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Manager of
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August 5, 2003

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D.C. 20555

Subject: **Docket Nos. 50-361 and 50-362**
Response to Generic Letter 2003-01,
"Control Room Habitability"
San Onofre Nuclear Generating Station Units 2 and 3

Dear Sir or Madam:

Enclosure 1 provides Southern California Edison's (SCE's) response to Generic Letter (GL) 2003-01, "Control Room Habitability," issued by the NRC on June 12, 2003. GL 2003-01 requested licensees to submit information that demonstrates that the control room at each of their respective facilities complies with the current licensing and design bases, and applicable regulatory requirements, and that suitable design, maintenance and testing control measures are in place for maintaining this compliance.

GL 2003-01 requested that a response be submitted within 180 days, or, if the licensee would not be able to provide the information or could not meet the requested 180 days, the addressee should submit a written response indicating this within 60 days of the date of the generic letter. SCE is providing the 60-day response because inleakage testing of the control room will not be completed within 180 days. A schedule for providing all information requested by GL 2003-01 is provided in the enclosure.

If you have any question or require additional information, please contact Mr. Jack Rainsberry at 949-368-7420.

Sincerely,

Enclosures

cc: T. P. Gwynn, Acting Regional Administrator, NRC Region IV
B. M. Pham, NRC Project Manager, San Onofre Units 2, and 3
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 & 3

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ENCLOSURE 1

GENERIC LETTER 2003-01
RESPONSE

GENERIC LETTER 2003-01 RESPONSES

Provided below in bold text are the questions from Generic letter 2003-01, "Control Room Habitability," followed by Southern California Edison's response.

Addressees are requested to provide the following information within 180 days of the date of this generic letter. If an addressee cannot provide the information or cannot meet the requested completion date, the addressee should submit a written response indicating this within 60 days of the date of this generic letter. The response should address any alternative course of action the addressee proposes to take, including the basis for the acceptability of the proposed alternative course of action and the schedule for completing the alternative course of action.

1. Provide confirmation that your facility's control room meets the applicable habitability regulatory requirements (e.g., GDC 1, 3, 4, 5, and 19) and that the CRHSs are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases.

NEI 99-03, Revision 1, "Control Room Habitability Guidance," [Reference 1] identifies a process to assemble and review the licensing and design bases for Control Room Habitability (CRH). Southern California Edison (SCE) will perform a review using the guidance of NEI 99-03, Revision 1. Based on this review, SCE will submit a letter by December 9, 2003 (i.e., within 180 days after the issuance of Generic Letter 2003-01) to describe the applicable habitability regulatory requirements (e.g., GDC 1, 3, 4, 5, and 19) for the San Onofre Units 2 and 3 control rooms and how the Control Room Habitability Systems (CRHSs) are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases.

(a) [Confirm] That the most limiting unfiltered inleakage into your CRE (and the filtered inleakage if applicable) is no more than the value assumed in your design basis radiological analyses for control room habitability. Describe how and when you performed the analyses, tests, and measurements for this confirmation.

(1)(a) RESPONSE:

The San Onofre Units 2 and 3 design basis radiological analyses assume 10 cubic feet per minute of unfiltered inleakage into the Control Room Envelope (CRE) due to ingress and egress. This assumption implies that, due to control room pressurization, no other source of filtered or unfiltered inleakage into the control room envelope exists. The modeled ingress/egress inleakage rate is consistent with guidance provided in Standard Review Plan 6.4 and with the Murphy-Campe paper presented at the 13th AEC Air Cleaning Conference [Reference 2].

Testing performed to date has been to demonstrate that the requirement of 0.125 inch water gauge positive pressure with respect to atmosphere can be met. This requirement is stated in Technical Specification (TS) Surveillance Requirement (SR) 3.7.11.4. As identified in Generic Letter 2003-01, control room inleakage is not directly measured by pressurization testing. For this reason, and to ensure that the most limiting inleakage into the CRE is considered in the radiological analyses, SCE will revise the radiological analyses to model a greater inleakage value and perform CRE inleakage testing. Increasing the inleakage value will provide a more realistic acceptance criterion for inleakage testing. The revised analyses and CRE inleakage testing will be completed prior to the Unit 3 Cycle 13 outage that is currently scheduled to begin in September 2004. Following the completion of inleakage testing, SCE will submit a letter describing how and when the analyses, tests, and measurements were performed and the results of the testing in order to demonstrate whether the most limiting inleakage into the CRE is no more than the value assumed in the revised design basis radiological analyses for control room habitability.

The schedule to complete the above actions requires more than the 180 days requested in Generic Letter 2003-01. The additional time is necessary to enable San Onofre Units 2 and 3 to revise the radiological analyses, to interview and select a qualified testing vendor, and to ensure adequate manpower to prepare and support the Unit 2 Cycle 13 outage that is currently scheduled for the first quarter of 2004.

(b) [Confirm] That the most limiting unfiltered inleakage into your CRE is incorporated into your hazardous chemical assessments. This inleakage may differ from the value assumed in your design basis radiological analyses....

(1)(b) HAZARDOUS CHEMICAL ASSESSMENT RESPONSE:

The San Onofre Units 2 and 3 design basis hazardous chemical analyses evaluate control room inleakage for both offsite and onsite potential releases. All inleakage is assumed to be unfiltered.

The hazardous chemical assessment analyses for off-site releases of chemicals that require toxic gas protection use the value of 2,201.3 cubic feet per minute of inleakage into the isolated and unpressurized CRE. This value was derived based on outleakage testing performed in 1982.

The bounding hazardous chemical assessment analysis for on-site releases of chemicals that require toxic gas protection assumes a concurrent seismic event. The seismic event causes cracking of the non-qualified plaster walls separating the control room from two cable riser galleries. Total failure of these plaster walls is conservatively assumed; the cracks would actually be expected to be small in size. The analysis for this bounding case uses a value of 4,511.3 cubic feet per minute of inleakage into the isolated and unpressurized CRE, which includes additional inleakage due to the failed plaster walls.

To ensure that the most limiting inleakage into the CRE is considered in the hazardous chemical analyses, San Onofre Units 2 and 3 will perform CRE inleakage testing as described in the response to Item (1)(a). Following the completion of inleakage testing, SCE will submit a letter describing how and when the analyses, tests, and measurements were performed and the results of the testing in order to demonstrate whether the most limiting inleakage into the CRE is no more than the value assumed in the design basis hazardous chemical analyses for control room habitability.

(b) ... Also, confirm that the reactor control capability is maintained from either the control room or the alternate shutdown panel in the event of smoke.

(1)(b) SMOKE RESPONSE:

The San Onofre Units 2 and 3 design has the capability of maintaining reactor control from either the control room or the evacuation shutdown panel (ESP) in the event of smoke present in the CRE due to a smoke source that is either inside or outside the control room.

The control room normal Heating, Ventilation, and Air Conditioning (HVAC) system provides the capability to detect, actuate, and automatically place the control room normal HVAC air distribution system in the Smoke Removal mode to clear the control room atmosphere of smoke. The control room is constantly manned, and any smoke from a source internal to the CRE, such as the control panel area or support areas, will be quickly detected. Therefore, manual initiation of the Smoke Removal mode is also available as a means to clear the control room atmosphere of smoke. Procedural guidance addresses use of self-contained breathing apparatus and fire fighting equipment, as appropriate, to mitigate fire/smoke events within the control room.

Smoke from a source external to the CRE could be drawn in by the normal HVAC unit outside air make-up. Due to the low air turnover rate in the control room, sufficient time would be available for the Operators to evaluate the situation and take appropriate action. Elimination of the outside source of smoke into the control room can be accomplished by manually placing either train of the Control Room Emergency Air Cleanup System (CREACUS) in the Toxic Gas Isolation System (TGIS) mode of operation. Subsequent purging of the control room after the external smoke event is terminated can be accomplished by restoring the control room normal HVAC system to operation in the Smoke Removal mode of operation.

Dense smoke in the control room, whether originating from inside or outside the CRE, that is not effectively removed by the above mitigating strategies could require plant shutdown from the ESP. The ESP is physically separated from the control room by appropriate fire barriers in a room supplied by a separate ventilation system with an outside air intake well separated from the Control Room Normal HVAC intake. No single external fire source can impact the control room as well as the safe shutdown pathway to the ESP. The operators may don self-contained breathing apparatus to perform mitigative actions within the control room and to ensure safe transit to the ESP, if necessary.

(c) [Confirm] That your technical specifications verify the integrity of the CRE, and the assumed inleakage rates of potentially contaminated air. If you currently have a ΔP surveillance requirement to demonstrate CRE integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your ΔP surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

(1)(c) RESPONSE:

San Onofre Units 2 and 3 Technical Specification (TS) Limiting Condition for Operation (LCO) 3.7.11 requires the control room boundary to be tested every 24 months to demonstrate that the control room boundary has at least 0.125 inches water gauge positive pressure with respect to the atmosphere. The TS 3.7.11 Bases state that this pressurization prevents unfiltered inleakage. Pressurization tests over the past 10 years show that the lowest positive pressure for a single operating CREACUS train was 0.56 inches of water gauge with respect to the atmosphere.

The San Onofre Units 2 and 3 control room design has numerous features to minimize and prevent control room inleakage. These features include a design in which the CREACUS units are wholly contained within the CRE, effective boundary maintenance as evidenced by the high pressure gradient across the control room boundary during pressurization tests, and the existence of procedures requiring periodic control room boundary integrity inspections, control room damper inspections, and control of CREACUS breaches during routine maintenance activities.

To ensure that the San Onofre Units 2 and 3 technical specifications verify the integrity of the CRE and the assumed inleakage rates of potentially contaminated air, SCE will submit a License Amendment Request (LAR) to revise TS 3.7.11 by December 9, 2003 (i.e., within 180 days after the issuance of Generic Letter 2003-01). The revised TS 3.7.11 will include surveillance requirements to verify CRE integrity and to confirm that the CRE inleakage rates assumed in the design basis radiological and hazardous chemical analyses are greater than tested inleakage rates. The revised TS 3.7.11 and all necessary modifications to the CRE to demonstrate compliance with the revised TS 3.7.11 would be implemented within 60 days after the completion of baseline inleakage testing described in the responses to Items (1)(a) and (1)(b), or within 60 days of approval of the LAR, whichever is later.

2. If you currently use compensatory measures to demonstrate control room habitability, describe the compensatory measures at your facility and the corrective actions needed to retire these compensatory measures.

(2) RESPONSE:

The San Onofre Units 2 and 3 control room design does not rely on any compensatory measures in order to demonstrate control room habitability when the CREACUS is operable.

Use of Self-Contained Breathing Apparatus (SCBA) as a compensatory measure is required when two trains of CREACUS are inoperable due to an inoperable control room boundary. This SCBA use is described in a Southern California Edison License Amendment Request (LAR) dated October 6, 2000 [Reference 3] which implements TSTF-287, "Ventilation System Envelope Allowed Outage Time". The NRC approved this LAR on January 30, 2001 [Reference 4]. Use of SCBA is not required to demonstrate control room habitability when the CREACUS is operable.

SCBA is available to mitigate the consequences of a Toxic Gas Event. This use of SCBA is allowed by Regulatory Guide 1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," [Reference 5] and is therefore not considered to be a compensatory measure.

3. If you believe that your facility is not required to meet either the GDC, the draft GDC, or the "Principal Design Criteria" regarding control room habitability, in addition to responding to 1 and 2 above, provide documentation (e.g., Preliminary Safety Analysis Report, Final Safety Analysis Report sections, or correspondence) of the basis for this conclusion and identify your actual requirements.

(3) RESPONSE:

San Onofre Units 2 and 3 are required to meet the General Design Criteria (GDC) described in 10 CFR Part 50, Appendix A, including those GDCs that are related to control room habitability (i.e., GDC 1, 3, 4, 5 and 19).

REFERENCES

1. NEI 99-03, Revision 1, Control Room Habitability Guidance, dated March, 2003.

2. K. G. Murphy and K. M. Campe, "Nuclear Power Plant Control Room Ventilation System Design for meeting General Design Criterion 19," 13th AEC Air Cleaning Conference, August 1974.

3. Letter from D. E. Nunn (SCE) to Document Control Desk (NRC), dated October 6, 2000: Subject, "Amendment Application Numbers 203 and 188, Change to Technical Specification 3.7.11, 'Control Room Emergency Air Cleanup System (CREACUS),' San Onofre Nuclear Generating Station Units 2 and 3."

4. Letter from Girija S. Shukla (NRC) to Harold B. Ray (SCE), dated January 30, 2001: Subject, "Issuance of Amendments on Control Room Emergency Air Cleanup System."

5. Regulatory Guide 1.78, Revision 0, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release," June 1974.