May 19, 2008

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

SUBJECT: PALISADES NUCLEAR PLANT
NRC FOLLOWUP INSPECTION 05000255/2008008(DRS)

Dear Mr. Schwarz:

On April 28, 2008, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Palisades Nuclear Plant. This report documents the actions taken to review an unresolved item from the 2006 component design bases inspection (CDBI) at your Palisades Nuclear Plant (URI 05000255/2006009-12). The results were discussed on April 28, 2008, with Ms. L. Lahti and other members of your staff.

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 analyses and records.

Based on the results of this inspection, the NRC identified a concern with respect to the fast transfer scheme from the safeguards transformer to the startup transformer. In a previous correspondence, you notified the NRC of a change of commitment for modifying the transfer scheme, and that change was not challenged by the agency. After further review, the NRC has determined that a modification is necessary to bring a facility into compliance with the rules or orders of the Commission. Specifically, the fast transfer scheme from the safeguards transformer to the startup transformer must be modified to comply with its description in your final safety analysis report (FSAR) Section 8.6.2. The staff assessed this issue as it relates to a backfit and determined that the provisions of 10 CFR 50.109 (a)(4), were applicable, in that, a modification is necessary to bring a facility into compliance with the rules or orders of the Commission.

The NRC has also determined this issue is not a violation of NRC requirements due to the apparent change in NRC position promulgated by our earlier inaction on your previous correspondence. The circumstances surrounding this issue are described in detail in the subject inspection report.

You are requested to respond to this letter with a description of your intended actions to address the noncompliance including a proposed schedule to complete those actions.

You have 30 calendar days from the date of this letter to appeal the staff's determination. Such appeals will be considered to have merit only if they meet the criteria given in the NRC Inspection Manual Chapter 0609, Attachment 2.

You are requested to provide a response within 30 days of the date of this inspection report, with your proposed actions or the basis for your appeal, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Palisades Nuclear Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,

/RA/

Ann Marie Stone, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure: Inspection Report 05000255/2008008
w/Attachment: Supplemental Information

cc w/encl: Senior Vice President
Vice President Oversight
Senior Manager, Nuclear Safety & Licensing
Senior Vice President and COO
Assistant General Counsel
Manager, Licensing
W. DiProfio
W. Russell
G. Randolph
Supervisor, Covert Township
Office of the Governor
T. Strong, Chief, State Liaison Officer, State of Michigan
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Michigan Office of the Attorney General

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Sincerely,

Ann Marie Stone Chief
Engineering Branch 2
Division of Reactor Safety

Docket No. 50-255; 72-007
License No. DPR-20

Enclosure: Inspection Report 05000255/2008008
w/Attachment: Supplemental Information

cc w/encl: Senior Vice President
Vice President Oversight
Senior Manager, Nuclear Safety & Licensing
Senior Vice President and COO
Assistant General Counsel
Manager, Licensing
W. DiProfio
W. Russell
G. Randolph
Supervisor, Covert Township
Office of the Governor
T. Strong, Chief, State Liaison Officer, State of Michigan
Michigan Department of Environmental Quality -
Waste and Hazardous Materials Division
Michigan Office of the Attorney General

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OFFICE	RIII		NRR		RIII		RIII			
NAME	SSheldon		GWilson		JHeck		AMStone			
DATE	05/15/08		05/15/08		05/14/08		05/19/08			

OFFICIAL RECORD COPY

Letter to Mr. Christopher Schwarz from Ms. Ann Marie Stone dated May 19, 2008.

S SUBJECT: PALISADES NUCLEAR PLANT
NRC FOLLOWUP INSPECTION 05000255/2008008(DRS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-255
License No:	DPR-20
Report No:	05000255/2008008
Licensee:	Entergy Nuclear Operations, Inc.
Facility:	Palisades Nuclear Plant
Location:	Covert, MI
Dates:	February 1, 2008 – April 28, 2008
Inspectors:	Stuart Sheldon, Senior Reactor Engineer
Approved by:	Ann Marie Stone, Chief Engineering Branch 2 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000255/2008008; 2/1/08 – 4/28/08; Palisades Nuclear Plant; Routine Followup of Unresolved Items.

This report covers a followup inspection for URI 05000255/2006009-12. The inspection was conducted by a Region III inspector.

A. NRC-Identified and Self-Revealing Findings

No violations of significance were identified.

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Other Activities

.1 (Closed) URI 05000255/2006009-12; Potential Common Mode Failure Mechanism Due to Out of Phase Transfer

Background: A Region III inspection team completed a component design bases inspection (CDBI) at Palisades on December 15, 2006. The CDBI team determined that if the safety-related 2400 V buses were carrying full accident loads and if a fast transfer occurs from the normal offsite power source (the safeguards transformer) to the second qualified source (the startup transformer), the safety-related buses could experience greater than 1.33 per unit volts/hertz (p.u. V/Hz) ratio which can cause damage to motors, motor couplings, and/or shafts. However, the licensee stated that this issue had been previously evaluated and determined to be outside the plant's design and licensing basis. The CDBI team questioned this conclusion and left the issue as an unresolved item (URI 05000255/2006009-12).

The CDBI inspection team determined that Palisades was originally designed to supply power to the safety-related buses via the station power transformer. The design included a fast transfer to the startup transformer upon a plant trip. This fast transfer, described in the final safety analysis report (FSAR), Section 8.6.2, is designed to occur within 10 cycles with a bus dead time of approximately one-and-one half cycles when the safety buses are fed via the station power transformer. In 1987, the plant experienced a loss-of-offsite power, due to loss of the startup transformer. This, along with issuance of the Station Blackout Rule (10 CFR 50.63), prompted the licensee to add a new transformer (the safeguards transformer). The design for this transformer included a fast transfer scheme; however, the number of cycles and maximum dead bus time specified in the FSAR for the station power transformer were not applied. No calculations were done as part of the modification to evaluate the fast transfer scheme from the new safeguards transformer. No post-modification testing was done following installation of the safeguards transformer to verify that the fast transfer would operate as expected. Following implementation of the modification, the licensee normally operated the plant with the safety-related buses being powered from the safeguards bus.

In 1993, the licensee experienced a loss of the safeguards transformer with a subsequent fast transfer to the startup transformer. During evaluation of that fast transfer, the licensee identified that, if the safety-related 2400 V buses had been carrying their accident loads, then damage to the safety-related components might occur, based on a 1.33 p.u. V/Hz ratio being exceeded. Additionally, the licensee determined that one of the safety-related 2400 V buses could have tripped on overcurrent, while the other tripped on sustained undervoltage. The licensee concluded the scenario was acceptable, as the diesels would start, and reclose the breakers to the safety-related buses. Modifications to the plant were planned but later determined unnecessary (see Regulatory Interactions section discussed below). In 1994 and 1996, the plant again experienced fast transfers from the safeguards to the startup transformer.

Regulatory Interactions: As part of the modification which installed the safeguards transformer, the licensee performed an evaluation under 10 CFR 50.59. The focus of the evaluation was on the benefits of installing a new transformer to improve the offsite power capability and to comply with GDC-17. The effects on the fast transfer scheme were not evaluated by the licensee.

Following the 1993 event (loss of safeguards transformer) and subsequent discovery that the fast transfer scheme might result in loss of both safety-related 2400 V buses, the licensee submitted a letter dated January 7, 1994, to the NRC which documented the actual dead bus time as being 7.5 cycles and described the expected consequences, including unacceptable motor shaft torques of 1.71 p.u. V/Hz on safety-related Bus 1C and 1.64 p.u. V/Hz on safety-related Bus 1D, tripping of individual motors on overcurrent or undervoltage and subsequent tripping of Bus 1C on overcurrent and Bus 1D on undervoltage. However, the licensee concluded that operability would not be affected, because the second level undervoltage protection schemes would initiate load shed and sequencing of loads onto the emergency diesel generators, including those loads which tripped off previously. The licensee's analysis did not address the consequences of the higher than acceptable motor shaft torque values. In correspondence dated January 7, 1994, Consumers Power Company made the following commitment:

- A modification is being considered to reduce the dead bus time during a fast transfer. The modification, if implemented, is targeted for completion in the 1996 refueling outage.

In its letter dated February 28, 1996, however, the licensee provided five reasons for concluding that the modification was not warranted including: (1) no critical safety concern was identified and that all safety-related systems would operate as designed; (2) that fast transfers only rarely occurred at Palisades; (3) that Palisades had only experienced minimal equipment problems during the two fast transfers which had occurred (As referenced by the licensee's letter, a total of three fast transfers have occurred to date.); (4) that the impact on safety was insignificant; and (5) that the decrease in dead bus time would be minimal.

No NRC response to this letter could be identified, so the inspectors concluded that the NRC did not respond.

During the 2006 CDBI, the inspection team raised the question of the acceptability of the fast transfer scheme, given the site's operating experience and the possible consequences. The team also noted that the assumption of a dead bus time of 7.5 cycles was non-conservative, and based on the relay manufacturer's information, the dead bus time might be as long as 11 cycles. Finally, the inspectors noted that the loadings used in the study might not reflect 2006 operation. These concerns were documented as URI 05000255/2006009-12 on February 13, 2007.

On June 18, 2007, NRC Region III, Division of Reactor Safety initiated Task Interface Agreement (TIA) 2007-002 (ML070950159), requesting assistance from the Office of Nuclear Reactor Regulation (NRR) in evaluating the design and licensing basis, and the licensee's analysis regarding the fast transfer scheme at Palisades.

On December 12, 2007, NRR issued its Final Response to TIA 2007-02 (ML073440280). That response stated, in part:

- "… the independent failure and fast transfer scheme of the safeguards transformer are within the design basis."

- "The present fast transfer scheme at Palisades can result in a situation in which multiple essential motors can be subjected to excessive current transients and shaft torques which can damage the essential equipment in both trains due to the common cause failure."

- "Requisite modification to the fast transfer scheme is considered absolutely necessary to avoid potential safety concerns, such as damage to essential equipment."

On March 4, 2008, the inspector and members of the electrical branch in NRR discussed the conclusions and the need to be in compliance with the licensee staff. To compensate for the nonconforming condition, the licensee had bypassed the fast transfer scheme until an appropriate modification can be implemented.

Enforcement: The current NRC staff position regarding the adequacy of the licensee's fast transfer scheme appears to be different than a previous position due to the NRC's inaction on the licensee's correspondence of February 28, 1996. Therefore, the provisions of 10 CFR 50.109 apply. That section defines backfitting as "the modification of or addition to systems, structures, components, or design of a facility, any of which may result from a new or amended provision in the Commission rules or the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position." After consultation with NRR and the Office of General Counsel, the inspectors determined that no backfit analysis is required under 10 CFR 50.109(a)(2) because the provisions of 10 CFR 50.109 (a)(4), were applicable, in that, a modification is necessary to bring a facility into compliance with the rules or orders of the Commission.

This URI does not result in a violation because the NRC's inaction on the licensee's correspondence of February 28, 1996, was interpreted to be approval of the design basis noncompliance.

Based on this review, this unresolved item is closed.

4OA6 Management Meetings

.1 Exit Meeting Summary

On April 28, 2008, the inspectors presented the inspection results to Ms. L. Lahti and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

L. Lahti, Licensing Manager
G. Brock, Design Engineering
J. Erickson, Licensing
W. Scott, Design Engineering Supervisor

Nuclear Regulatory Commission

J. Ellegood, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Discussed

None

Closed

05000255/2006009-12	URI	Potential Common Mode Failure Mechanism Due to Out of Phase Transfer

ATTACHMENTS: SUPPLEMENTAL INFORMATION

LIST OF ACRONYMS USED

CDBI	Component Design Bases Inspection
CFR	Code of Federal Regulations
FSAR	Final Safety Analysis Report
NRC	U.S. Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
p.u.	Per Unit
SLC	Standby Liquid Control
TIA	Task Interface Agreement
URI	Unresolved Item
V/Hz	Volts to Hertz Ratio