater Pump (Overpressurization Protection Only) 103 5/23/88

When shutdown with the breaker in the racked out condition.

BASIS: Under normal conditions, system operational interlocks assure that injection of feedwater condensation to the reactor by the safety injection system cannot occur.[1] These interlocks include:

1. Actuation of the safety injection relay which de-energizes the condensate and heater drain pumps and closes the flow path for condensate, thereby preventing injection of feedwater into the coolant system.

2. Interlocks between the condensate isolation valves at the feedwater pump suction and the safety injection header isolation valves at the pump discharge which prevent the opening of the one valve unless the other is closed.

Below 500 psig the Safety Injection System may be removed from service. Below 400 psig the feedwater system may be removed from service. During these low pressure shutdown reactor coolant system conditions, the interlocks may be overridden for maintenance and/or to prevent intrusion of feedwater condensate or safety injection water into the reactor coolant system. Injection of feedwater has the potential to dilute the system and create a potential for a reactivity excursion. Injection of either safety injection water or feedwater, especially during water solid operations, creates the potential for pressurizing above limits established by 10 CFR 50 Appendix G and as reflected in Technical Specification 3.1.3. 103 5/23/88

The "two positive barriers" required by this specification provide protection of the Reactor Coolant System against boron dilution and overpressurization when in the low pressure and low temperature conditions. Two positive barriers are provided in each potential path between the Feedwater Condensate System, Safety Injection System and the RCS. During period of no-flow testing, an exception is provided on two of the positive barriers to allow the components involved in the test to perform their test functions while the remaining positive barriers (nos. 3 and 4) remain in effect.

Tagged, as used above, means tagged in accordance with current Southern California Edison Company procedures for tagging of equipment which must not be operated.

Reference: (1) Final Engineering Report and Safety Analysis, Paragraph 5.1.

3.7 AUXILIARY ELECTRICAL SUPPLY

APPLICABILITY: Applies to the availability of electrical power for the operation of the plant auxiliaries.

OBJECTIVE: To define those conditions of electrical power availability necessary (1) to provide for safe reactor operation, (2) to provide for the continuing availability of engineered safeguards, and (3) to ensure that the station can be maintained in the shutdown or refueling condition for extended time periods.

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SPECIFICATION: I. In Modes 1, 2, 3 and 4 the following specifications shall apply:

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A. As a minimum the following shall be OPERABLE:

1. One Southern California Edison Company and one San Diego Gas & Electric Company high voltage transmission line to the switchyard and two transmission circuits from the switchyard, one immediate and one delayed access, to the onsite safety-related distribution system. This configuration constitutes the two required offsite circuits.

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2. Two separate and independent diesel generators each with:

   a. A separate day tank containing a minimum of 290 gallons of fuel,

   b. A separate fuel storage system containing a minimum of 37,500 gallons of fuel, and

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   c. A separate fuel transfer pump.

3. AC Distribution

   a. 4160 Volt Bus 1C and 2C,

   b. 480 Volt Bus No. 1, Bus No. 2 and Bus No. 3, and

   c. Vital Bus 1, 2, 3, 3A, 4, 5 and 6.

4. DC Bus No. 1 and DC Bus No. 2 (including at least one full capacity charger and battery supply per bus).

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5. The two Safety Injection System Load Sequencers.*

* The automatic load function may be blocked in Mode 3 at a pressure $\leq$ 1900 psig.

B. Action

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1. With one of the required offsite circuits inoperable, demonstrate the OPERABILITY of the remaining AC sources by performing Surveillance Requirement A of Technical Specification 4.4 within one hour and at least once per eight (8) hours thereafter and Surveillance Requirement B.1.a within 24 hours; restore an additional offsite circuit to OPERABLE status within 72 hours or be in COLD SHUTDOWN within the next 36 hours.

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2. If one diesel generator in declared inoperable, demonstrate the OPERABILITY of the two offsite transmission circuits and the remaining diesel generator by performing Surveillance Requirement A of Technical Specification 4.4 within one hour and at least once per eight (8) hours thereafter and Surveillance Requirement B.1.a within 24 hours; restore the inoperable diesel generator to service within 72 hours or be in COLD SHUTDOWN within the next 36 hours.

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3. With one offsite circuit and one diesel generator of the above required AC electrical power sources inoperable, demonstrate the OPERABILITY of the remaining AC sources by performing Surveillance Requirement A of Technical Specification 4.4 within one hour and at least once per eight (8) hours thereafter and Surveillance Requiement B.1.a within 8 hours; restore at least one of the inoperable sources to OPERABLE status within 12 hours or be in COLD SHUTDOWN within the next 36 hours. Have at least two offsite circuits and two diesel generators OPERABLE within 72 hours from, the time of initial loss or be in COLD SHUTDOWN within the next 36 hours.

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4. With two required offsite circuits inoperable, demonstrate the OPERABILITY of two diesel generators by performing Surveillance Requirement B.1.a of Technical Specification 4.4 within 8 hours, unless the diesel generators are already operating; restore at least one of the inoperable sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 4 hours. With only one of the required offsite circuits restored, restore the remaining offsite circuit to OPERABLE status within 72 hours from the time of initial loss or be in COLD SHUTDOWN within the next 36 hours.

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5. With two of the above required diesel generators inoperable, demonstrate the OPERABILITY of two offsite circuits by performing Periodic Testing Requirement A of Technical Specification 4.4 within one hour and at least once per two (2) hours thereafter; restore at least one of the inoperable diesel generators to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours. Restore both diesel generators to OPERABLE status within 72 hours from time of initial loss or be in COLD SHUTDOWN within the next 36 hours.

6. With less than the above complement of AC buses OPERABLE, restore the inoperable bus within 8 hours or be in COLD SHUTDOWN within the next 36 hours.

7. With one required DC bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in COLD SHUTDOWN within the next 36 hours. 84 11/14/84

8. With a required DC bus battery and both of its chargers inoperable, restore the inoperable battery and one of its chargers to operable status within 2 hours or be in cold shutdown within the next 36 hours.

9. With one Safety Injection Load Sequencer inoperable, restore the inoperable sequencer to OPERABLE status within 72 hours or be in COLD SHUTDOWN within the next 36 hours.

II. Additionally, in Modes 1, 2 and 3 the following specifications shall apply:

A. As a minimum, the following shall be OPERABLE:

1. The MOV850C Uninterruptable Power Supply (UPS).

B. Action

1. With the MOV850C UPS inoperable, restore the UPS to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

III. In Modes 5 and 6 the following specifications shall apply:

A. As a minimum, the following shall be OPERABLE:

1. One Southern California Edison Company or San Diego Gas and Electric Company high voltage transmission line to the switchyard and one transmission circuit from the switchyard, immediate or delayed access, to the onsite safety-related distribution system.

2. One diesel generator (capable of automatic start) with: 84 11/14/84

a. A day tank containing a minimum 290 gallons of fuel,

b. A fuel storage system containing a minimum of 37,500 gallons of fuel, and

c. A fuel transfer pump.

3. The electrical Buses associated with the operable power sources as follows:

a. One 4,160 Volt AC Bus

b. One 480 Volt AC Bus

c. AC Vital Buses 1, 2 and 4, and

d. One DC Bus (including at least one full capacity charger and battery supply per Bus).

B. Action:

1. With less than the minimum required AC and DC electrical sources specified in III.A above, suspend all operations involving core alterations or positive reactivity changes.

Basis: The station is connected electrically to the Southern California Edison Company and San Diego Gas & Electric Company system via either of two physically independent high voltage transmission routes composed of four Southern California Edison Company high voltage lines and four San Diego Gas & Electric Company high voltage lines. 52 9/26/79 107 8/17/88

Of the four Southern California Edison Company lines, any one can serve as a source of power to the station auxiliaries at any time. Similarly, any of the four San Diego Gas & Electric Company lines can serve as a source of power to the station auxiliaries at any time. By specifying one transmission line from each of the two physically independent high voltage transmission routes, redundancy of sources of auxiliary power for an orderly shutdown is provided.

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Similarly, either transformer A or B, along with transformer C, provide redundancy of 4160 volt power to the auxiliary equipment, and in particular to the safety injection trains. Correct operation of the safety injection system is assured by the operability of the load sequencers and the UPS for MOV 850C. In addition, each 4160 volt bus has an onsite diesel generator as backup.

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In MODES 1, 2, 3 and 4, two diesel generators provide the necessary redundancy to protect against a failure of one of the diesel generator systems or in case one diesel generator system is taken out for maintenance, without requiring a reactor shutdown. This also eliminates the necessity for depending on one diesel generator to operate for extended periods without shutdown if it were required for post-accident conditions.

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In MODES 5 and 6, the requirement for one source of offsite power and one diesel generator to be OPERABLE will provide diverse and redundant electrical power sources in order that the station can be maintained in the COLD SHUTDOWN or REFUELING condition for extended time periods. Additionally, this requirement will assure that operations involving core alterations or positive reactivity changes can be conducted safely.