



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 9, 2011

LICENSEE: Southern California Edison Company

FACILITY: San Onofre Nuclear Generating Station, Units 2 and 3

SUBJECT: SUMMARY OF JANUARY 12, 2011, MEETING WITH SOUTHERN CALIFORNIA EDISON COMPANY ON PLANNED LICENSING ACTIONS TO ALLOW THE USE OF AREVA FUEL AT THE SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3 (TAC NOS. ME5288 AND ME5289)

On January 12, 2011, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 1 public meeting with representatives of Southern California Edison Company (SCE) at NRC Headquarters in Rockville, Maryland. SCE requested the pre-application meeting to brief the NRC staff about its planned submittal of an exemption request and an associated license amendment request (LAR) for the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3, to allow for the future use of AREVA fuel assemblies in both units. The meeting was a follow up to a meeting held on July 21, 2010, and was noticed on December 23, 2010. The list of meeting participants is enclosed. Portions of the meeting were closed due to the discussion of proprietary information. SCE's non-proprietary presentation slides are available through the NRC's Agencywide Documents Access and Management System (ADAMS), at ADAMS Accession No. ML110120630.

SCE intends to request approval for the permanent use of AREVA fuel assemblies in SONGS, Units 2 and 3, beginning with the Unit 3 Cycle 17 core, currently scheduled for startup in November 2012. To support this, SCE plans to submit licensing actions needed for the conversion to AREVA fuel in June 2011, including revisions to the core reload methodology for SONGS, the associated Technical Specification (TS) changes, and a permanent exemption to Section 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 and Appendix K to 10 CFR Part 50. At the July 21, 2010, meeting, the NRC staff suggested that a follow-up meeting would be helpful to obtain a better understanding of the nature and extent of the planned changes in the analytical methods.

SCE began its presentation by summarizing the previous meeting and reviewing the reasons for pursuing the fuel design change. SONGS continues to experience grid-to-rod fuel fretting failures and thus remains one of a small number of plants unable to meet the Institute of Nuclear Power Operations' current goal for fuel performance. Thus, SCE is seeking to eliminate fuel failures, reduce fuel inspection and core redesign efforts, and support longer fuel cycles, while meeting high seismic design requirements. SCE is currently using AREVA high thermal performance (HTP™) fuel in eight Lead Fuel Assemblies (LFAs) in SONGS, Unit 2, as approved by the NRC in License Amendment Nos. 222 and 215, dated December 15, 2009, for SONGS, Units 2 and 3, respectively, and a temporary exemption granted on December 17, 2009, for both units. SCE will conduct post-irradiation examination of the LFAs in the next refueling outage for Unit 2, to assess the performance of the AREVA HTP™ fuel.

SCE then described the current SONGS reload methodology, and identified the revisions and changes that will be needed for the conversion to the AREVA fuel. The current reload methodology is based on several approved proprietary topical reports, including SCE-9801-P-A, "Reload Analysis Methodology for the San Onofre Nuclear Generating Station Units 2 and 3", dated June 1999, and CEN-635(S)-P, "Identification of NRC Safety Evaluation Report Limitations and/or Constraints on Reload Analysis Methodology," dated February 1999. The changes necessary to allow the permanent use of the AREVA HTP™ fuel in a full core configuration will include revisions to TS 5.7.1.5, "Core Operating Limits Report," to reflect changes to several of the referenced methodologies to accommodate the new fuel type, and a permanent exemption to 10 CFR 50.46 and 10 CFR 50, Appendix K, to allow the use of M5™ cladding.

SCE provided a general overview of how several supporting analytical methods will be revised to address the AREVA HTP™ fuel. SCE discussed changes in the fuel mechanical design, loss-of-coolant accident (LOCA) and non-LOCA transient analyses, thermal/hydraulic analyses, and fuel rod behavior analyses, and identified those specific elements to be performed by SCE staff or the fuel vendor. SCE described its in-house core reload analysis experience and its awareness of recent NRC interactions with another licensee in the process of a similar fuel conversion. SCE's license amendment request will provide specific responses to NRC staff questions raised in this prior review. SCE and AREVA representatives then described the planned changes to the supporting analyses in greater detail; these portions of the meeting were closed to the public as they involved discussions of proprietary information.

The NRC staff expressed appreciation for SCE's effort to engage the staff early on these issues, noting that other similar fuel transitions have proved to be challenging for both NRC and licensees. In response, SCE encouraged an NRC site audit of the reload methods as part of the staff's review. The staff stated that it would consider a site audit, subject to budget and resource constraints. On a separate topic, the staff noted that two different fuel burnup limits exist for the current SONGS fuel and the AREVA HTP™ fuel, and that SCE would need to obtain explicit NRC approval in the proposed license amendment for the higher burnup limit for the AREVA fuel. The staff also acknowledged that several different computer codes are used in the reload analysis, and that the "cascading" relationship of these codes can be confusing, so it is incumbent on the licensee to clearly identify the changes, their impacts, and the need for explicit NRC approval of those changes. Finally, the staff encouraged SCE to compare the results of its revised fuel analyses with other licensees making similar changes, as the NRC staff is likely to ask SCE to explain any differences in the results.

SCE summarized its presentation and provided its proposed schedule. SCE will seek NRC approval of previously approved reload analysis methods for SONGS that will be revised, as necessary, to properly model the transition full core, permanent use of the AREVA HTP™ fuel in SONGS, Units 2 and 3. SCE will include the results of code testing and benchmarking to demonstrate that the existing codes accurately model the AREVA fuel. The fuel vendor (AREVA) will perform analyses similar to those performed by the current fuel vendor using previously approved methods for fuel mechanical design and LOCA analysis.

The license amendment and exemption applications are expected to be submitted in June 2011, with a request for NRC approval no later than October 2012.

No members of the public were in attendance. No Public Meeting Feedback forms were submitted for this meeting.

A handwritten signature in black ink that reads "James R. Hall". The signature is written in a cursive style with a large initial "J" and "H".

James R. Hall, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

Enclosure:
List of Attendees

cc w/encl: Distribution via Listserv

LIST OF ATTENDEES

NRC MEETING WITH SOUTHERN CALIFORNIA EDISON

ON PROPOSED LICENSE AMENDMENT AND EXEMPTION FOR USE OF

AREVA FUEL AT SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 AND 3

JANUARY 12, 2011

<u>NAME</u>	<u>AFFILIATION</u>
Anthony Mendiola	NRC/NRR/DSS/SNPB
Tony Uises	NRC/NRR/DSS/SRXB
Randy Hall	NRC/NRR/DORL
Mathew Panicker	NRC/NRR/DSS/SNPB
Ben Parks*	NRC/NRR/DSS/SRXB
Shih-Liang Wu	NRC/NRR/DSS/SNPB
Andrew Proffitt	NRC/NRR/DSS/SNPB
Mike Markley	NRC/NRR/DORL
John Lehning	NRC/NRR/DSS/SNPB
Len Ward	NRC/NRR/DSS/SNPB
Steve Sparks	Southern California Edison (SCE)
Vick Nazareth	SCE
Linda Conklin	SCE
Mark Morgan	SCE
Scott Swoope	SCE
Owen Thomsen	SCE
Larry Losh	AREVA
Bob Baxter	AREVA
Bob Copeland	AREVA

* Participated by telephone

Enclosure

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/RA/

James R. Hall, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-361 and 50-362

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List of Attendees

cc w/encl: Distribution via Listserv

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ADAMS Accession No. Meeting Notice: ML103560146, Meeting Summary: ML110350199, Handouts ML110120630
*via email

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DATE	2/8/11	2/4/11	2/8/11	2/9/11	2/9/11

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