

December 22, 2015

Mr. Thomas J. Palmisano
Vice President and Chief Nuclear Officer
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 –
SECOND REQUEST FOR ADDITIONAL INFORMATION REGARDING THE
LICENSE AMENDMENT REQUEST TO MAKE CHANGES TO SPECIFIC
REGULATORY GUIDE COMMITMENTS RELATED TO IMPLEMENTATION OF
“COLD AND DARK” STATUS (CAC NOS. L53073 AND L53074)

Dear Mr. Palmisano:

By letter dated August 20, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15236A018), as supplemented by letter dated November 19, 2015 (ADAMS Accession No. ML15327A410) Southern California Edison (SCE) submitted a proposed amendment to the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS) Updated Final Safety Analysis Report (UFSAR) for review and approval by the U.S. Nuclear Regulatory Commission (NRC).

The proposed amendment would revise Appendix 3A of the UFSAR to more fully reflect the permanently shutdown status of SONGS. The revision would include a limited set of exceptions and clarifications to referenced Regulatory Guides to reflect the significantly reduced decay heat loads in the SONGS Units 2 and 3 Spent Fuel Pools and to support corresponding design basis changes and modifications that will allow for implementation of the “cold and dark” strategy outlined in the SONGS Post-Shutdown Decommissioning Activities Report (PSDAR).

The NRC staff has completed its initial review of the application and the supplemental information provided in the November 19, 2015, letter, and has determined that In order to complete its review, the staff will need additional information as specified in the Enclosure. An advance copy of the requested information was forwarded to your staff on December 11, 2015. In order to continue an expedited review of the subject license amendment request, please respond to this request for additional information by January 15, 2016.

T. Palmisano

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If you have any questions, please contact me at (301) 415-3178 or via e-mail at Marlayna.Vaaler@nrc.gov.

Sincerely,

/RA/

Marlayna G. Vaaler, Project Manager
Reactor Decommissioning Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

Docket Nos.: 50-361 and 50-362

Enclosure:
Request for Additional Information

cc: Distribution via Listserv

T. Palmisano

- 2 -

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Enclosure:
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DISTRIBUTION: DCD R/F R. Browder, RIV R. Kellar, RIV S. Jones, NRR

ADAMS Accession No. ML15348A367

OFFICE	NMSS/RDB/PM	NMSS/DUWP/LA	NRR/DSS/SBPB	NMSS/RDB/BC
NAME	M. Vaaler	C. Holston	G. Casto <i>(via email)</i>	B. Watson
DATE	12/14/15	12/16/15	12/14/15	12/22/15

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SECOND REQUEST FOR ADDITIONAL INFORMATION

PROPOSED CHANGES TO SPECIFIC REGULATORY GUIDE COMMITMENTS

SOUTHERN CALIFORNIA EDISON

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

DOCKET NOS. 50-361 AND 50-362

By letter dated August 20, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15236A018), as supplemented by responses to an initial request for additional information provided by letter dated November 19, 2015 (ADAMS Accession No. ML15327A410), Southern California Edison (SCE) requested an amendment to the facility operating licenses for the San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS). The proposed amendment would revise Appendix 3A of the Updated Final Safety Analysis Report (UFSAR) to more fully reflect the permanently shutdown status of SONGS. The revision would include a limited set of exceptions and clarifications to referenced Regulatory Guides to reflect the significantly reduced decay heat loads in the SONGS Units 2 and 3 spent fuel pools and to support corresponding design basis changes and modifications that will allow for implementation of the "cold and dark" strategy outlined in the SONGS Post-Shutdown Decommissioning Activities Report (PSDAR). The following additional information is necessary to complete the NRC staff's technical review:

REQUESTS FOR ADDITIONAL INFORMATION

4. Design Feature Technical Specification for Drainage Prevention

General Design Criterion (GDC) 61, "Fuel Storage and Handling and Radioactivity Control," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, states in part that fuel storage facilities shall be designed to prevent a significant reduction in fuel storage coolant inventory under accident conditions. In addition to capabilities described in the SONGS UFSAR, this criterion has been incorporated in the SONGS Facility Operating License as Technical Specification (TS) 4.3.2, "Drainage," in Section 4, "Design Features," which states:

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below Technical Specification 3.1.1 value (23 feet above the top of irradiated fuel assemblies seated in the storage racks).

The requirements of 10 CFR 50.36(c)(4), "*Design Features*," specify that the design features to be included in the TSs are those features of the facility such as materials of construction or geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not included in other portions of the TSs.

In Attachment 3 to the letter dated November 19, 2015, SCE provided a spent fuel pool level correlation that indicated the centerline of the spent fuel pool cooling suction line was located at an elevation below the level specified in TS 4.3.2.

Enclosure

Since the spent fuel pool cooling suction line could drain or siphon coolant from the spent fuel pool volume inside the fuel transfer and cask loading area gates, the level specified in TS 4.3.2 (23 feet above the top of irradiated fuel assemblies seated in the storage racks) does not conform with the geometric arrangement of drainage prevention features provided for spent fuel pool piping penetrations and attached piping.

Accordingly, please propose a revision to TS 4.3.2 that conforms to the geometric arrangement of piping penetrations and siphon protection design features within the spent fuel pool, or explain how inadvertent drainage to the level specified in TS 4.3.2 through the spent fuel pool cooling system suction piping and the independent spent fuel pool cooling system suction line is not possible.

5. Makeup Water

In its response to RAI-SBPB-01, SCE described that any liner leaks into the leak chase would be limited to approximately 50 gallons/minute, which is within the capacity of the identified makeup capability, and that such leaks could also be mitigated by shutting the leak chase drain valves if appropriate to do so.

For design basis events that could cause a minor liner leak, such as a fuel handling accident, estimate the time available to take mitigating actions prior to the spent fuel water level decreasing to the point shielding may be ineffective (e.g., 10 feet above the top of stored fuel). Based on the available time, provide justification that appropriate makeup can be delivered to the spent fuel pool with a high probability of success before shielding of the fuel becomes ineffective.

6. Island Spent Fuel Pool Cooling System

In its response to RAI-SBPB-01, SCE described that the proposed independent spent fuel pool cooling system independently takes suction from the spent fuel transfer pool through a pipe that extends from the operating floor down to the same elevation as the existing spent fuel pool cooling suction line.

GDC 61 states in part that fuel storage facilities shall be designed with a residual heat removal capability having reliability and testability that reflects the importance to safety of decay heat and other residual heat removal.

Since the proposed independent spent fuel pool cooling system would draw water vertically from the transfer canal, address the effect of the suction design and location on the reliability of spent fuel pool cooling compared to the existing cooling system. Specifically, explain whether available net positive suction head would be adequate to restore forced cooling following an extended loss of cooling with the resulting increase in spent fuel pool temperature and whether transfer gate closure would interfere with cooling for an extended period. Justify the adequacy of the proposed independent cooling system design relative to GDC 61 considering these potential limitations on cooling system reliability.