

GL 2008-01

July 23, 2011

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

**Subject: Docket Nos. 50-361 and 50-362
Supplemental Response to NRC Generic Letter 2008-01, "Managing
Gas Accumulation in Emergency Core Cooling, Decay Heat Removal,
and Containment Spray Systems"
San Onofre Nuclear Generating Station, Units 2 and 3**

Reference: December 22, 2009 letter from R. T. Ridenoure (SCE) to Document Control Desk (NRC), Subject: Response to Request for Additional Information on the Response to NRC Generic Letter 2008-01, San Onofre Nuclear Generating Station, Units 2 and 3 (ML093570447)

Dear Sir or Madam:

Southern California Edison (SCE) provided its response to Request for Additional Information (RAI) on the Response to Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," in the above Reference. As a result of that response, SCE added Corrective Action 9 to continue to participate in the development of guidance relative to the transport of gas voids in suction piping to the Emergency Core Cooling System (ECCS) pumps and to re-perform the analysis, once the guidance was finalized. SCE committed to provide a supplemental response with the results of the re-analysis.

Enclosure 1 to this letter provides the supplemental response with the results of the re-analysis.

Enclosure 2 provides the Summary of Corrective Actions and Schedule from the above Reference, Enclosure 2. Corrective Action 9 is completed with this letter, and Corrective Action 4 was completed during the Cycle 16 outages. Corrective Action 6 remains open. SCE considers these Corrective Actions to be regulatory commitments. There are no new Corrective Actions or commitments in this letter.

If you have any questions or require additional information, please contact Ms. Linda T. Conklin at (949) 368-9443.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 7/23/2011
(Date)

Sincerely,

A handwritten signature in black ink, appearing to be the initials 'MR' followed by a flourish.

Enclosures:

1. Supplemental Response for Gas Void Transport Re-analysis
2. Summary of Corrective Actions and Schedule

cc: E. E. Collins, Regional Administrator, NRC Region IV
R. Hall, NRC Project Manager, San Onofre Units 2 and 3
G. G. Warnick, NRC Senior Resident Inspector, San Onofre Units 2 and 3

Supplemental Response for Gas Void Transport Re-analysis

This enclosure provides the Supplemental Response to Generic Letter (GL) 2008-01 as committed to in Reference 1, Enclosure 2, Corrective Action 9:

“SCE will continue to participate in the development of guidance relative to the transport of gas voids in suction piping to the ECCS pumps and will re-perform the analysis, once the guidance is finalized. SCE will provide a supplemental response with the results of the re-analysis.”

The following information is provided in this enclosure:

Results of SCE Calculation M-0012-01D, Revision 3, CCN No. D0047333, performed in accordance with the guidance provided in WCAP-17276-P, Revision 1, demonstrating that potential voids due to construction fit-up tolerances will not challenge pump operability.

The original conclusions documented in the Nine-Month Response (Reference 2) with respect to the licensing basis evaluation, testing evaluations, and corrective action evaluations have not changed. This supplement will only discuss the results of the gas void transport re-analysis.

Gas Void Transport Analysis

WCAP-17276-P, Revision 1, “Investigation of Simplified Equation for Gas Transport,” was issued for industry use on February 3, 2011 (Reference 3), and forms the basis for the SONGS gas void transport analysis.

The WCAP provides a Simplified Equation for the determination of allowable void volumes in pump suction piping, such that pump operability is maintained. The Simplified Equation is essentially the same methodology utilized by SCE in preparing the initial Generic Letter response (Reference 2), with four limitations imposed on the applicability based on subsequent industry testing and analyses. In addition to the limitation relative to void volume and downstream down-comer volume described above, system flow rate, transport time, and off-take limitations are imposed.

The SONGS gas transport evaluation (Reference 4) was revised to reflect the methodology prescribed by the WCAP. The allowable gas volume was determined for representative horizontal piping segments in the ECCS pump suction piping, as governed by the limitations outlined above.

The volumes of the potential voids due to piping construction fit-up tolerances are less than the allowable volumes as determined by the WCAP methodology. This demonstrates that the potential voids due to piping construction fit-up tolerances will not challenge ECCS pump operability.

REFERENCES for Enclosure 1

1. December 22, 2009 letter from R. T. Ridenoure (SCE) to Document Control Desk (NRC), Subject: Response to Request for Additional Information on the Response to NRC Generic Letter 2008-01, San Onofre Nuclear Generating Station, Units 2 and 3 (ML093570447).
2. October 14, 2008 letter from M. P. Short (SCE) to Document Control Desk (NRC), Subject: Nine-Month Response to NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," San Onofre Nuclear Generating Station, Units 2 and 3 (ML082950468).
3. WCAP-17276-P, Revision 1; "Investigation of Simplified Equation for Gas Transport," February 3, 2011 (transmittal letter ML110480382).
4. SCE Calculation M-0012-01D, "NPSH of ESF Pumps," Rev. 3; Appendix A, "Impact of Gas Voids in ECCS and CS Pump Suction Piping," CCN No. D0047333.

SUMMARY OF CORRECTIVE ACTIONS AND SCHEDULE

(from Enclosure 1, Reference 1)

All identified corrective actions will be tracked per the Corrective Action Program (CAP). The due dates are commensurate with plant need and safety significance of resolution.

Item	Corrective Action	Due Date
1.	Technical Specification Bases for SR 3.5.2.4 will be revised to read "Maintaining the piping from the RWST to the RCS full of water..."	90 days after completion of the Unit 3 Cycle 15 Refueling outage (scheduled for October 2008) Complete
2.	Procedure SO23-3-2.7.2, "Safety Injection System Removal/Return to Service Operation," (Reference 15) will be revised to include sweeping of the inverted "U" sections in the HPSI Train "A" discharge piping during plant restart until new vents are installed.	Prior to restart of the unit for the Unit 3 Cycle 15 Refueling outage (scheduled for October 2008) Complete
3.	Procedure SO23-3-3.8, "Safety Injection Monthly Tests" (Reference 17) specifies that one of the objectives is to vent accessible valves on the discharge side. The procedure vents valves on both the suction and discharge sides and vents valves deemed necessary to ensure that the system is sufficiently full without limitations imposed by accessibility. The procedure objective will be revised for clarification only.	Prior to restart of the unit for the Unit 3 Cycle 15 Refueling outage (scheduled for October 2008) Complete
4.	A vent valve will be added to the Train "A" discharge piping of the high pressure safety injection pumps in each unit.	U2C16 and U3C16 outages scheduled for the fall of 2009 and 2010, respectively Complete
5.	An Engineering procedure will be developed to formalize SIT monitoring to provide a formal process of quantifying leakage into the low pressure side of the Safety Injection system.	90 days after completion of the Unit 3 Cycle 15 Refueling outage (scheduled for October 2008) Complete

Continues on next page

Item	Corrective Action	Due Date
6.	SCE is continuing to support the industry and NEI Gas Accumulation Management Team activities regarding the resolution of generic TS changes via the TSTF traveler process. Following NRC approval of this TSTF, SCE will evaluate adopting the TSTF to either supplement or replace current TS and LCS requirements and submit the license amendment, if appropriate.	1 year after NRC approval of TSTF
7.	SCE will conduct confirmatory walkdowns as identified in Item 6 of the Design Evaluation for Unit 2 accessible and inaccessible piping and submit a Nine-Month supplemental response with the results of these walkdowns and any resulting corrective actions.	120 days after completion of the Unit 2 outage (scheduled for January 2009) (Revised by Reference 8) Complete
8.	SCE will conduct confirmatory walkdowns as identified in Item 6 of the Design Evaluation for Unit 3 accessible and inaccessible piping and submit a Nine-Month supplemental response with the results of these walkdowns and any resulting corrective actions.	60 days after completion of the Unit 3 Cycle 15 Refueling outage (scheduled for October 2008) Complete
9.	SCE will continue to participate in the development of guidance relative to the transport of gas voids in suction piping to the ECCS pumps and will re-perform the analysis, once the guidance is finalized. SCE will provide a supplemental response with the results of the re-analysis.	6 months after guidance is finalized Complete