



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 125 TO FACILITY OPERATING LICENSE NO. NPF-10  
AND AMENDMENT NO. 114 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 letter dated May 20, 1994, Southern California Edison Company, et al. (SCE or the licensee) submitted a request for changes to the Technical Specifications (TS) for San Onofre Nuclear Generating Station, Unit Nos. 2 and 3. The proposed changes would revise TS 3/4.7.3, "Component Cooling Water System," and the corresponding Bases to support the addition of the component cooling water (CCW) surge tank backup nitrogen supply (BNS) system.

### 2.0 BACKGROUND

The licensee, in an assessment following the NRC's Safety System Functional Inspection of the CCW and salt water cooling systems, determined that the CCW system was susceptible to water hammer during flow transients after certain design basis events. In a letter to the NRC dated January 4, 1990, the licensee indicated its intent to implement three modifications to remedy the water hammer susceptibility, including the addition of a qualified BNS system which would be connected to the surge tanks of the CCW system.

### 3.0 EVALUATION

At San Onofre, the CCW system includes two independent critical cooling loops and one non-critical cooling loop (NCL). Each critical cooling loop is 100 percent capacity and contains a surge tank, pump, and heat exchanger. The NCL is isolated upon a containment isolation actuation signal or a low-low surge tank level signal. During normal plant operation, the nuclear service water system supplies makeup water to the surge tanks, and the auxiliary gas system supplies nitrogen gas to the surge tanks to ensure that the CCW system is maintained water solid during normal operation. Neither of these systems are safety related nor do they support emergency operations.

The BNS system would maintain CCW system pressure for cases where a break occurs in the NCL loop and the normal, nonsafety-related nitrogen supply cannot be credited. The addition of the BNS system provides the SONGS Units 2 and 3 CCW systems with a seismic Category I source of nitrogen with an independent BNS train for each CCW critical loop. Each train of the BNS system contains a bank of ten 6000 psig nitrogen bottles installed in dedicated bottle racks and connected by a common discharge header. Bottle replacement is facilitated by provision of a pressure gauge, an isolation valve, and a check valve for each bottle.

The BNS system is designed to maintain the surge tank pressure for a minimum of seven days following a design basis event without operator action. A seven-day period of BNS system operation without action is based on reducing the post-LOCA dose rate in the BNS bottle changeout area to below 10 CFR 50, Appendix A, General Design Criterion 19 limits. The seven days of BNS system operation will require approximately 2974 standard cubic feet (scf) of nitrogen which corresponds to a minimum initial average bottle pressure of 4132 pounds per square inch gauge (psig). The nitrogen inventory is administratively controlled by the proposed TS bottle pressure surveillance. Proposed TS 4.7.3.2a requires the average bottle pressure of nine of the ten bottles to be at least 4232 psig, which is 100 psi greater than the operability requirement of 4132 psig. This 100 psi margin accounts for seven days of maximum expected BNS system leakage.

The BNS system is designed with four stages of pressure regulation such that the normal nitrogen supply can be used without actuating the BNS system and to offer protection against over-pressurization of downstream piping and the surge tank. The auxiliary gas system nitrogen supply pressure is normally available at 85 to 105 psig. At the supply pressure of 85 psig and a maximum expected nitrogen flow rate during normal operation of 230 scfm the pressure downstream of the third stage regulator will be approximately 59.5 psig. The third stage pressure regulator setpoint of 55 psig ( $\pm 1.5$  psi) will assure that the BNS system will remain isolated while the auxiliary gas system is functional, while being capable of maintaining the surge tank pressure above 27.4 psig should the normal nitrogen supply become unavailable. The BNS system third stage pressure regulator setpoint will be controlled by the proposed TS 4.7.3.2b.

The NRC staff has reviewed the design features of the BNS system, including the proposed TS controlling the operation of the system, and concludes that the BNS system will perform its intended safety function. The staff therefore finds acceptable the proposed addition of the BNS system to the San Onofre Units 2 and 3 plant design and TS.

#### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the California State official was notified of the proposed issuance of the amendment. The State official had no comments.

## 5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant 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 (59 FR 45034). 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 the amendments.

## 6.0 CONCLUSION

The Commission has 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: September 13, 1995