



Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530  
Tel 269 764 2000

PNP 2015-062

Anthony J. Vitale  
Site Vice President

August 28, 2015

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
11555 Rockville Pike  
Rockville, MD 20852

SUBJECT: Palisades Nuclear Plant Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)

Palisades Nuclear Plant  
Docket No. 50-255  
License No. DPR-20

- REFERENCES:
1. NRC Order Number EA-12-051, *Order To Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation*, dated March 12, 2012 (ADAMS Accession No. ML12054A682)
  2. NRC Interim Staff Guidance JLD-ISG-2012-03, *Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation*, Revision 0, dated August 29, 2012 (ADAMS Accession No. ML12221A339)
  3. NEI 12-02, *Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,"* Revision 1, dated August 2012 (ADAMS Accession No. ML12240A307)
  4. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2012-092, *Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated October 25, 2012 (ADAMS Accession No. ML12300A067)
  5. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2013-009, *Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying License With Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated February 28, 2013 (ADAMS Accession No. ML13060A360)
  6. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2013-065, *Palisades Nuclear Plant First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated August 28, 2013 (ADAMS Accession No. ML13241A235)

7. NRC Interim Staff Evaluation, Palisades-Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC No. MF0769), dated November 26, 2013 (ADAMS Accession No. ML13312A423)
8. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2014-010, *Palisades Nuclear Plant Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated February 28, 2014 (ADAMS Accession No. ML14059A078)
9. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2014-084, *Palisades Nuclear Plant Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated August 28, 2014 (ADAMS Accession No. ML14240A278)
10. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2015-005, *Palisades Nuclear Plant Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated February 27, 2015 (ADAMS Accession No. ML15062A056)

Dear Sir or Madam:

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued an order (Reference 1) to Entergy Nuclear Operations, Inc. (ENO). This order was immediately effective and directed ENO to install reliable spent fuel pool level instrumentation at the Palisades Nuclear Plant (PNP).

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. Reference 2 endorses industry guidance document NEI 12-02, Revision 1 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided the PNP initial status report regarding mitigation strategies. Reference 5 provided the PNP overall integrated plan. Reference 6 provided the first six-month status report. Reference 7 contains a request for additional information regarding the overall integrated plan for implementation of Order EA-12-051. References 8, 9, and 10 provide the second, third, and fourth six-month status reports, respectively.

The purpose of this letter is to provide the fifth six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The attached report provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any.

This letter also provides information in response to the request for additional information in Reference 7.

This letter contains no new commitments and no revised commitments.

I declare under penalty of perjury that the foregoing is true and correct; executed on August 28, 2015.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew J. Venter". The signature is written in a cursive style with a large initial "A".

AJV/jse

Attachment: Palisades Nuclear Plant Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)

cc: Office Director, NRR, USNRC  
Administrator, Region III, USNRC  
Project Manager, Palisades, USNRC  
Resident Inspector, Palisades, USNRC

## Attachment

### Palisades Nuclear Plant Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)

#### 1 Introduction

Entergy Nuclear Operations, Inc. (ENO) developed for Palisades Nuclear Plant (PNP) an overall integrated plan (Reference 1 in Section 8), documenting the requirements to install reliable spent fuel pool level instrumentation (SFPI), in response to Reference 2 in Section 8. This attachment provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

#### 2 Milestone Accomplishments

The following milestone(s) have been completed since January 31, 2015 and are current as of July 31, 2015.

- Fourth Six-Month Status Report – February 2015
- Fifth Six-Month Status Report – Complete with submission of this document in August 2015.
- Response to NRC Interim Staff Evaluation (ISE) Request for Additional Information (received November 26, 2013) – February 2015.

#### 3 Milestone Schedule Status

The following provides a line item update to the milestone schedule to support the Overall Integrated Plan. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

Milestone	Target Completion Date <sup>†</sup>	Activity Status	Revised Target Completion Date
Reliable SFPI Installed	Fall 2015 Refueling Outage	In Progress	N/A
Response to NRC Request for Additional Information (received July 18, 2013) (Reference 3)	August 19, 2013	Submitted August 19, 2013	N/A

Response to NRC ISE Request for Additional Information (received November 26, 2013)	March 31, 2015	Submitted February 27, 2015	N/A
---	----------------	-----------------------------	-----

<sup>†</sup>Target Completion Date is the last submitted date from either the overall integrated plan or previous six-month update.

#### 4 Changes to Compliance Method

There are no additional changes to the compliance method.

#### 5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

ENO expects to comply with the order implementation date and no relief/relaxation is required at this time.

#### 6 Open Items from Overall Integrated Plan and Interim Staff Evaluation

ENO has received an Interim Staff Evaluation for PNP that includes 18 Requests for Additional Information (RAIs). There were 3 additional RAIs received prior to the June 2015 Audit Visit (Reference 0), for a total of 21 RAIs. The following table provides the status of these RAIs.

RAI #	Response Status
1	This item was closed during the June 2015 NRC Audit Visit.
2	This item was closed during the June 2015 NRC Audit Visit.
3	This item was closed during the June 2015 NRC Audit Visit.
4	This item was closed during the June 2015 NRC Audit Visit.
5	This item was closed during the June 2015 NRC Audit Visit.
6	This item was closed during the June 2015 NRC Audit Visit.
7	This item was closed during the June 2015 NRC Audit Visit.
8	This item was closed during the June 2015 NRC Audit Visit.
9	This item was closed during the June 2015 NRC Audit Visit.
10	This item was closed during the June 2015 NRC Audit Visit.
11	This item was closed during the June 2015 NRC Audit Visit.
12	This item was closed during the June 2015 NRC Audit Visit.

13	This item was closed during the June 2015 NRC Audit Visit.
14	This item was closed during the June 2015 NRC Audit Visit.
15	This item was closed during the June 2015 NRC Audit Visit.
16	This item was closed during the June 2015 NRC Audit Visit.
17	This item was closed during the June 2015 NRC Audit Visit.
18	This item was closed during the June 2015 NRC Audit Visit.
19 (New)	This item was closed during the June 2015 NRC Audit Visit.
20 (New)	This item was closed during the June 2015 NRC Audit Visit.
21 (New)	See Section 9

## 7 Potential Interim Staff Evaluation Impacts

There are no potential impacts to the ISE identified at this time.

## 8 References

The following references support the updates to the overall integrated plan described in this attachment.

1. Entergy Nuclear Operations, Inc. letter to NRC, PNP 2013-009, *Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying License With Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)*, dated February 28, 2013 (ADAMS Accession No. ML13060A360)
2. NRC Order Number EA-12-051, *Order To Modify Licenses With Regard To Reliable Spent Fuel Pool Instrumentation*, dated March 12, 2012 (ADAMS Accession No. ML12054A682)
3. NRC email to Entergy Nuclear Operations, Inc., *Palisades Nuclear Plant – Requests for Additional Information Regarding Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation (TAC MF0769)*, dated July 18, 2013 (ADAMS Accession No. ML13200A328)
4. NRC letter to Entergy Nuclear Operations, Inc., *Palisades – Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC NO. MF0769)*, dated November 26, 2013 (ADAMS Accession No. ML13312A423)
5. *Summary of the November 26, 2013, Public Meeting to Discuss Industry Responses to Staff Interim Evaluations for Spent Fuel Pool Instrumentation*, dated December 26, 2013 (ADAMS Accession No. ML13347B030).
6. NRC letter to Entergy Nuclear Operations, Inc., *Palisades Nuclear Plant - Plan for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel*



## **9 Responses to Open Requests for Additional Information**

### **RAI #21**

*Please describe the impact of recent MOHR's SFPI equipment failures (failure of the filter coil (or choke) in particular) on the Palisades' SFP level instrument. Also, any actions/measures Waterford [sic] plans to implement to address this equipment failure.*

Note: RAI #21 was issued prior to the NRC June 2015 Audit Visit (Reference 0) and is still open. This is a generic issue for all plants with MOHR instrumentation. The NRC has requested additional information from MOHR concerning qualification of the proposed circuitry changes. A response was provided during the audit and has been updated below to reflect the current status.

### **ENO Response:**

The vendor MOHR determined that the source of the failures is a miniature surface mount common-mode choke component used on the Video and Digicomp printed circuit boards within the EFP-IL Signal Processor. Per MOHR's recommendation, the two boards have been replaced in both EFP-IL Signal Processors at Palisades. Corrective actions were performed under condition report CR-HQN-2015-0345 to replace each of the two circuit boards within the two EFP-IL Signal Processors at the site. They are Corrective Action 10 for LI-2141 (Spent Fuel Pool Level Indication) and Corrective Action 11 for LI-2142 (Spent Fuel Pool Level Indication). The new boards have equivalent substitute components that are less susceptible to transient electrical events. The substitute components have equivalent size, mass, and solder attachment technique as the original component such that there is no impact to the system mechanical characteristics. The components demonstrate equivalent electrical performance such that EMC characteristics are not significantly changed.

MOHR has provided Palisades with a copy of their Root Cause Analysis Report, Revision 1, dated 6/1/2015.

In the event one or both channels become non-functioning at any point in the future, compensatory actions will be applied under the plant's Operating Requirements Manual.