November 7, 2003

Mr. Harold B. Ray
Executive Vice President
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING CONTAINMENT EQUIPMENT HATCH (TAC NOS. MC0317 AND MC0318)

Dear Mr. Ray:

By letter dated August 4, 2003, Southern California Edison Company submitted for NRC staff review proposed change number 534. In this amendment proposal, you requested to revise Technical Specification 3.9.3, "Containment Penetrations." Specifically, the proposed changes would permit the Containment equipment hatch to be open during core alterations and movement of irradiated fuel in containment, with certain precautionary provisions in place.

The staff has completed its preliminary review of your submittal, and has identified a number of items for which additional information is needed to continue its review. The enclosed request for additional information (RAI) contains questions that need your response. We request that the additional information be provided within 30 days of receipt of this letter. This 30-day response time frame was discussed with Mr. Jack Rainsberry of your staff on November 5, 2003. If circumstances result in the need to revise your response date, or if you have any questions, please contact me at 301-415-8450.

Sincerely,

/RA/
Bo M. Pham, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure: Request for Additional Information

cc w/encl: See next page

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The staff has completed its preliminary review of your submittal, and has identified a number of items for which additional information is needed to continue its review. The enclosed request for additional information (RAI) contains questions that need your response. We request that the additional information be provided within 30 days of receipt of this letter. This 30-day response time frame was discussed with Mr. Jack Rainsberry of your staff on November 5, 2003. If circumstances result in the need to revise your response date, or if you have any questions, please contact me at 301-415-8450.

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ACCESSION NO: ML033110624 **NRR-088** *** Concurred via RAI input**

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San Onofre Nuclear Generating Station, Units 2 and 3

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San Clemente, CA 92764-0128

REQUEST FOR ADDITIONAL INFORMATION (RAI)

SOUTHERN CALIFORNIA EDISON COMPANY

SAN ONOFRE NUCLEAR GENERATING STATION (SONGS), UNITS 2 AND 3

CONTAINMENT STRUCTURE EQUIPMENT HATCH SHIELD DOORS

DOCKET NOS. 50-361 AND 50-362

By letter dated August 4, 2003, Southern California Edison (the licensee) submitted proposed amendments to Technical Specifications (TSs) for SONGS, Units 2 and 3. The proposed amendments requested to revise the TSs to permit the Containment equipment hatch to be open during core alterations and movement of irradiated fuel in containment. To support this proposal, the licensee performed a re-analysis of the design basis Fuel Handling Accident (FHA) at SONGS, Units 2 and 3.

The Nuclear Regulatory Commission (NRC) staff has reviewed the information provided by the licensee to support the proposed TS changes. In order for the staff to complete its evaluation, the following additional information is requested:

1. What design bases parameters, assumptions or methodologies (other than those provided in the August 4, 2003 submittal), were changed in the radiological design basis accident analyses as a result of the proposed change? If there are many changes, it would be helpful to compare and contrast them in a table format. Also, please provide justification for any changes.

2. Based on a preliminary review of the FHA for the proposed changes, the reviewer is unable to match the calculated doses. The staff requests that the licensee provide their design bases fuel handling calculations. (Note: Answers to other questions in this RAI may also reference these calculation once submitted.)

3. What types of hoses and cables will be allowed to pass through the open equipment hatch? What provision will be made for the designated individual to separate these to close the air lock door, while reducing the hazards of these hoses and cables?

4. A value of 1000 cfm is assumed for the value of unfiltered inleakage into the control room. Because this value is not based upon a measurement, sufficient justification should be provided to explain why this number is appropriate. Provide sufficient details regarding your control room, design, maintenance and assessments to justify the use of and your plans to verify this number.

5. The proposed TSs changes specify that a "designated" crew is available to close the Containment Structure Equipment Hatch Shield Doors rather than a "dedicated" crew who would have no other duties. Specify what other duties the designated crew will have and where they will be stationed relative to the air lock doors.

6. Provide a detailed account of the timing and flow rates, and filtration of the control room HVAC [heating, ventilation, and air conditioning] as it responds to an FHA. A schematic would be helpful.

7. Please provide engineering drawings of the proposed change. A photograph of the equipment hatch would also be helpful in the review of this proposed change. Describe the steps taken to ensure that the proposed flashing will not interfere with closure of the shield doors. What is the acceptable design clearance between the flashing on the shield doors and the containment?

8. Provide the criterion used to decide if the Equipment Hatch Shield Doors are capable of being closed within 30 minutes.

9. Provide the Low Population Zone and Beta doses consistent with the information provided in current UFSAR [Updated Final Safety Analysis Report].

10. What criteria will be used to determine if closure of the Containment is necessary in the event that environmental conditions could impact fuel handling? Has the impact of wind on fuel handling been evaluated (for example, reduced pool visibility due to pool surface disruption)? What steps would be taken in the event of severe weather to minimize the impact of flying debris?

11. There appears to be inconsistencies between values used in the UFSAR and the values provided in Table 1 of the licensee's submittal, without a provided justification for the changes. Please verify the parameter provided in Table 1 against those in the analysis utilized to justify this amendment request, and provide a justification for the changes in values from those previously accepted.

Parameter	Table 1	UFSAR Value	UFSAR Location
Inflow & Recirculation Filter Efficiencies	Elemental & Organic Iodine 95% Particulate 99%	No credit taken for charcoal absorbers	Page 6.4-4, Section C, Carbon Absorbers Also, Table 15B-5

12. General Design Criterion 64 of 10 CFR Part 50, Appendix A, states that means shall be provided for monitoring the reactor containment atmosphere, spaces containing components for recirculation of loss-of-coolant accident fluids, effluent discharge paths, and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences, and from postulated accidents. The proposed change should consider how Criterion 64 will be met in the event of a FHA with the equipment hatch open. Moreover, this information should be included as part of the Bases discussion.

    Provide the bases for meeting Criterion 64 for the proposed change. Please confirm that your emergency planning dose assessment methodology includes the ability to assess this accident. For example, does your methodology include the capability to determine the source term, release rate out of containment, meteorology and consider feedback via field monitoring health physics survey teams? Have you evaluated the need for any special radiological monitoring or survey equipment (i.e., in-plant equipment or field team survey equipment) to evaluate the radiological conditions of this

accident scenario? Will your emergency response personnel be trained to deal with this accident scenario?

13. The proposed change states:

"With the proposed TS 3.9.3 changes, the crew tasked with closing the containment shield doors as a means of providing [for] containment closure will be working [performing this activity from] outside containment." "Since containment is unlikely to become pressurized during an in-containment fuel handling accident during refueling, there is no motive force for airborne radioactivity to be propelled through the opening. As a result, the resultant dose to the crew is anticipated to be minimal."

Provide justification for the statement that "there is no motive force for airborne radioactivity," considering the motive force that may be caused by (1) in containment heat sources, (2) the pressure from external sources such as wind, or interfaces with pressurized buildings, or (3) heating of the containment by the sun.

14. 10 CFR 50.36 states that:

> A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:. . . .
>
> (B) Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The licensee's proposed analysis utilizes an initial condition of 72 hours of fuel decay for the FHA. The proposed TS does not provide a limiting condition of operation for this initial condition. Please justify why this decay time does not meet Criterion 2 of 10 CFR 50.36 or modify the TS to include the decay time.

15. Will your Emergency Plan be updated to include an accident release through the equipment hatch? Will your Emergency Operating Procedures be updated to address the specific details needed to respond to this accident scenario?

16. Will the State Emergency Response personnel be informed about this accident scenario?

17. The control room (CR) radiological analysis supporting this license amendment request is based on a FHA inside containment with the containment open to the outside environment. All airborne radioactivity reaching the containment atmosphere is assumed to be exhausted within 2 hours to the outside environment via the open containment equipment hatch shield doors. This analysis uses a CR atmospheric dispersion factor (χ/Q value) of 3.1E-3 sec/m^3, which is presented in Section 2.3.4.2 of the UFSAR.

UFSAR Section 2.3.4.2 states that the CR χ/Q value of 3.1E-3 sec/m^3 is based on the Murphy & Campe diffuse source-point receptor algorithm. This algorithm is applicable when activity is assumed to leak from many points on the surface of the containment in conjunction with a single point receptor (i.e., CR air intake); the activity is assumed to be homogeneously distributed throughout the containment and the release rate is assumed to be reasonably constant over the surface of the building. This is not the situation in this accident scenario where the release is assumed to occur through the open containment equipment hatch shield doors. As such, please justify the use of the Murphy & Campe diffuse source-point receptor algorithm in this analysis.

18. If the Murphy & Campe diffuse source-point receptor algorithm is to be used in this analysis, UFSAR Section 2.3.4.2 states that a value of 180 ft (54.9 m) was assumed for the distance s between the containment surface and receptor location (i.e., CR air intake). UFSAR Figure 6.4-3 shows the location of the two emergency CR air intakes with respect to the Unit 2 and Unit 3 containment structures and seems to indicate that the distance s between the closest containment surface and each air intake is more like 90 ft (27.4 m) rather than 180 ft (54.9 m). Please justify the continued use of 180 ft (54.9 m) for the value of s in this analysis.