October 23, 2007

Mr. Christopher J. Schwarz
Site Vice President
Entergy Nuclear Operations, Inc.
Palisades Nuclear Plant
27780 Blue Star Memorial Highway
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT
NRC FOLLOWUP INSPECTION 05000255/2007009(DRS)

Dear Mr. Schwarz:

On October 12, 2007, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. The enclosed report documents the inspection finding which was discussed on October 12, 2007, with Mr. L. Lahti, and other members of your staff.

The inspection was conducted in accordance with Inspection Procedure (IP) 71153, “Followup of Events and Notices of Enforcement Discretion,” dated July 26, 2006. The inspection examined activities conducted under your license, as they relate to safety and to compliance with the Commission’s rules and regulations, and with the conditions of your license. The inspector reviewed selected procedures, analyses, and records.

Based on the results of this inspection, one licensee identified finding involved a violation of NRC requirements. The finding was a circuit-related finding that was not associated with a finding of high safety significance and meets the four criteria established by Section A of the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48) for a licensee in NFPA 805 transition. Therefore, we are exercising enforcement discretion to not cite this violation in accordance with the NRC's Enforcement Policy.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide

Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Julio F. Lara, Chief
Engineering Branch 3
Division of Reactor Safety

Docket No. 50-255
License No. DPR-20

Enclosure: Inspection Report 05000255/2007009(DRS)
w/Attachment: Supplemental Information

cc w/encl: M. Kansler, President and Chief Executive Officer/
Chief Nuclear Officer
J. Herron, Senior Vice President
Senior Vice President, Engineering and
Technical Services
M. Balduzzi, Senior Vice President and
Chief Operating Officer, Regional
Operations, NE
O. Limpias, Vice President, Engineering
J. Ventosa, General Manager, Engineering
J. DeRoy, Vice President, Operations Support
Director, NSA
J. McCann, Director, Nuclear Safety & Licensing
E. Harkness, Director of Oversight
General Manager, Plant Operations
C. Faison, Manager, Licensing
L. Lahti, Manager, Licensing
W. Dennis, Assistant General Counsel
W. DiProfio
W. Russell
G. Randolph
Supervisor, Covert Township
Office of the Governor
State Liaison Officer, State of Michigan
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Michigan Dept of Attorney General

Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

Julio F. Lara, Chief
Engineering Branch 3
Division of Reactor Safety

Docket No. 50-255
License No. DPR-20

Enclosure: Inspection Report 05000255/2007009(DRS)
w/Attachment: Supplemental Information

cc w/encl: M. Kansler, President and Chief Executive Officer/
Chief Nuclear Officer
J. Herron, Senior Vice President
Senior Vice President, Engineering and
Technical Services
M. Balduzzi, Senior Vice President and
Chief Operating Officer, Regional
Operations, NE
O. Limpias, Vice President, Engineering
J. Ventosa, General Manager, Engineering
J. DeRoy, Vice President, Operations Support
Director, NSA
J. McCann, Director, Nuclear Safety & Licensing
E. Harkness, Director of Oversight
General Manager, Plant Operations
C. Faison, Manager, Licensing
L. Lahti, Manager, Licensing
W. Dennis, Assistant General Counsel
W. DiProfio
W. Russell
G. Randolph
Supervisor, Covert Township
Office of the Governor
State Liaison Officer, State of Michigan
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Michigan Dept of Attorney General

MENT NAME: C:\FileNet\ML072960299.wpd
☐ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☐ Non-Sensitive
To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII		RIII		RIII		RIII	
NAME	DSchrum: ls		JLara					
DATE	10/22/07		10/23/07					

OFFICIAL RECORD COPY

Letter to Mr. Christopher J. Schwarz from Mr. Julio Lara dated

SUBJECT: PALISADES NUCLEAR PLANT
NRC FOLLOWUP INSPECTION REPORT 05000255/2007009(DRS)

DISTRIBUTION:
MLC
TEB
RidsNrrDirsIrib
MAS
KGO
JKH3
JBG
JAE
CAA1
LSL
CDP1
DRPIII
DRSIII
PLB1
TXN
ROPreports@nrc.gov

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR 20
Report No:	05000255/2007009(DRS)
Licensee:	Entergy Nuclear Operations Inc.
Facility:	Palisades Nuclear Plant
Location:	Covert, MI
Dates:	October 1 - 12, 2007
Inspector:	D. Schrum, Reactor Inspector
Approved by:	Julio F. Lara, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000255/2007009(DRS); 10/01/07 - 10/12/07; Palisades Nuclear Plant; Routine Followup Inspection for LER 2006001.

This report covers a followup inspection for LER 2006001. The inspection was conducted by a Region III inspector. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Initiating Events

No findings of significance were identified.

Cornerstone: Mitigating Systems

No findings of significance were identified.

B. Licensee-Identified Violations

Cornerstone: Mitigating Systems

Other: The licensee identified a condition that was a violation of 10 CFR Part 50, Appendix R, Section III.G.2, involving the licensee's failure to ensure, in the event of a severe fire, that one redundant train of systems necessary to achieve and maintain hot shutdown conditions was free of fire damage. Specifically, the licensee failed to ensure, in the event of a fire in the Centrifugal Charging Pump (CCP) Rooms (Fire Area 13), that cables and circuits of one redundant train were adequately protected by a one-hour fire-rated barrier. This violation was entered into the licensee's corrective action program; (AR1014772), "Potential to Lose PCS Inventory Make up Capability in Fire Area 13," dated February 14, 2006. The licensee initiated compensatory measures and will evaluate the violation during their transition to NFPA 805.

The finding was more than minor because this failure could have affected the mitigating systems cornerstone objective and safe shutdown (SSD). Specifically, the licensee's failure to physically protect the entire length of redundant cables required for SSD, in the event of a fire in the 10 CFR Part 50, Appendix R, Section III.G.2 fire area, left the SSD cables vulnerable to fire damage. Because the violation was a circuit-related finding that was not associated with a finding of high safety significance, the inspector evaluated the violation in accordance with the four criteria established by Section A of the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48) for a licensee in NFPA 805 transition. The inspector determined that for this violation: (1) it was licensee-identified as a result of its

voluntary initiative to adopt the risk-informed, performance-based fire protection program included under 10 CFR 50.48(c); (2) the licensee had established adequate compensatory measures within a reasonable time frame following identification and would correct the violation as a result of completing the NFPA 805 transition; (3) the violation was not likely to have been previously identified by routine licensee efforts; and (4) the violation was not willful.

As a result, the inspector concluded that the violation met all four criteria established by Section A, and that the NRC is exercising enforcement discretion to not cite this violation in accordance with the NRC's Enforcement Policy. (Section 4OA3.1)

REPORT DETAILS

1. **REACTOR SAFETY**

Cornerstone: Mitigating Systems

4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report 2006-001, Potential Loss of Primary Coolant Makeup Function for Postulated Fire Scenario

On February 14, 2006, during review of a 10 CFR Part 50, Appendix R analysis, the licensee identified a condition that could challenge the ability to maintain the primary (reactor) coolant makeup function, as required by Appendix R, Paragraph III.G, "Fire Protection of Safe Shutdown Capability." In the analysis, the specific fire scenario is assumed to render all charging pumps unavailable for maintaining the primary coolant makeup function. To compensate for the loss of all charging pumps, the analysis credited high pressure safety injection pump (HPSI) P-66B for supplying makeup. However, the further review revealed that the fire scenario could also result in damage to the control circuit for the High Pressure Safety Injection (HPSI) pump's credited suction valve, CV-3031, resulting in a spurious closure of the valve. The spurious closure of the HPSI pump's suction valve with the HPSI pump in operation would likely render the HPSI pump inoperable, causing a loss of the ability to maintain the primary coolant makeup function. The licensee reported this condition in LER 2006-001, “Potential Loss of Primary Coolant Makeup Function for Postulated Fire Scenario.”

The identified condition was a violation of 10 CFR Part 50, Appendix R, Section III.G.2, involving the licensee’s failure to ensure, in the event of a severe fire, that one redundant train of systems necessary to achieve and maintain Hot Shutdown (HSD) conditions was free of fire damage. Specifically, the licensee failed to ensure, in the event of a fire in either one of the charging pumps (Fire Area 13), that cables and circuits of one redundant train of systems (e.g., CCP) necessary to achieve and maintain HSD conditions were protected entirely in 1-hour fire-rated barriers.

On February 14, 2006, the licensee entered this finding into the Palisades’s corrective action program, A/R 0104772, “Potential to Lose PCS Inventory Make up Capability in Fire Area 13.” The licensee established hourly fire watches in Fire Area 13 after identifying this problem and was in the process of revising the Safe Shutdown Analysis (SSA) and Operation procedures (i.e., adding mitigating actions and providing additional guidance). The licensee will evaluate this during Palisades transition to National Fire Protection Association (NFPA) 805, “Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition.”

Compensatory actions were established for this fire scenario to preserve the HPSI pump for primary coolant makeup capability. In the event of a spurious start of the HPSI pump, guidance directs operators to stop the HPSI pump. Guidance also directs isolation of control circuit power to CV-3031 to disable it in the open position, precluding HPSI pump damage caused by pump operation without a suction flow path. Once the

suction valve is assured open, the HPSI pump may be operated as necessary to maintain the primary coolant makeup function.

The NRC resident inspector reviewed these actions on February 15, 2006, and they were determined to be feasible and reliable. (Reference IR 255/2006013(DRP))

Analysis: The inspector determined that failure to ensure that cables and circuits of one redundant train of systems necessary to achieve and maintain HSD conditions were entirely protected was a performance deficiency warranting a significance evaluation. The inspector concluded that the finding was more than minor in accordance with IMC0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on September 30, 2005. The finding involved the attribute of protection against external factors (i.e., fire) and could have affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee's failure to ensure in the event of a fire in the charging pump fire area that HPCI system used as a redundant train was free of fire damage, did not provide the adequate level of safety required per 10 CFR Part 50, Appendix R to ensure SSD capability.

The safety significance of the event is considered to be minimal. The licensee's analysis has demonstrated that sufficient primary coolant inventory would be maintained to keep the core covered and prevent core damage for greater than 24 hours without makeup capability. A 24-hour period is considered sufficient time to complete proceduralized emergency repairs to a charging pump and to restore the primary coolant makeup function.

Since, the finding was a circuit-related finding and the licensee was in transition to NFPA 805, the licensee completed a quantitative risk-assessment evaluation for this issue using the methodology contained in IMC0609 Appendix F. The licensee's evaluation concluded that the finding was not associated with a finding of high safety significance. The licensee completed a "less than red" risk-assessment, LTR-PSA-07-04, "Evaluation of Multiple Spurious Operations That Could Result in Failure of P-668, June 19, 2007, of the Appendix R issue described in LER 2006-001. The total core CDF was estimated at 5.5E-6, below the 1.0E-4 "red" threshold. The inspector reviewed the evaluation and concluded it was an acceptable evaluation.

Enforcement: Title 10 CFR Part 50, Section 48, "Fire Protection," (FP) and 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," established specific FP features required to satisfy 10 CFR Part 50, Appendix A, General Design Criterion 3, "Fire Protection." Title 10 CFR Part 50, Appendix R applies to licensed nuclear power electric generating stations that were operating prior to January 1, 1979, which included Palisades. Section III.G.2 of Appendix R to 10 CFR Part 50 required, in part, that where cables or the equipment of a redundant train of systems necessary to achieve and maintain HSD conditions are located within the same fire area outside of primary containment, one of the three specified means of ensuring that one of the redundant trains was free of fire damage shall be provided. For Fire Area 13, the licensee implemented Section III.G.2.c of Appendix R to 10 CFR Part 50, which specified, in part, enclosure of cable and

equipment and associated non-safety circuits of one redundant train in a fire-rated barrier having a one-hour rating.

Contrary to the above, prior to February 14, 2006, in the event of a fire in either the charging pump rooms, the licensee failed to ensure that one redundant train of systems would remain free of fire damage. Specifically, the licensee failed to protect the cables and/or circuits associated with the charging system in Fire Area 13 was not protected by a one-hour fire-rated wrap. In addition, to compensate for the loss of all charging pumps, the analysis credited high pressure safety injection pump (HPSI) P-66B for supplying makeup. However, the review determined that the fire scenario could also result in damage to the control circuit for the HPSI pump's credited suction valve, CV-3031, resulting in a spurious closure of the valve. The spurious closure of the HPSI pump's suction valve with the HPSI pump in operation would likely render the HPSI pump inoperable, causing a loss of the ability to maintain the primary coolant makeup function. Once identified, the licensee entered the finding into the Palisades' corrective action system as AR01014772, "Potential to Lose PCS Inventory Makeup Capability"; dated February 14, 2006.

Because the violation was a circuit-related finding that was not associated with a finding of high safety significance, the inspector evaluated the violation in accordance with the four criteria established by Section A of the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48) for a licensee in NFPA 805 transition. The inspector determined that for this violation: (1) it was licensee-identified as a result of its voluntary initiative to adopt the risk informed, performance-based fire protection program included under 10 CFR 50.48(c); (2) the licensee had established adequate compensatory measures within a reasonable time frame following identification and would correct the violation as a result of completing the NFPA 805 transition; (3) the violation was not likely to have been previously identified by routine licensee efforts; and (4) the violation was not willful.

As a result, the inspector concluded that the violation met all four criteria established by Section A and the NRC was exercising enforcement discretion to not cite this violation in accordance with the NRC's Enforcement Policy (Other 05000255/2007009-01(DRS)).

Final resolution of this condition is expected to be addressed with the planned transition to National Fire Protection Association (NFPA) 805, "Performance–Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition."

4OA6 Meeting(s)

.1 Exit Meeting

The inspector presented the inspection results to Mr. L. Lahti and other members of the licensee staff on October 12, 2007. Licensee personnel acknowledge the results of this inspection. No proprietary information was examined during this inspection.

4OA7 Licensee-Identified Violation

The following violation was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section A of the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR Part 50.48) for a licensee in NFPA 805 transition.

- 10 CFR Part 50, Appendix R, Section III.G.2, requires that, in the event of a severe fire, one redundant train of systems necessary to achieve and maintain hot shutdown conditions remain free of fire damage. Contrary to this, as of February 14, 2006, the licensee failed to ensure, in the event of a fire in the CCP rooms, that cables and circuits of one redundant train were adequately protected by a one-hour fire-rated barrier. This violation was entered into the licensee's corrective action program as AR1014772. Since the finding was a circuit-related finding and the licensee was in transition to NFPA 805, the licensee completed a quantitative risk-assessment evaluation for this issue. The evaluation documented that this non-compliance was not associated with a finding of high safety significance. This violation and the basis for exercising enforcement discretion is discussed in Section 4OA3.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
L. Lahti, Licensing Manager

NRC
D. Passehl, RIII Senior Reactor Analyst
J. Lara, RIII Engineering Branch 3 Chief

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

05000255/2006-001	LER	Potential Loss of Primary Coolant Makeup Function For Postulated Fire Scenario. (Section 4OA3.1)

Discussed

None

LIST OF DOCUMENTS REVIEWED

4OA3 Event Followup

Triennial Fire Protection

A/R 01014772; Potential to Lose PCS Inventory Make up Capability in Fire Area 13; dated February 14, 2006

LTR-PSA-07-04; Evaluation of Multiple Spurious Operations That Could Result in Failure of P - 66B; dated June 19, 2007

LIST OF ACRONYMS USED

CAP	Corrective Action Program
CCP	Centrifugal Charging Pump
CFR	Code of Federal Regulations
CSD	Cold Shutdown
DRS	Division of Reactor Safety
FP	Fire Protection
HPSI	High Pressure Safety Injection
HSD	Hot Shutdown
LER	Licensee Event Report
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
SSA	Safe Shutdown Analysis
SSC	Structures, Systems, and Components
SSD	Safe Shutdown
USAR	Updated Final Safety Analysis Report