



Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
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**Jeffery A. Hardy**  
Regulatory Assurance Manager

PNP 2015-026

April 9, 2015

10 CFR 50.46

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

Subject: Annual Report of Changes in Emergency Core Cooling System Models  
  
Palisades Nuclear Plant  
Docket 50-255  
License No. DPR-20

Reference: 1. Letter dated March 27, 2015, from L.W.Newman, AREVA, to Mr. Thomas Allen, Entergy Nuclear Operations, Inc, "Annual 10CFR50.46 Reporting for Palisades"  
2. Letter dated May 8, 2014, from Entergy Nuclear Operations, Inc. to U.S. Nuclear Regulatory Commission, "30-Day Report of Changes in Emergency Core Cooling System Models" ML14128A456

Dear Sir or Madam:

Entergy Nuclear Operations, Inc. (ENO) is submitting the annual report of changes in the emergency core cooling system (ECCS) models for the Palisades Nuclear Plant (PNP). The report is submitted in accordance with 10 CFR 50.46(a)(3)(ii).

Reference 1 did not identify any new errors for the PNP small break loss of coolant accident (SBLOCA) analysis. An issue with the AREVA S-RELAP5 routine associated with the vapor absorptivity correlation was identified since the last annual report. This issue impacted the PNP SBLOCA analysis and was reported on May 8, 2014 (Reference 2). This issue did not impact the PNP large break loss of coolant accident (LBLOCA) peak cladding temperature. One additional issue was identified for the PNP LBLOCA analysis, related to non-physical axial shapes generated by modal decomposition procedure. The issue had no impact on peak cladding temperature (PCT).

Attachment 1 contains the large break loss of coolant accident (LBLOCA) PCT summary. Attachment 2 contains the SBLOCA PCT summary. This report covers the period from January 1, 2014, through December 31, 2014.

This letter contains no new commitments and no revisions to existing commitments.

Sincerely,

A handwritten signature in black ink, appearing to read "JAH" followed by a stylized flourish.

JAH/bed

Attachment 1: Large Break Loss of Coolant Accident Peak Cladding Temperature Summary

Attachment 2: Small Break Loss of Coolant Accident Peak Cladding Temperature Summary

CC Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC

**ATTACHMENT 1  
LARGE BREAK LOSS OF COOLANT ACCIDENT  
PEAK CLADDING TEMPERATURE SUMMARY**

	<b>ΔPCT (°F)</b>	<b>PCT (°F)</b>
<b>PCT (Last Acceptable Model Results) New Cycle 21 Analysis</b>		<b>1740</b>
<b>10 CFR 50.46 Changes</b>		
CR 2009-337 S-RELAP5 Radiation to Fluid Correlation Under Predicts the Radiative Heat Transfer	-27	<b>1713</b>
<b>PCT (2009 Annual Report)</b>		<b>1713</b>
<b>10 CFR 50.46 Changes</b>		
CR 2009-2309 S-RELAP5 Kinetics and Heat Conduction Model	-22	<b>1691</b>
<b>PCT (2010 Annual Report)</b>		<b>1691</b>
<b>PCT (2011 Annual Report)</b>		<b>1691</b>
<b>10 CFR 50.46 Changes</b>		
CR 2011-7155 S-RELAP5 Sleicher-Rouse Correlation	+8	
<b>PCT (2012 Annual Report)</b>		<b>1699</b>
<b>PCT (2013 Annual Report)</b>		
<b>10 CFR 50.46 Changes</b>		
CR 2013-4230 S-RELAP5 routine associated with the RODEX3a fuel rod model in the code. Letter, Len Newman (AREVA NP) to Gary Jarka (Entergy Operations, Inc.), "Interim 10CFR50.46 Reporting for Palisades," FAB13-426, dated September 16, 2013.	+6	<b>1705</b>
<b>PCT (2014 Annual Report)</b>		<b>1705</b>
<b>Sum Total of PCT Adjustments</b>	-35	

**ATTACHMENT 2  
SMALL BREAK LOSS OF COOLANT ACCIDENT  
PEAK CLADDING TEMPERATURE SUMMARY**

	$\Delta$ PCT (°F)	PCT (°F)
<b>PCT (Last Acceptable Model Results) New Cycle 21 Analysis</b>		<b>1734</b>
<b>10 CFR 50.46 Changes</b>		
CR 2009-337 S-RELAP5 Radiation to Fluid Correlation Under Predicts the Radiative Heat Transfer	-64	
<b>PCT (2009 Annual Report)</b>		<b>1670</b>
<b>10 CFR 50.46 Changes</b>		
CR 2009-2309 S-RELAP5 Kinetics Model	+4	
<b>PCT (2010 Annual Report)</b>		<b>1674</b>
<b>PCT (2011 Annual Report)</b>		<b>1674</b>
<b>10 CFR 50.46 Changes</b>		
CR 2011-7155 S-RELAP5 Sleicher-Rouse Correlation	-3	<b>1671</b>
<b>PCT (2012 Annual Report)</b>		<b>1671</b>
<b>PCT (2013 Annual Report)</b>		<b>1671</b>
<b>10 CFR 50.46 Changes</b>		
CR-2012-8371 – S-RELAP5 Vapor Absorptivity Correlation	+73	<b>1744</b>
<b>PCT (2014 Annual Report)</b>		<b>1744</b>
<b>Sum Total of PCT Adjustments</b>	<b>+10</b>	