



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 79 TO FACILITY OPERATING LICENSE NO. NPF-10
AND AMENDMENT NO. 67 TO FACILITY OPERATING LICENSE NO. NPF-15

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS AND ELECTRIC COMPANY

THE CITY OF RIVERSIDE, CALIFORNIA

THE CITY OF ANAHEIM, CALIFORNIA

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

DOCKET NOS. 50-361 AND 50-362

1.0 INTRODUCTION

By letters dated October 11, 1988 (PCN 264), December 19, 1988 (PCN 279), and December 28, 1988 (PCN 271), Southern California Edison Company, et al., (the licensee) requested changes to the Technical Specifications for Facility Operating Licenses No. NPF-10 and No. NPF-15 that authorize operation of San Onofre Nuclear Generating Station (SONGS), Units 2 and 3 in San Diego County, California. These requests proposed to extend the interval for certain of the required 18 month surveillance tests in order to support the nominal 24 month fuel cycle. Both Units 2 and 3 are operating in their first such cycle and will be forced to shut down to perform the 18 month surveillance unless the required interval is extended. The licensee has submitted proposed changes to cover all the 18 month surveillance tests which cannot be performed during plant operation. Many of these requests would have changed the required interval from "at least once every 18 months" to "at least once per refueling interval." By letter dated March 20, 1989, SCE amended these requests to define "refueling interval" as 24 months. This definition has been included in the Frequency Notation Table of the Technical Specifications (Table 1.2) by Amendments 73 and 61 to Licenses No. NPF-10 and No. NPF-15 respectively.

2.0 EVALUATION

2.1 PCN 264

By letter dated October 11, 1988, the licensee proposed a change that would revise Surveillance Requirement (SR) 4.4.5.2.2.a of Technical Specification (TS) 3/4.4.5.2, "Operational Leakage," to increase the interval for surveillance tests which are currently performed every 18 months to each refueling, nominally 24 months. The purpose of this specification is to provide limits on operational leakage.

The surveillance requirements for the Reactor Coolant System (RCS) Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS Pressure Isolation Valves is identified leakage and will be considered as a portion of the allowable limit. The RCS Pressure Isolation Valve's function is to create a pressure boundary isolating the RCS from connecting systems. Surveillance Requirement 4.4.5.2.2.a requires at least once every 18 months, verification of valve leakage to be within its limit. This involves entry into containment for installation of test equipment and instrumentation.

The licensee states that SONGS Units 2 and 3 have recently entered their first nominal 24 month fuel cycle. In order to maintain radiation exposures as low as reasonably achievable, and not enter a technical specification action statement, the unit would need to be in a shutdown mode to conduct the testing associated with this surveillance. The current 18 month surveillance interval could necessitate plant shutdown solely for performing surveillance requirements. To avoid an otherwise unnecessary shutdown, the proposed change would increase the surveillance test interval from 18 months to "refueling interval."

Since the proposed change would increase the surveillance interval from 18 months to "refueling interval" for a nominal 24 month cycle, the actual time interval between surveillances will be a function of the plant capacity factor for that particular fuel cycle. The equilibrium fuel cycle will be approximately 513 effective full power days. Assuming a production factor of 90% and a 75 day refueling outage, the actual cycle length and surveillance interval would be approximately 21 months. Currently, Specification 4.0.2 allows a 25% extension of surveillance interval (to 22.5 months), which would accommodate uninterrupted operation for the equilibrium cycle length. However, the TS 4.0.2 limitation on the application of a 25% extension (three consecutive intervals do not exceed 3.25 times the nominal interval) eventually would impact operation. Thus the proposed change does not represent a significant increase over present TS requirements.

Moreover, a review of the history of the required 18 month surveillance tests, from the start of commercial operation to present, was performed by the licensee. The surveillances at Unit 2 were all satisfactory. During containment walkdowns, preventive maintenance, or other surveillances, boric acid crystals were noted on the piping (evidence of external leakages). The amount discovered was not enough to fail a leak rate surveillance (less than 1 gpm). These were resolved by minor maintenance. The surveillances at Unit 3 were all satisfactory, except one failed leak rate test on four valves. The motor operator torque settings were re-adjusted to allow the valves to seat properly. Since this incident, IE Bulletin 85-03 was issued concerning improper torque settings. In response to this bulletin the licensee evaluated actual torque requirements on each type of valve and set limits which are specific to each valve. In addition, three other valves have been repaired for minor seat leakage discovered during other TS surveillances.

Two other TS surveillance requirements monitor leakage from the RCS. A water balance inventory is performed every 72 hours in modes 1, 2, 3 and 4, as required by TS 4.5.2.1.c. In addition, a leak rate test prior to entry into Mode 2 and following valve maintenance or valve actuation is performed. These surveillances provide a high level of assurance that the valves included in TS 3/4.4.5.2.2 are maintaining the RCS pressure boundary.

The staff has evaluated the licensee's submittal. The modification would not significantly increase the current TS requirements and would not alter the ability to detect leakage. Additionally, since the surveillance history does not detect any significant operational problems, and the operational and radiological concerns would be increased by keeping the 18 month interval, it is prudent to allow the surveillance interval to be changed to every refueling.

Therefore, based upon the above information, the staff approves the amendment allowing the surveillance interval to be changed to once per refueling interval.

2.2 PCN 271

By letter dated December 28, 1988, the licensee proposed a change that would revise Technical Specification 3/4.3.4, "Turbine Overspeed Protection." This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are operable and will protect the turbine from excessive overspeed. The main generator overspeed tripping circuits are designed to trip the turbine if the factory recommended maximum speed is approached. This circuit consists of dual train protection with two independent tripping mechanisms and electrical circuits which initiate a trip on the turbine if the turbine speed reaches the trip setpoint. Turbine overspeed protection is considered necessary to prevent postulated turbine missiles from being generated and potentially damaging safety related structures.

Specifically, Surveillance Requirement 4.3.4.c specifies that the turbine overspeed protection systems shall be demonstrated operable at least once per 18 months by performance of a channel calibration on the turbine overspeed protection systems. The proposed change would revise the 18 month surveillance frequency to a "refueling interval," nominally 24 months.

The licensee states that this surveillance is performed by Turbine Overspeed Test Surveillance S023-II-11.168 and S023-10-4. The on-line turbine overspeed trip test is performed by the operator selecting the on-load test function on the turbine control panel. Surveillance S023-II-11.168 is followed for the on-line test. To perform the offload turbine overspeed test, the offload test function is selected. This configures the turbine trip circuitry to trip from one selected concentric ring at a time. The turbine speed is then manually increased

until the turbine trips. Surveillance S023-10-4 is followed for this test. Turbine Overspeed Trip Test Surveillance S023-11-11.168 and S023-10-4 results have been reviewed and no significant problems have been discovered. From the period 1982 until 1985, testing was accomplished under operational procedure S023-10-4. In 1985, a new surveillance was developed specifically for the Electrical Test Department, S023-11-11.168. Since the development of the new surveillance, three surveillances for Unit 2 and two surveillances for Unit 3 have been completed. Only one problem was noted. One Maintenance Order completed January 1986, found that Ring No. 2 did not function. Maintenance Orders were generated to resolve the problem. This problem was not significant due to the fact that other trips generated by the turbine governor and other trip ring would still have functioned to trip the turbine. No other problems of any significance were found during performance of the turbine overspeed protection system surveillance.

SONGS Units 2 and 3 have both entered their first nominal 24 month fuel cycle. The unit would need to be in a shutdown mode to conduct the offline testing associated with this surveillance. The current 18 month surveillance interval could necessitate plant shutdown solely for performing surveillance requirements. To avoid an otherwise unnecessary shutdown, the proposed change would increase the surveillance test interval from 18 months to "refueling interval."

Since the proposed change would increase the surveillance interval from 18 months to "refueling interval" for a nominal 24 month cycle, the actual time interval between surveillances will be a function of the plant capacity factor for that particular fuel cycle. The equilibrium fuel cycle will be approximately 513 effective full power days. Assuming a production factor of 90% and a 75 day refueling outage, the actual cycle length and surveillance interval would be approximately 21 months. Currently, Specification 4.0.2 allows a 25% extension of surveillance intervals (to 22.5 months), which would accommodate uninterrupted operation for the equilibrium cycle length. However, the TS 4.0.2 limitation on the application of a 25% extension (three consecutive intervals do not exceed 3.25 times the nominal interval) eventually would impact operation. Thus, the proposed change does not represent a significant increase over present TS requirements.

The staff has evaluated the licensee's submittal. The modification would not significantly increase the current TS requirement nor decrease the effectiveness or redundancy of the turbine trip circuitry. Moreover, the surveillance testing to date has not detected any significant operational problems. Since the operational concerns would be increased by keeping the 18 month interval, it is prudent to allow the surveillance interval to be changed to every refueling.

Therefore, based upon the above information, the staff approves the amendment allowing the surveillance interval to be changed to once per refueling interval.

2.3 PCN-279

By letter dated December 19, 1988, the licensee proposed a change that would revise Technical Specification (TS) 3/4.4.5.1, "Reactor Coolant System Leakage." Specifically, the proposed change would revise Surveillance Requirement 4.4.5.1.b to increase the interval to each refueling for surveillance tests which are currently performed every 18 months. This system functions to detect liquid level in the containment sump using two redundant transmitters which provide information to the control room. The level signal from train "B" also inputs to the Critical Function Monitoring System (CFMS), which converts changes in level signal to flowrate. The surveillance requires performing a channel calibration at least once every 18 months.

The licensee states that SONGS Units 2 and 3 have recently entered their first nominal 24 month fuel cycle. In order to maintain radiation exposures as low as reasonably achievable, and not enter a technical specification action statement, the unit would need to be in a shutdown mode to conduct the testing. The current 18 month surveillance interval could necessitate plant shutdown solely for performing surveillance requirements. To avoid an otherwise unnecessary shutdown, the proposed change would increase the surveillance test interval from 18 months to "once each refueling."

A review of the history of the required 18 month surveillance tests, from the start of commercial operation to present, was performed. The surveillances at Unit 2 were all satisfactory. At Unit 3 the 1985 surveillance found both channels out of calibration. During 1986, the Operations channel level comparisons were out of specification. The repair consisted of major overhaul and parts replacement in the electronic units. The 1987 surveillance was satisfactory.

In addition to the redundant leak detection methods, operational monthly and quarterly leak tests and channel comparisons serve to identify leaking systems in the event that the containment sump level detector is out of calibration. This redundancy provides the necessary reliability.

Since the proposed change would increase the surveillance interval from 18 months to "refueling interval" for a nominal 24 month cycle, the actual time interval between surveillances will be a function of the plant capacity factor for that particular fuel cycle. The equilibrium fuel cycle length will be approximately 513 effective full power days (EFPD). Assuming a production factor of 90% and a 75 day refueling outage, the actual cycle length and the surveillance interval would be approximately 21 months. Currently, Specification 4.0.2 allows a 25% extension of surveillance intervals (to 22.5 months), which would accommodate uninterrupted operation for the equilibrium cycle length. However, the TS 4.0.2 limitation on the application of a 25% extension (three consecutive intervals do not exceed 3.25 times the nominal interval) eventually would impact operation. Thus, the proposed change does not represent a significant increase over what is already permitted by the TS.

The staff has evaluated the licensee's submittal. The modification would not significantly increase the current TS requirements and would not alter leak detection methods. Moreover, since the surveillance history does not detect any significant operational problems, and the operational and radiological concerns would be increased by keeping the 18 month interval, it is prudent to allow the surveillance interval to be changed to every refueling.

Therefore, based upon the above information, the staff approves the amendment allowing the surveillance interval to be changed to once per refueling interval.

3.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the State Department of Health Services, State of California, of the proposed determination of no significant hazards consideration. No comments were received.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments involve changes to requirements with respect to the installation or use of a facility component located within the restricted areas as defined in 10 CFR Part 20 and in surveillance requirements. The staff has determined that the amendments involve no significant change in the types, or any effluents increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendments.

5.0 CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: November 9, 1989