

December 15, 2010

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

Subject: **Docket Nos. 50-361 and 50-362,  
2009 Emergency Core Cooling System  
Annual 10 CFR 50.46 Report,  
San Onofre Nuclear Generating Station, Units 2 and 3.**

Reference: Letter from R. J. St. Onge (SCE) to Document Control Desk (NRC), dated November 21, 2009, Subject: Docket Nos. 50-361 and 50-362, 2008 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 Units 2 and 3 Annual Report for the 2009 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 Southern California Edison (SCE) 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 above Reference.

Enclosure 1 is a description of changes or errors in the Westinghouse evaluation models (EM) used in the San Onofre Nuclear Generating Station (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 (LOCA) is also included in Enclosure 2 (in accordance with Supplement 1 to Information Notice 97-15).

SCE made no changes to the LOCA evaluation models.

Operating Cycle Information

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

Unit	Year	Cycle 15
2	2009	January 1, 2009 through September 27, 2009 *
3		January 1, 2009 through December 31, 2009

\* Unit 2 was in refueling outage for the remainder of 2009

**2009 REPORTING PERIOD****SONGS Units 2 and 3 Large Break LOCA Evaluation Model (EM)**

The Large Break LOCA (LBLOCA) analysis used the 1999 evaluation model for this reporting period.

The limiting Large Break LOCA PCT did not exceed the 10CFR50.46(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 EM Large Break LOCA 10CFR 50.46 model changes and model errors. This is documented in Enclosure 2 (Table 2).

**SONGS Units 2 and 3 Small Break LOCA Evaluation Model (EM)**

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

The limiting Small Break LOCA PCT did not exceed the 10CFR50.46(b)(1) acceptance criterion of 2,200 °F, and remained bounded by the large break LOCA PCT. This is documented in Enclosure 2 (Table 3).

There are no cumulative (sum of the absolute magnitudes of PCT changes) S2M Evaluation Model Small Break LOCA 10CFR50.46 model changes and model errors. This is documented in Enclosure 2 (Table 4).

If you have any questions or need additional information on this subject, please contact Ms. L. Conklin at 949/368-9443.

Sincerely,

A handwritten signature in black ink, appearing to read "C. St. Orge". The signature is fluid and cursive, with a large initial "C" and a long, sweeping underline.

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 2009)
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 2009)

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

**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 2009)**

(2 pages including this page)

**1. 1999 EM Version of the Westinghouse Appendix K Large Break 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 2009)**

(5 pages including this page)

## 2009 REPORTING PERIOD

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

#### Large Break LOCA

Table 1 provides a time line of the items which could affect the Large Break LOCA (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 Large Break LOCA PCT**

	<b>Unit 2</b>	<b>Unit 3</b>
Limiting Large Break LOCA PCT <b>End of 2008</b>	2,170 °F	2,170 °F
Changes in PCT <b>during 2009</b> due to: a) Model changes or Model errors (1999 EM) • Cycle 15	0 °F	0 °F
b) Cycle Dependent Input Changes • Cycle 15	0 °F	0 °F
Limiting Large Break LOCA PCT <b>End of 2009</b>	2,170 °F	2,170 °F

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

**Table 2**  
**Cumulative Large Break LOCA 10 CFR 50.46**  
**Model Changes and Model Errors**  
 $\Sigma |\Delta \text{PCT}|$  \*

	Unit 2	Unit 3
Cumulative LBLOCA 10 CFR 50.46 Model Changes and Model Errors <b>Prior to 2009</b>	0 °F	0 °F
Changes in LBLOCA PCT due to Model Changes and Model Errors <b>During 2009</b> <ul style="list-style-type: none"> <li>• Cycle 15</li> </ul>	0 °F	0 °F
Cumulative LBLOCA 10 CFR 50.46 Model Changes and Model Errors <b>End of 2009</b>	0 °F	0 °F

\* Sum of the absolute magnitude of the 10 CFR 50.46 model changes and model errors.

**Small Break LOCA**

Table 3 provides a time line of the items which could affect the Small Break LOCA (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 Small Break LOCA PCT**

	<b>Unit 2</b>	<b>Unit 3</b>
Limiting Small Break LOCA PCT <b><i>End of 2008</i></b>	2,077 °F	2,077 °F
Changes in PCT <b><i>during 2009</i></b> due to:		
a) Model changes or Model errors		
• Cycle 15	0 °F	0 °F
b) Cycle Dependent Input Changes		
• Cycle 15	0 °F	0 °F
Limiting Small Break LOCA PCT <b><i>End of 2009</i></b>	2,077 °F	2,077 °F

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

**Table 4**  
**Cumulative Small Break LOCA 10 CFR 50.46**  
**Model Changes and Model Errors**  
 $\Sigma |\Delta \text{PCT}|$  \*

	Unit 2	Unit 3
Cumulative SBLOCA 10 CFR 50.46 Model Changes and Model Errors  <i>Prior to 2009</i>	0 °F	0 °F
Changes in SBLOCA PCT due to Model Changes and Model Errors  <i>During 2009</i>  • Cycle 15	0 °F	0 °F
Cumulative SBLOCA 10 CFR 50.46 Model Changes and Model Errors  <i>End of 2009</i>	0 °F	0 °F

\* Sum of the absolute magnitude of the 10 CFR 50.46 model changes and model errors.