

September 4, 2012

MEMORANDUM TO: FILE

FROM: Joseph M. Sebrosky */RA/*  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNIT NOS. 2  
AND 3 - SUMMARY OF TELEPHONE CONFERENCE RE: ISSUES  
ASSOCIATED WITH LICENSE AMENDMENT REQUEST RELATED TO  
TRANSITION TO AREVA FUEL (TAC NOS. ME6820 AND ME6821)

This memorandum summarizes a telephone discussion on August 20, 2012, between the U.S. Nuclear Regulatory Commission (NRC) staff and Southern California Edison (SCE, the licensee). The discussion related to a license amendment request (LAR) dated July 29, 2011, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML11215A090). The LAR is associated with the unrestricted use of AREVA fuel at San Onofre Nuclear Generating Station (SONGS) Units 2 and 3. SCE participants in the discussion included: Owen Thomsen, Vick Nazareth, Steve Sparks, Scott Swoope, Tom Remick, Stephanie Roberts, and Linda Conklin. NRC staff representatives included Paul Clifford, Mathew Panicker and Joe Sebrosky.

The original purpose of the call was to discuss the enclosed draft requests for additional information (RAIs) and to determine if any of the RAIs needed to be clarified before they were formally issued. Highlights from the phone call include the following:

- The enclosed RAIs will not be formally issued at this time. Instead the RAIs will serve as part of an agenda for an NRC staff audit of SCE calculations that support the LAR.
- The NRC audit is tentatively targeted for the week of October 22, 2012, at SONGS. The timing of the audit is subject to change and is dependent on SCE providing responses to RAIs provided in an August 1, 2012, letter (ADAMS accession number ML12207A261) in the September 2012 time frame. In particular, the response to the August 1, 2012, RAI number 11 will provide the staff with information such that it will be able to develop a confirmatory computer model to allow the staff to perform an independent analysis to support the review of the LAR. The plan is for the staff to perform the independent analysis prior to the audit so that any differences in the staff's analysis results and the licensee's analysis results can be discussed during the audit.
- The staff stated that additional RAIs were possible and that any additional questions that the staff identified would be added to the RAIs found in the enclosure and documented in the audit plan. The purpose of documenting them in the audit plan is to identify the issues that the staff would be seeking to resolve by auditing the SCE calculations that support the LAR. The staff stated that it would develop the audit plan in accordance with the Office of Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits"

(ADAMS Accession No. ML082900195). As a result of the audit the staff expects to identify whether or not RAIs will need to be issued.

- The staff indicated that as part of the audit plan it will identify the SCE calculations that the staff would like to review during the audit. SCE indicated that it would attempt to make the calculations available to the staff prior to the audit.

Docket Nos. 50-361 and 50-362

Enclosure:

Draft RAIs

(ADAMS Accession No. ML082900195). As a result of the audit the staff expects to identify whether or not RAIs will need to be issued.

- The staff indicated that as part of the audit plan it will identify the SCE calculations that the staff would like to review during the audit. SCE indicated that it would attempt to make the calculations available to the staff prior to the audit.

Docket Nos. 50-361 and 50-362

Enclosure:  
Draft RAIs

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**ADAMS Accession No. ML12237A020**

\*per email

OFFICE	NRR/LPL4/PM	NRR/LPL4/LA	NRR/DSS/SNPB	NRR/LPL4/BC	NRR/LPL4/PM
NAME	JSebrosky	JBurkhard (BClayton for)	MPanicker*	MMarkley	JSebrosky
DATE	9/4/12	8/30/12	8/22/12	9/4/12	9/4/12

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## Draft RAIs for SONGS AREVA Fuel Introduction:

Based upon experience acquired in its review of WCAP-16500-P-A Supplement 1 involving the introduction of different CHF correlations in a COLSS/CPCS plant and the unintended consequences on the MSCU analyses, the staff is unwilling to accept SCE's engineering judgment regarding the impact of the AREVA fuel introduction on the MSCU methodology. Please address the following RAIs.

1. Section 4.2.1 of Enclosure 2 to SONGS PCN 600 describes the impact of the AREVA fuel design on the core thermal-hydraulic MSCU methods. This section concludes that since the engineering and systematic factor uncertainties are less for the AREVA fuel design relative to the existing Westinghouse fuel, then "the MSCU analysis for SONGS which determined the 1.31 design DNBR limit and its associated Probability Distribution Function (pdf) is bounding and conservative for AREVA fuel, for both mixed core and full AREVA core configurations." Following approved methods, generate a specific design DNBR limit and associated pdf using AREVA fuel specifications and uncertainties for the limiting mixed core and full core configuration. The impact of differences in calculated DNBR limits and associated pdfs on COLSS/CPCS setpoint analyses (e.g., ROPM, EPOL2/4, BERRi) and predicted fuel rod failures should be discussed.
2. Section 4.8.1.2 of Enclosure 2 to SONGS PCN 600 states that the impact of the new AREVA CHF is limited to the TORC code and that the CETOP-D code and on-line algorithms will not be modified.
  - a. Provide tables of  $CETOP-D_{(CE-1)}$  to  $TORC_{(CE-1, BHTP)}$  correction factors as a function of AXP, temperature, pressure and flow for the COLSS narrow range, CPCS wide range, and transient analysis range of operating conditions. Include a discussion of the impact of mixed core and full core configurations on these correction factors. Also, discuss any interpolation or extrapolation of these values within the reload methods.
  - b. To demonstrate the conservatism of the proposed approach, perform a sample COLSS/CPCS MSCU evaluation using a modified CETOP-D code with the AREVA BHTP CHF correlation (along with associated DNBR pdfs and CETOP-TORC correction factors). Identify any dependence of the COLSS and CPC DNB POL uncertainty with AXP, temperature, pressure, or flow between the two approaches.
  - c. Describe the calculation of AOPM and ROPM using CETOP-D (CE-1) for AOOs and accidents with respect to a mixed core of Westinghouse and AREVA fuel.