



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 99 TO PROVISIONAL OPERATING LICENSE NO. DPR-13

SOUTHERN CALIFORNIA EDISON COMPANY AND

SAN DIEGO GAS AND ELECTRIC COMPANY

SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NO. 1

DOCKET NO. 50-206

1.0 INTRODUCTION

By letter dated May 9, 1985, as revised on October 7, 1985, Southern California Edison Company, et al., (SCE) (the licensee) proposed changes to the Technical Specifications of the San Onofre Nuclear Generating Station, Unit No. 1. The proposed action would amend Section 3.6.2 and associated Table 3.6.2-1 of the Technical Specifications. This section prescribes the limiting conditions for operation and surveillance requirements for containment isolation valves. The proposed revisions would clarify the actions required in the event of valve inoperability, provide greater operating flexibility, allow temporary activation of deactivated valves to permit or facilitate required surveillance and testing, incorporate changes resulting from plant modifications and effect certain editorial changes.

The licensee's October 7, 1985 submittal withdrew the licensee's request to delete two containment isolation valves for the Pressurizer Relief Tank Gas Sample penetration. This submittal does not significantly alter the proposed action noticed in the Federal Register on July 17, 1985 and does not alter the staff's proposed no significant hazards consideration determination contained therein.

2.0 DISCUSSION

Although the technical specifications for this facility do not follow the format and provisions of the Commission's current Standard Technical Specifications (the facility was licensed prior to implementation of these standard specifications), the staff has evaluated the proposed changes in the light of the intent of the Standard Technical Specifications, the Model Technical Specifications applicable to containment isolation valves as transmitted to the licensee by NRC letter dated July 2, 1980, and the Technical Specifications relating to containment isolation valves contained in several recently issued facility operating licenses.

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### 3.0. EVALUATION

#### A. Specification 3.6.2.

1. Format. The licensee proposes to change the format of this specification to conform to the general format used in the NRC's Standard Technical Specifications. This consists primarily of separating the several requirements of the specification into one basic Limiting Condition for Operation (LCO), and one or more ACTION statements to be exercised if the LCO is not met. The staff has reviewed the revised format proposed by the licensee and concludes it is purely an editorial change and does not diminish the present level of safety. Accordingly, this element of the licensee's proposed revision is acceptable.
  
2. ACTION A. The present facility specification (currently designated 'B') states that if one isolation valve is inoperable, the licensee must maintain at least one isolation valve OPERABLE in each affected penetration that is open. The licensee points out that the single valve requirement cannot be satisfied for those lines penetrating the containment boundary which contain only one isolation valve. The licensee notes this configuration is permitted by 10 CFR 50, Appendix A, General Design Criterion 57, which establishes isolation requirements for "closed systems", i.e., systems in which the piping is not part of the reactor coolant boundary, nor directly connected to the containment atmosphere. To address this problem, the licensee proposes to revise this provision of the technical specifications to clarify that the requirement only applies to lines where at least two isolation valves are provided. Because this is clearly the only feasible action, the staff finds this acceptable.

Regarding the ACTION to be taken for those cases where only a single isolation valve is installed, the licensee proposes the ACTION and time limit be the same as for those cases where two or more valves are provided. In support of this proposal, the licensee states that all of the penetrations listed in Technical Specification Table 3.6.2-1 with only one containment isolation valve are in systems that are closed inside containment (except for the sphere purge air supply/exhaust penetrations which are sealed closed) and thus meet the applicable General Design Criterion. The licensee also notes that in the absence of provisions addressing penetrations with single isolation valves, the present specifications (particularly 3.0.3) can be interpreted as requiring the initiation of plant shutdown within one hour.

Because of this, the licensee argues that imposing a one hour requirement on one type of penetration meeting the General

Design Criteria (GDC), while allowing four hours for corrective action for another type of penetration also meeting the GDC is inconsistent. It is on this basis the licensee proposes the two types of penetrations be subject to the same requirements.

The staff notes the underlying consideration in the GDC applying to containment penetrations is the provision of two physical barriers to fission product release. Thus, where the system penetrating the containment is part of the reactor coolant pressure boundary, or where the system is open to the containment atmosphere, two isolation valves must be provided in each line (GDC 55 and 56). Where the system is closed, the system piping and equipment provide one physical barrier, and as previously noted, only one isolation valve is required. The reason for requiring two barriers is to assure maintenance of isolation capability with a failure of one of the barriers. The staff observes that both the present facility specifications and the Standard Technical Specifications appear to assume the existence of dual isolation valves, and allow a minimum of four hours for corrective action when one of the valves is inoperable. Neither document, however, specifically addresses the case of single isolation valves. Therefore, on the basis that the walls of the piping and equipment of a closed system inside containment provide isolation equivalent to that of a closed isolation valve, the staff concludes that the same time period for corrective action should be afforded to single isolation valves in closed systems as is permitted for other systems requiring dual isolation valves. Accordingly, the proposed revision is acceptable.

3. ACTION B. As noted in paragraph 2, above, the licensee has proposed to designate present ACTION statement 'B' as ACTION statement 'A'. The licensee also proposes to add a new ACTION statement 'B'. This new ACTION statement would waive the requirements of Specification 3.0.4 with respect to inoperable isolation valves - provided proposed ACTION A.2 or A.3 is completed within four hours and the system associated with the inoperable valve is declared inoperable. Proposed ACTION statements A.2 and A.3 require that penetrations with an inoperable isolation valve be isolated within four hours by deactivating an automatic isolation valve and securing it in the isolation position or by closing a manual valve or installing a blind flange. It is noted that Specification 3.0.4 provides that a change to a different OPERATIONAL Mode can only be made with (a) the full complement of required systems, equipment or components OPERABLE and (b) all other parameters as specified in the Limiting Conditions for Operation being met without regard for allowable deviations and out-of-service provisions contained in the ACTION statements. The Basis for the specification states the intent is to insure that facility operation is not initiated with either required

equipment or systems inoperable or other specified limits being exceeded. Specification 3.0.4 also provides for exceptions to this specification to be stated in individual specifications when such exceptions will not affect plant safety.

The licensee justifies this request on the basis the requirement for the affected penetration to be secured closed within four hours assures the purpose of the containment isolation valve is satisfied. In addition, the licensee notes the proposed waiver is conditioned on adherence to the ACTION statements applicable to any system made inoperable as a result of securing the penetration. The licensee also notes similar provisions have been previously approved for the Susquehanna, Byron and Limerick nuclear power plants.

In reviewing this request, the staff takes note of the fundamental purpose of Specification 3.0.4: to prohibit transition to an Operational Mode until all of the safety equipment needed in that mode is Operable and all operating parameters are within their prescribed limits. Based on the fact individual exceptions to this specification are permitted, the staff concludes that some systems are more important to safe operation than other systems, and that for these latter systems, exceptions can be made for good cause. The licensee considers containment isolation valves, as a general rule, to fit into this latter category. Based on this, the licensee argues that as long as a penetration containing an inoperable valve is (or within four hours will be) securely fixed and maintained in the position required in the event of an accident (i.e., isolated), plant start-up should not be delayed until the defective valve can finally be repaired. The staff agrees with this view. Further, regarding the four hour period allowed for effecting isolation, the staff notes this is the same interval permitted during full power operation. The staff concludes that allowing this interval during start-up constitutes a significantly lower level of risk and is therefore, acceptable.

The preceding discussion has only considered the inoperability of an isolation valve as part of the Containment Isolation System. Another important aspect of the issue is the effect of isolation of the penetration on safety systems served by that penetration. The licensee has addressed this concern by including a provision in the proposed specification which permits waiving 3.0.4 only if the system affected by isolation of a penetration is declared inoperable (as applicable) and the appropriate ACTION statements for that system are followed. Although not explicitly stated, this provision, if applicable to the situation, would usually result in voiding the waiver of 3.0.4. This is because planned entry into an ACTION condition for most systems would again make 3.0.4 operative and thus prevent changing Mode until operability was restored.

The only times a change in Mode would be permitted under the proposed specification, therefore, would be when isolation of a penetration did not make a required system inoperable, or where the specification for the affected system also included a specific waiver of 3.0.4 requirements.

Based on the foregoing, the staff concludes the proposed specification provides an acceptable level of assurance of the availability of containment isolation and of vital safety systems, if needed. Accordingly, this element of the licensee's proposal is acceptable.

4. ACTION A.2 - Footnote. The licensee proposes to add a footnote which would permit temporary restoration of power to power-operated valves which have been deactivated pursuant to ACTION A.2. According to the proposed specification, the purpose of restoring power is to permit verification of valve position and to permit post-repair and periodic surveillance testing. In view of the NRC requirements to perform such testing and surveillance, and the need to temporarily furnish power to the affected valves in order to perform these actions, the staff concludes that the proposed revision is appropriate and acceptable.

B. Table 3.6.2-1

1. Title. The licensee proposes to change the title of Table 3.6.2-1 to reflect the fact that the power-operated valves listed in the table have Remote Manual (RM) controls. As part of this proposed change the licensee would also replace the double asterisk footnote with the suffix 'RM' following the valve number to indicate those valves that have Remote Manual controls. The staff concludes that these proposed changes are editorial in nature, do not affect the safety of operations and are, therefore, acceptable.
2. Alignment. The licensee proposes to delete from Table 3.6.2-1 all information relating to "Alignment". The Alignment information currently in this table pertains to the source of electrical control and operating power for the various containment isolation valves. The licensee states this information was originally included in this table to illustrate the separation of control and operating power. The licensee adds, however, that this information has no bearing on the operability requirements for the containment isolation valves (as prescribed by this table pursuant to specification 3.6.2). The licensee also states the guidance contained in the NRC letter of July 2, 1980 requests that the table reflect the diverse isolation signals used to initiate valve closure. According to the licensee, this diversity is provided by the list of the various initiating

signals given in Table 3.5.5-1 of the facility technical specifications - which in turn references Table 3.6.2-1. Based on these considerations, the licensee believes the information on Alignment should be deleted because it is irrelevant and because it unnecessarily complicates Table 3.6.2-1.

The staff has reviewed the licensee's current and proposed versions of Table 3.6.2-1, the guidance regarding technical specifications for containment isolation valves as presented in the NRC's letter of July 2, 1980, and the NRC's Standard Technical Specifications. This review did not identify any safety or regulatory requirement for including this Alignment information in Table 3.6.2-1. Further, deletion of this information will not reduce the electrical separation currently provided - nor will it nullify any of the requirements and regulations applicable to proposed facility changes. Accordingly, deletion of the information relating to Alignment contained in the current version of Table 3.6.2-1 is acceptable.

3. Solenoid Valves. The licensee states the version of Table 3.6.2-1 currently in the facility technical specifications includes not only the designators of the valves which actually provide containment isolation, but also the designators of associated solenoid valves. These solenoid valves typically control the air flow to and from pneumatically operated isolation valves. The licensee states that inclusion of these valves in Table 3.6.2-1 has no bearing on the operability requirements of the containment isolation valves proper, and on this basis requests deletion of the listed associated solenoid valves.

The staff has reviewed the changes requested by the licensee with respect to associated solenoid valves. Table 3.6.2-1 contains two types of solenoid valves: one type which actually provides the isolation function, and a second type which serves a control function for the valve providing the actual isolation. Our review indicates the licensee only proposes to delete solenoid valves falling in this latter group (i.e., control-type). The staff has also reviewed the guidance applicable to this matter contained in the NRC's letters of July 2, 1980 and the NRC's Standard Technical Specifications. In neither case is there a requirement for inclusion of associated control valves. The basic requirement for operability is placed on the isolation valve proper, and through periodic functional testing, this requirement also assures operability of associated devices and mechanisms - including solenoid valves. Accordingly, based on the foregoing, the staff concludes that deletion from Table 3.6.2-1 of the designators of associated solenoid valves that do not provide a containment isolation function is acceptable.

4. Configuration Changes. The licensee's May 9, 1985 application proposed several changes to Table 3.6.2-1 to reflect plant modifications. These changes include: (1) deletion of old Item 17 on Table 3.6.2-1, (Pressurizer Relief Tank Gas Sample penetration) which has been sealed with pipe caps; (2) addition of a new item 17 consisting of a hydrogen gas calibration penetration; (3) addition of a second outboard isolation valve to Table 3.6.2-1, Item 18 (to facilitate post-accident sampling of the reactor coolant); and (4) addition of a new Table 3.6.2.1, Item 29, a new Reactor Coolant Sample Return penetration which, if needed, will facilitate return of highly contaminated reactor coolant to the containment sump.

However, on October 7, 1985 a licensee submittal stated that the change to the pressurizer relief tank gas sample penetration was no longer required; hence, these valves will not be removed from Table 3.6.2-1 (although they will be re-numbered as Item 30 instead of old Item 17) and their operability and surveillance requirements will not be changed.

The hydrogen calibration gas penetration (new Item 17) was added to provide conformance with the guidance in NUREG-0737, Item II.F.1, Attachment 6, Containment Hydrogen Monitor. The NRC approval of the licensee's design for this system was transmitted by letter dated April 16, 1984.

The additional outboard containment isolation valve for drawing high radiation level liquid samples (revised Item 18) and the new Reactor Coolant Sample Return penetration (for returning high radiation level liquid samples), new Item 29, were added to provide conformance with the guidance in NUREG-0737 Item II.B.3, Post-Accident Sampling. The NRC letter dated September 1, 1983 transmitted the staff's safety evaluation of this item which concluded that except for two procedural deficiencies, the licensee's Post-Accident Sampling System (PASS) met the criteria of Item II.B.3 of NUREG-0737. This NRC position was further supported by License Amendment No. 85 issued on November 23, 1984 which imposed a License Condition requiring that the PASS be installed by July 1, 1986, or startup from the Cycle 9 refueling outage, whichever is earlier.

Based on the above information, the staff concludes that the changes in plant configuration were approved by prior NRC acceptance of the licensee's proposed implementation of the Containment Hydrogen Monitoring and Post-Accident Sampling Systems. The addition to Table 3.6.2-1 of the isolation valves for these containment penetrations will ensure that appropriate operability requirements, limiting conditions for operation, and surveillance requirements are established for the valves.

associated with these penetrations. Thus, the staff concludes that the proposed additions to Table 3.6.2-1 are acceptable.

#### 4.0 CONTACT WITH STATE OFFICIAL

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

#### 5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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 changes to the surveillance requirements. The staff has determined that the amendment involves 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets 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 amendment.

#### 6.0 CONCLUSION

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations and (3) the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

#### 7.0 ACKNOWLEDGEMENT

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