UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 56 TO LICENSE NO. DPR-13

SOUTHERN CALIFORNIA EDISON COMPANY

SAN ONOFRE UNIT NO. 1

DOCKET NO. 50-206

1.0 INTRODUCTION AND DISCUSSION

By applications dated October 20, 1978, March 31, 1980, April 4, 1980, June 30, 1980, and December 1, 1980, Southern California Edison Company (SCE) (the licensee) proposed changes to the San Onofre Nuclear Generating Station (SONGS) Unit No. 1, Technical Specifications. The staff has not completed its review of all the proposed changes submitted by these applications. This Safety Evaluation documents the results of the reviews that have been completed. The application dates, proposed change numbers, and the subjects completed in this review are summarized below.

By application dated October 20, 1978 (Proposed Change No. 76) the licensee proposed a change to the SONGS Unit 1 Technical Specifications to revise the surveillance requirements for the station battery system. One part of the proposed changes addresses the service test of the Uninterruptible Power Supply (UPS) battery for motor-operated valve (MOV) 850C. The requirements for the service test for this battery is the only portion addressed in this Safety Evaluation.

By application dated March 31, 1980 (Proposed Change No. 89), the licensee proposed changes to the Technical Specifications to ensure that control rods are required to be maintained within margins of the Westinghouse safety analysis for control rod misalignment. This document contains the evaluation of this application and also covers the modifications required to the Technical Specifications to include the definitions of the various operating modes (see Proposed Change No. 96).

By application dated April 4, 1980 (Proposed Change No. 91) the licensee proposed a change to the Unit No. 1 Technical Specifications to reflect a new switchyard configuration. The staff modified the proposed Technical Specification changes and obtained the licensee's agreement to the modification. Subsequently, the staff issued License Amendment No. 52 on February 6, 1981, to incorporate the modified Technical Specifications into the SONGS-1 license. Unfortunately, the modification to Section 3.7 and the basis, needed to be reflected in the surveillance requirements of Section 4.4 was inadvertently omitted. The license amendment supported by this Safety Evaluation corrects that administrative error.

By application dated June 30, 1980 (Proposed Change No. 93) the licensee proposed changes to the Technical Specifications to revise the definition of the term "Operable" to make it consistent with the definition used in the Standard Technical Specifications. This proposed change was submitted in response to the staff request dated April 10, 1980.

By application dated December 1, 1980 (Proposed Change No. 96) the licensee proposed changes to the Technical Specifications to reflect requirements to provide redundancy in decay heat removal capability and to redefine the modes of operation to conform with the Standard Technical Specifications. This evaluation addresses the redefinition of the modes of operation. The licensee included revised Technical Specification pages for pending Proposed Changes 89 and 93. These pages include the definitions of the modes of operation where appropriate. The review of the Proposed Changes 89 and 93 considered the modified pages provided with Proposed Change 96. The evaluation of the Technical Specification changes for decay heat removal will be covered at a later time.

The following evaluation is presented in order of Proposed Change Number consistent with the description given above.

2.0 EVALUATION

2.1 Periodic Testing of Emergency Supply System (Proposed Change No. 76)

By letter dated June 15, 1976 (Proposed Change No. 47) SCE requested changes to the Technical Specifications to incorporate surveillance requirements for Periodic Testing of the Emergency Power System. Part of the surveillance requirements included a service test for the Uninterruptible Power Supply battery for motor-operated valve (MOV) 850C. The NRC approved these changes by License Amendment No. 25, dated April 1, 1977.

In the Safety Evaluation supporting License Amendment No. 25, the staff concluded that the modifications to the ECCS systems are acceptable. Part of the modifications included modification of the sources of power for the three safety injection valves 850A, 850B and 850C. MOV 850C is energized from a separate and independent UPS that is independent of onsite power trains 1 and 2. The charger for the UPS is energized through power train 2. In the event of failure of power train 2, the UPS independent battery has the capacity of two complete cycles of operation (opening and closing twice) of MOV 850C, whereas capacity is needed only for a single opening of this valve.

The licensee has proposed changes to Technical Specification 4.4.D.2.d to modify the required service test for the UPS battery to be consistent with its intended and required service. The UPS battery would be tested for two complete strokes each refueling shutdown to verify its adequacy to supply its emergency load. We have found this proposed change acceptable and consistent with our previous safety findings and, therefore, with the licensee's agreement, have modified the Technical Specifications accordingly.

2.2 Control Rod Position Indication Systems (Proposed Change No. 89)

The staff's review of the LER's and Technical Specification (TS) requirements related to the Control Rod Position Indication System (RPI) at Westinghouse PWRs determined that a wide variation exists in the number of LERs received and the Technical Specification requirements. By letter dated November 5, 1979, the staff informed SCE and other Westinghouse PWR licensee, of its concern that the existing TS requirements for the RPI may not be adequate to ensure that the plant is operated within the scope of the safety analyses. The staff's letter also contained a request that the licensee compare the existing TS against an attached model and either propose revised TS to conform to the provided model or propose and justify an alternative.

By letters dated December 19, 1979, January 9, 1980, and February 14, 1980, SCE informed the staff that the RPI installed at San Onofre Unit No. 1 was different from the system for which the model TS had been written. SCE further informed the staff that RPI requirements were presently not included in the SONGS Unit No. 1 TS, that an analysis would be performed on the allowable misalignment values which should be maintained, and that appropriate TS would be submitted. By letter dated March 31, 1980, SCE provided the control rod misalighment analysis and proposed revisions to Specifications 3.5.2 and 4.1 and the addition of new Specifications 3.5.3 and 3.5.4.

The results of analysis indicate that the San Onofre Unit No. 1 could be operated with a single rod misaligned by up to 21 inches from the bank position without impacting safe operation as long as all control rods are maintained above the rod insertion limits. Since the San Onofre Unit 1 control rod step is 3/8 inch (instead of the more common 5/8 inch), the 21 inches is equal to 56 steps. The accuracy of the RPI is specified to be $\pm$ 17 steps during steady-state operation. However, during periods of thermal transients the RPI accuracy has been determined, through evaluation of past rod position record data, to be $\pm$ 21 steps. Therefore, in order to ensure that the control rods are actually positioned within 56 steps of the bank, the rod must be indicated to be within $\pm$ 35 steps of the bank.

The TS proposed by SCE, in addition to limiting the control rod misalignment to ± 35 steps, also provide operability and surveillance requirements for the RPI to ensure its continued availability. The staff has reviewed the proposed TS and finds that they adequately address the NRC's concerns and are in agreement with the guidance provided except for the changes necessary because of the differences in the RPI described above. Therefore, the staff concludes that the proposed changes and additions to the TS are acceptable. Proposed Change 96 covered in this Safety Evaluation concerning the definition of operating modes was included in the Technical Specification changes.

2.3 Offsite Power (Proposed Change No. 91)

By application dated April 4, 1980, the licensee proposed to modify the TS to incorporate the description of the offsite power sources to the station with the use of the newly-constructed switchyard. The staff reached agreement with the licensee to modify their proposal to require available offsite power from both the Southern California Edison Company and the San Diego Gas and Electric Company. Following agreement, the staff issued License Amendment No. 52 dated February 6, 1981, and we modified Section 3.7 and the Bases for Section 3.7 to include the agreed-upon requirement.

Following issuance of License Amendment No. 52 it was noted that Section 4.4.A should have been modified along with Section 3.7 but was inadvertently omitted. This modification was previously evaluated and found to be acceptable, also the modification was discussed and mutually agreed to by the Commission and the licensee. Therefore, this change is administrative in nature and found acceptable.

2.4 "Operable" Definition (Proposed Change No. 93)

The licensee has proposed to redefine the term "operable" as it applies to the TS for SONGS-1 in response to the staff request dated April 10, 1980. The staff has reviewed the proposed changes and basis and have modified the TS in accordance with this proposal and Proposed Change 96 which defines operating modes consistent with the Standard Technical Specifications for Westinghouse Pressurized Water Reactors.

The Technical Specifications are formulated to preserve the single failure criterion for systems that are relied upon in the Final Safety Analysis (FSA). By and large, the single failure criterion is preserved by specifying Limiting Conditions for Operation (LCOs) that require all redundant components of safety related systems to be Operable. When the required redundancy is not maintained, either due to equipment failure or maintenance outage, action is required, within a specified time, to change the operating mode of the plant to place it in a safe condition. The specified time to take action, usually called the equipment out-of-service time, is a temporary relaxation of the single failure criterion, which, consistent with overall system reliability considerations, provides a limited time to fix equipment or otherwise make it Operable. If equipment can be returned to Operable status within the specified time, plant shutdown is not required.

LCOs are specified for each safety related system in the plant, and with few exceptions, the Action statements address single outages of components, trains or subsystems. For any particular system, the LCO does not address multiple outages of redundant components, nor does it address the effects of outages of any support systems - such as electrical power or cooling water - that are relied upon to maintain the operability of the particular system. This is because of the large number of combinations of these types of outages that are possible. Instead, the TS employ general specifications and an explicit definition of the term Operable to encompass all such cases. These specifications have been formulated to assure that no set of equipment outages would be allowed to persist that would result in the facility being in an unprotected condition, are contained in the Standard Technical Specifications, and are incorporated into the San Onofre Unit No. 1 Technical Specifications by this change. Illustrative examples of how these specifications apply are contained in the associated Bases. For these reasons, the staff concludes that the proposed changes to the technical specifications, as modified by Proposed Change No. 96, are acceptable.

2.5 Definition of Modes of Operation (Proposed Change No. 96)

By letter dated December 1, 1980, the licensee requested changes to the Technical Specifications with respect to decay heat removal capability and to adopt the definition of modes of operation that conform closely to the Standard TS definitions. The definition of modes of operation define when the plant is considered to be in: refueling, cold shutdown, hot shutdown, hot standby, startup or power operation. The definition include the reactivity condition of the reactor, the % of power being generated, and the temperature of the reactor coolant. By using the nomenclature of modes of operation in the applicability statements of the Technical Specifications ambiguity of the state of the reactor is eliminated. We have not completed our review of the proposed changes related to decay heat removal; however, the adoption of our definition of modes of operation is administrative in nature and appropriate to include at this time. We have reviewed the licensee's proposed changes in this respect and have modified Proposed Changes 89 and 93 for consistency with this request and find the change administrative in nature and acceptable. The licensee agreed to these modifications.

3.0 ENVIRONMENTAL CONCLUSION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

We have found that for the reasons given in the preceeding sections of this evaluation that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: June 11, 1981