SOUTHERN CALIFORNIA
EDISON®
An *EDISON INTERNATIONAL*® Company

Richard J. St. Onge
Director, Nuclear Regulatory Affairs and
Emergency Planning

November 19, 2012 10 CFR 50.46

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

Subject: **Docket Nos. 50-361 and 50-362**
2011 Emergency Core Cooling System Annual 10 CFR 50.46 Report
San Onofre Nuclear Generating Station (SONGS), Units 2 and 3

Reference: Letter from R. J. St. Onge (SCE) to Document Control Desk (NRC), dated November 1, 2011, Subject: Docket Nos. 50-361 and 50-362, 2010 Emergency Core Cooling System Annual 10 CFR 50.46 Report, San Onofre Nuclear Generating Station, Units 2 and 3

Dear Sir or Madam:

This letter transmits as Enclosures 1 and 2 the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 annual report for the 2011 calendar year required by paragraph (a)(3)(ii) of 10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors." This regulation requires SONGS to annually report to the NRC for San Onofre Units 2 and 3 the nature of each change to, or error discovered in, the Emergency Core Cooling System (ECCS) evaluation model, or in the application of this model that affects the temperature calculation and estimated effects of any such changes, errors, or applications on the limiting ECCS analysis. Any significant change or error is required to be reported to the NRC within 30 days.

The previous Emergency Core Cooling System Annual 10 CFR 50.46 Report was submitted to the NRC in the above referenced letter.

Enclosure 1 is a description of changes or errors in the Westinghouse evaluation models used in the SONGS Units 2 and 3 ECCS performance analyses.

Enclosure 2 is a summary of the effect on Peak Clad Temperature (PCT) of the errors or changes in the Westinghouse evaluation models used in the SONGS Units 2 and 3 ECCS performance Analyses. While not limiting with regard to PCT, information for the Small Break Loss of Coolant Accident (SBLOCA) is also included in Enclosure 2 (in accordance with Supplement 1 to Information Notice 97-15).

SONGS made no changes to the Loss of Coolant Accident (LOCA) evaluation models.

A002
NRR

P.O. Box 128
San Clemente, CA 92672

Operating Cycle Information

SONGS Unit 2 and Unit 3 operation for the current reporting period is outlined below.

Reporting Calendar Year 2011

Unit	Cycle 16
2	January 1, 2011 Through December 31, 2011
3	February 18, 2011 * Through December 31, 2011

* Unit 3 was in refueling outage prior to this date in 2011.

2011 REPORTING PERIOD

SONGS Units 2 and 3 Large Break LOCA (LBLOCA) Evaluation Model

The LBLOCA analysis used the 1999 evaluation mode for this reporting period.

The limiting LBLOCA PCT did not exceed the 10 CFR 50.46(b)(1) acceptance criterion of 2,200 °F. This is documented in Enclosure 2 (Table 1).

There are no cumulative (sum of the absolute magnitudes of PCT changes) 1999 Evaluation Model LBLOCA 10 CFR 50.46 model changes and model errors. This is documented in Enclosure 2 (Table 2).

SONGS Units 2 and 3 SBLOCA Evaluation Model

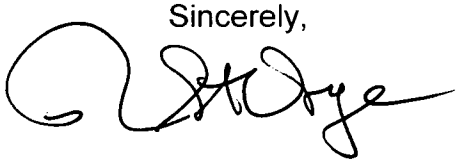
The SBLOCA analysis used the Supplement 2 Model (S2M) SBLOCA evaluation model for this reporting period.

The limiting SBLOCA PCT did not exceed the 10 CFR 50.46(b)(1) acceptance criterion of 2,200 °F, and remained bounded by the LBLOCA PCT. This is documented in Enclosure 2 (Table 3).

There are no cumulative (sum of the absolute magnitudes of PCT changes) S2M Evaluation Model SBLOCA 10 CFR 50.46 model changes and model errors. This is documented in Enclosure 2 (Table 4).

This letter and the Enclosures contain no new commitments. If you have any questions or need additional information on this subject, please contact Manager Plant Licensing, Ms. Linda T. Conklin, at 949-368-9443.

Sincerely,



Enclosures:

1. Description of Changes and Errors in the Westinghouse Evaluation Models Used in the SONGS Units 2 and 3 ECCS Performance Analyses (Calendar Year 2011)

2. Summary of the Effect on PCT of the Errors or Changes in the Westinghouse Evaluation Models Used in the SONGS Unit 2 and 3 ECCS Performance Analyses (Calendar Year 2011)

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
B. J. Benney, NRC Project Manager, San Onofre Units 2 and 3

Enclosure 1

Description of Changes and Errors in the Westinghouse Evaluation Models Used in the SONGS Units 2 and 3 ECCS Performance Analyses

(Calendar Year 2011)

1. 1999 Evaluation Model Version of the Westinghouse Appendix K Large Break Loss of Coolant Accident (LOCA) Evaluation Model for Combustion Engineering PWRs

None.

2. S2M Version of the Westinghouse Appendix K Small Break LOCA Evaluation Model for Combustion Engineering PWRs

None.

Enclosure 2

Summary of the Effect on PCT of the Errors or Changes in the Westinghouse Evaluation Models Used in the SONGS Units 2 and 3 ECCS Performance Analyses

(Calendar Year 2011)

2011 REPORTING PERIOD

LOSS OF COOLANT ACCIDENT (LOCA) MARGIN SUMMARY
SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 AND 3

Large Break LOCA (LBLOCA)

Table 1 provides a time line of the items which could affect the LBLOCA peak cladding temperature (PCT) for this reporting period. The LBLOCA 10 CFR 50.46 PCT limit of 2,200°F was not exceeded.

Table 1
Limiting LBLOCA PCT

	Unit 2	Unit 3
Limiting LBLOCA PCT ***End of 2010***	2,174 °F	2,170 °F
Changes in PCT ***during 2011*** due to:		
a) Model changes or Model errors (1999 Evaluation Model)		
• Cycle 16	0 °F	0 °F
b) Cycle Dependent Input Changes		
• Cycle 16	0 °F	+ 3 °F *
Limiting LBLOCA PCT ***End of 2011***	2,174 °F	2,173 °F

* This is as a result of implementation of 8 Westinghouse Modified Standard Design (MSD) lead fuel assemblies.

The cumulative effect of the 10 CFR 50.46 model changes and model errors for the LBLOCA 1999 Evaluation Model are shown in Table 2.

Table 2

Cumulative LBLOCA 10 CFR 50.46
Model Changes and Model Errors
$\Sigma |\Delta$ PCT$|$ [1]

	Unit 2	Unit 3
Cumulative LBLOCA 10 CFR 50.46 Model Changes and Model Errors ***Prior to 2011***	0 °F	0 °F
Changes in LBLOCA PCT due to Model Changes and Model Errors ***During 2011*** • Cycle 16	0 °F	0 °F
Cumulative LBLOCA 10 CFR 50.46 Model Changes and Model Errors ***End of 2011***	0 °F	0 °F

[1] Sum of the absolute magnitude of the 10 CFR 50.46 model changes and model errors.

Small Break LOCA (SBLOCA)

Table 3 provides a time line of the items which could affect the SBLOCA peak cladding temperature (PCT) for this reporting period. The SBLOCA 10 CFR 50.46 PCT limit of 2200 °F was not exceeded, and the SBLOCA PCT remained bounded by the LBLOCA PCT.

Table 3

Limiting SBLOCA PCT

	Unit 2	**Unit 3**
Limiting SBLOCA PCT ***End of 2010***	2,077 °F	2,077 °F
Changes in PCT ***during 2011*** due to: a) Model changes or Model errors • Cycle 16	0 °F	0 °F
b) Cycle Dependent Input Changes • Cycle 16	0 °F	0 °F
Limiting SBLOCA PCT ***End of 2011***	2,077 °F	2,077 °F

The cumulative 10 CFR 50.46 model changes and model errors for the SBLOCA S2M Evaluation Model are shown in Table 4.

Table 4

Cumulative SBLOCA 10 CFR 50.46
Model Changes and Model Errors
$\Sigma |\Delta PCT|$ [2]

	Unit 2	Unit 3
Cumulative SBLOCA 10 CFR 50.46 Model Changes and Model Errors ***Prior to 2011***	0 °F	0 °F
Changes in SBLOCA PCT due to Model Changes and Model Errors ***During 2011*** • Cycle 16	0 °F	0 °F
Cumulative SBLOCA 10 CFR 50.46 Model Changes and Model Errors ***End of 2011***	0 °F	0 °F

[2] Sum of the absolute magnitude of the 10 CFR 50.46 model changes and model errors.