

September 12, 2007

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

**SUBJECT: San Onofre Nuclear Generating Station, Units 2 and 3  
Docket Nos. 50-361 and 50-362  
Request to Revise Safety Evaluation for License Amendments  
210 and 202**

References: See Enclosure

Dear Sir or Madam:

Southern California Edison (SCE) requested a full-scope implementation of the Alternative Source Term (AST) in Reference 1. The submittal also requested an expansion of the allowed use of fuel failure estimates by Departure from Nucleate Boiling (DNB) statistical convolution methodology from only the reactor coolant pump sheared-shaft event to the Updated Final Safety Analysis Report (UFSAR) Chapter 15 non-Loss-of-Coolant-Accident (non-LOCA) events that assume a loss of flow (i.e., a loss of AC power) and failed fuel. The Safety Evaluation issued to SCE in support of License Amendments 210 and 202 (Reference 2) approved full scope implementation of the AST. SCE has implemented the approved AST methodology changes.

The AST Safety Evaluation approved the SCE request for expanded use of the DNB statistical convolution methodology with the statement, "However, the use of any combination of computer code, critical heat flux correlation, or fuel design, other than that explicitly approved by CENPD-183-A, will require submittal of revised probability distributions for NRC staff review and approval." The restrictions on critical heat flux correlation and fuel design are appropriate. However, the computer code restriction on the use of the DNB statistical convolution methodology is not necessary to ensure appropriate use. As part of a power uprate effort for Waterford Steam Electric Station Unit 3 (Reference 3, Attachment 5, Section 2.13.0.1), the DNB statistical convolution methodology without the computer code restriction was submitted for use in analyzing all non-LOCA fuel failure events except return-to-power main steam line break. Reference 4 documents NRC approval of Reference 3.

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Since the approval of CENPD-183-A, in the early 1980's, Westinghouse and SCE have upgraded computer codes. The newer codes (notably CETOP-D and CENTS) have been reviewed and approved by the NRC, and are currently in use for San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 non-LOCA transient analyses. References 5 and 6 describe the acceptability of the use of CETOP-D at SONGS Units 2 and 3. In particular, Reference 6 (Enclosure 2, Sections 6.3 and 7.0) states:

**"6.3    Application to TORC Design Model**

Statistical combination of system parameter uncertainties into the MDNBR limit precludes the need for deterministic application of penalty factors to the design TORC model. The design CETOP-D model used with the new MDNBR limit of 1.31 consists of best estimate system parameters with no engineering factors or other adjustments to accommodate system parameter uncertainties. The inlet flow split will, however, continue to be chosen such that the best estimate design CETOP-D model will yield accurate or conservative MDNBR predictions when compared with MDNBR values from detailed TORC analysis (6-1)."

**"7.0    Conclusions**

Use of a 1.31 MDNBR limit with a best-estimate design CETOP-D model for the SONGS-2 Cycle 2 core will ensure with at least 95% probability and 95% confidence, that the hot pin will not experience a departure from nucleate boiling. The 1.31 MDNBR limit includes explicit allowances for system parameter uncertainties, CHF correlation uncertainty, rod bow, the NRC penalties for the TORC code uncertainty, CE-1 CHF correlation "prediction uncertainty", and the 5% interim penalty imposed by the NRC on the CE-1 CHF correlation, as well as a 0.1 penalty for the HID grids."

These sections, along with the additional details in Enclosure 2 of Reference 6, describe the acceptability of the use of CETOP-D and the CE-1 critical heat flux correlation to calculate fuel failure using the TORC/CE-1 probability distribution function. Reference 7 (Safety Evaluation, Sections 4.0 and 7.0) documents the March 1985 NRC approval of References 5 and 6.

The March 1994 and November 2004 NRC approvals for CENTS are documented in References 8 and 9. Reference 10 (Evaluation Section 2.0) reinforces NRC approval for use of CETOP-D and CENTS at SONGS Units 2 and 3.

SCE requests that the AST Safety Evaluation in Reference 2 be revised to remove the restriction on use of updated computer code(s).

If you have any questions regarding this, please contact Ms. Linda T. Conklin at (949) 368-9443.

Sincerely,

A handwritten signature in black ink, appearing to read "A. E. Spencer". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Enclosure

cc: B. S. Mallett, Regional Administrator, NRC Region IV  
N. Kalyanam, NRC Project Manager, San Onofre Units 2 and 3  
C. C. Osterholtz, NRC Senior Resident Inspector, San Onofre Units 2 and 3

## Enclosure

## References

1. Letter from D. E. Nunn (SCE) to Document Control Desk (NRC) dated December 27, 2004, Subject: "San Onofre Nuclear Generating Station, Units 2 and 3, Docket Nos. 50-361 and 50-362, Proposed Change Number (PCN) 555, Alternative Source Term." (ADAMS Accession Number ML043650403)
2. Letter from N. Kalyanam (NRC) to R. M. Rosenblum (SCE) dated December 29, 2006, Subject: "San Onofre Nuclear Generating Station, Units 2 and 3 – Issuance of Amendments Re: Full-Scope Implementation of an Alternative Source Term (TAC Nos. MC5495 and MC5496)." (ADAMS Accession Number ML063400359)
3. Letter from J. E. Venable (Entergy) to Document Control Desk (NRC) dated November 13, 2003, Subject: "License Amendment Request NPF-38-249, Extended Power Uprate, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38." (ADAMS Accession Number ML040260317)
4. Letter from N. Kalyanam (NRC) to J. E. Venable (Entergy) dated April 15, 2005, Subject: "Waterford Steam Electric Station, Unit 3 - Issuance of Amendment Re: Extended Power Uprate, (TAC No. MC1355)." (ADAMS Accession Number ML051030068)
5. Enclosure 1 in Letter from K. P. Baskin (SCE) to Frank Miraglia (NRC) dated January 22, 1982, Subject: "Docket Nos. 50-361 and 50-362, San Onofre Nuclear Generating Station Units 2 and 3." Enclosure 1 is CEN-160(s)-P, Revision 1-P, dated September 1981, "CETOP-D Code Structure and Modeling Methods for San Onofre Nuclear Generating Station Units 2 and 3," (Westinghouse/CE Proprietary information)
6. Enclosure 2 in Letter from M. O. Medford (SCE) to G. W. Knighton (NRC) dated September 28, 1984, Subject: "Docket No. 50-361 and 50-362, Reload Analysis Report, San Onofre Nuclear Generating Station, Units 2 and 3," Enclosure 2 is CEN-283(s)-P, dated June 1984, "Statistical Combination of Uncertainties, Part 1, Combination of System Parameter Uncertainties in Thermal Margin Analyses for SONGS Units 2 and 3," (Westinghouse/CE Proprietary information)
7. Letter from G. W. Knighton (NRC) to K. P. Baskin (SCE) dated March 1, 1985, Subject: "Issuance of Amendment No. 32 to Facility Operating License NPF-10 and Amendment No. 21 to Facility Operating License NPF-15, San Onofre Nuclear Generating Station, Units 2 and 3." (ADAMS Accession Number ML022280336 for cover letter)

8. Letter from M. J. Virgilio (NRC) to S. A. Toelle (ABB Combustion Engineering) dated March 17, 1994, Subject: "Acceptance for Referencing of Licensing Topical Report CE-NPD 282-P, 'Technical Manual for the CENTS Code' (TAC No. M82718)"
9. Letter from H. N. Berkow (NRC) to G. Bischoff (Westinghouse Electric Company) dated November 24, 2004, Subject: "Final Safety Evaluation for Topical Report WCAP-15996-P, 'Technical Description Manual for CENTS Code' (TAC No. MB6982)." (ADAMS Accession Number ML043270382)
10. Letter from S. Dembek (NRC) to H. B. Ray (SCE) dated June 2, 1999, Subject; "San Onofre Nuclear Generating Stations, Units 2 and 3 – Evaluation of Reload Analysis Methodology Technology Transfer (TAC Nos. MA4289 and MA4290)"