



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION III**

2443 Warrenville Road, Ste 210  
Lisle, IL 60532-4362

January 8, 2013

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

**SUBJECT: BIG ROCK POINT INDEPENDENT SPENT FUEL STORAGE INSTALLATION –  
INSPECTION REPORTS 07200043/12001(DNMS) AND 05000155/12001(DNMS)**

Dear Mr. Vitale:

On December 18, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed a routine inspection at the Big Rock Point Independent Spent Fuel Storage Installation (ISFSI). The purpose of the inspection was to evaluate whether the facility was operating in accordance with NRC approved License Conditions and Technical Specifications, and to evaluate the biennial exercise of the Emergency Plan. At the conclusion of the on-site inspection on October 11, 2012, the inspector discussed the interim inspection results with members of your staff. At the conclusion of the in-office review on December 18, 2012, a final telephone exit meeting was conducted to discuss the final results with members of your staff.

The inspection consisted of review and evaluation of radiation protection, surveillance and maintenance, environmental protection, quality assurance, and the observation and evaluation of the ISFSI Emergency Preparedness exercise. Areas examined during the inspection consisted of observations of activities in progress, interviews with personnel, and a select review of procedures and representative records.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. This violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to: (1) the Regional Administrator, Region III; and (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>.

A. Vitale

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We will gladly discuss any questions you may have regarding this inspection. If you have questions, please contact Mr. Jeremy Tapp of my staff at 630-829-9862.

Sincerely,

*/RA/*

Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Docket Nos. 072-00043; 050-00155  
License No. DPR-6

Enclosures:  
Inspection Report Nos. 07200043/12001(DNMS);  
05000155/12001(DNMS)

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION III**

Docket Nos.: 072-00043; 050-00155

License No.: DPR-6

Report Nos.: 07200043/12001(DNMS)  
05000155/12001(DNMS)

Licensee: Entergy Nuclear Operations, Inc.

Facility: Big Rock Point Independent Spent  
Fuel Storage Installation

Location: 10269 U.S. 31 North  
Charlevoix, MI 49720

Dates: Onsite: October 10 - 11, 2012  
In-Office Review through December 18, 2012

Inspector: Jeremy Tapp, Health Physicist

Approved by: Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

### Entergy Nuclear Operations, Inc. Big Rock Point Independent Spent Fuel Storage Installation NRC Inspection Reports 07200043/12001(DNMS) and 05000155/12001(DNMS)

The inspection consisted of observations and an evaluation of the licensee's programs including, surveillance and maintenance, environmental monitoring, quality assurance, and observation and evaluation of the Independent Spent Fuel Storage Installation (ISFSI) emergency preparedness (EP) exercise.

#### **Emergency Preparedness**

- The licensee adequately demonstrated the effectiveness of its ISFSI Emergency Plan and its ability to implement the plan in response to an emergency (Section 1.1).

#### **Surveillance and Maintenance**

- The licensee implemented its surveillance and maintenance program in accordance with applicable regulations, the License, and Technical Specifications (TS). The U.S. Nuclear Regulatory Commission (NRC) is continuing to review the licensee's evaluation of the conditions noted from the interior of the storage cask from the five-year cask inspection (Section 1.2).

#### **Environmental Monitoring**

- The licensee established and maintained its environmental monitoring program in accordance with applicable Title 10 Code of Federal Regulations (CFR) Part 20, 50 and 72 regulations, the License, and TS (Section 1.3).

#### **Quality Assurance**

- The licensee performed changes to its EP program in accordance with site procedures and applicable regulations. The licensee also performed audits of its Radiation Protection program that were of adequate scope and in accordance with the applicable regulations. The licensee implemented its corrective action program in accordance with the applicable regulations and site Quality Assurance (QA) requirements with one exception. The licensee failed to update the License Termination Plan (LTP) in accordance with license requirements, which was not identified by the licensee through their corrective action process. The licensee has implemented prompt corrective actions to restore compliance and prevent recurrence (Section 1.4).

## Report Details

### **1.0 Away from Reactor Independent Spent Fuel Storage Installation (ISFSI) (IP 60858)**

#### **1.1 Emergency Preparedness**

##### a. Inspection Scope

The inspector observed and evaluated the conduct of the ISFSI biennial radiological emergency preparedness (EP) exercise. The inspector reviewed the Big Rock Point ISFSI Emergency Plan and implementing procedures, and the applicable documents which contained the exercise scenario and the sequence of actions needed to mitigate consequences of the event. The inspector reviewed the proposed exercise scenario to understand its scope and evaluate its adequacy to ensure the licensee could demonstrate its emergency response capabilities. The inspector observed the pre-exercise briefing, the exercise, and the licensee's formal post-exercise critique.

##### b. Observations and Findings

Section 5.8 of the Big Rock Point ISFSI Emergency Plan requires the licensee to perform a biennial exercise to demonstrate emergency response capabilities and effectiveness of the licensee's Emergency Plan. The scenario for the October 10, 2012, exercise involved a simulated lightning strike and subsequent fire within the ISFSI protected area that caused damage to a loaded storage cask and storage area electrical systems. Local firefighters provided offsite support in real time in response to the simulated emergency. In addition, local law enforcement participated in providing simulated support of the site security force, including traffic control at the entry road.

In response to the event, the licensee implemented appropriate, timely, and necessary actions to address the simulated event. The licensee correctly classified the event, made timely notifications, augmented personnel as needed, conducted adequate radiological monitoring, and ensured the safety of personnel. Licensee personnel maintained control throughout the scenario, starting with a prompt recognition of the initiating event and through recovery discussions. Throughout the exercise, the licensee's staff communicated well with all involved parties and demonstrated knowledge of the Emergency Plan. During the post-exercise critique, the licensee adequately evaluated its emergency response and management capability.

The inspector identified observations in the areas of radiation protection and communications. Site personnel did not perform response checks on radiological instruments before use to assess radiological conditions in the field. Response checks are a standard industry practice that are performed before use to ensure instruments will respond appropriately to radiation. This observation has been entered into the licensee's corrective action program. In addition, during the review of logs, the inspector was not able to determine if the identification and classification of a Notice of Unusual Event (NOUE) was communicated to the State of Michigan. The licensee had declared an Alert shortly after the NOUE was declared and due to that short time frame, had potentially not notified the State of Michigan of the NOUE declaration before notifying

them of the Alert. The licensee was not able to verify whether or not the notification of the NOUE had been communicated. This observation has also been entered into the licensee's corrective action program.

No findings of significance were identified.

c. Conclusion

The licensee adequately demonstrated the effectiveness of its ISFSI Emergency Plan and its ability to implement the plan in response to an emergency.

## 1.2 Surveillance and Maintenance

a. Inspection Scope

The inspector reviewed the licensee's surveillance and maintenance program associated with dry fuel storage to verify compliance with the applicable regulations, the License, and Technical Specifications (TS). The inspector walked down the ISFSI pad, observed daily surveillance activities, interviewed personnel, and reviewed select documents. The inspector reviewed temperature logs for June, July, and August 2011 and January, May, July, and August 2012. The inspector also reviewed the licensee's results from the second five-year inspection of the first loaded storage cask.

b. Observations and Findings

The inspector conducted a walk down of the ISFSI pad and observed authorized and trained licensee staff perform daily surveillances of the casks including temperature monitoring, verifying the readings were well below Technical Specification limits, and inlet and outlet vent screen checks to ensure they were free of significant blockage or damage. The inspector also evaluated the general condition of the pad, the transfer cask, lift unit, horizontal transfer system and the J-skid. The inspector noted that the review of temperature log data indicated that the casks operated as designed with no abnormalities. The inspector found that the licensee performed and documented the surveillance activities as required by TS and site procedures. In addition, the inspector performed independent radiation surveys of the casks and general ISFSI area with a Canberra UltraRadic dose rate meter, and the results were bounded by the radiological posting and consistent with the licensee's.

In addition, the inspector reviewed the licensee's five-year cask inspection documentation for storage cask number 7 that includes both pictures and video of the interior of the cask. The licensee performed this inspection as required by T365-35, "Dry Fuel Storage Cask Inspections," Revision 7. The inspector noted a material deposit and streaking on the canister shell and also mineral deposits on the interior of the storage cask. The licensee performed an evaluation of the deposits and streaking and documented it in CAMCA-12-023, "Evaluation of Big Rock Point FuelSolutions™ W150 Cask 5-Year Inspection Results," dated November 8, 2012. The licensee determined that the conditions identified above do not adversely affect the ability of the cask system to perform its intended safety functions and do not require repair. As of the exit date for this inspection, the adequacy of this evaluation and its conclusion is currently under

review by the NRC (IFI 07200043/12001-01 and IFI 05000155/12001-01; Adequacy of Five-year Cask Inspection Evaluation).

No findings of significance were identified.

c. Conclusion

The licensee implemented its surveillance and maintenance program in accordance with applicable regulations, the License, and TS. The NRC is continuing to review the licensee's evaluation of the conditions noted from the interior of the storage cask from the five-year cask inspection.

### 1.3 Environmental Monitoring

a. Inspection Scope

The inspector reviewed the licensee's annual Radioactive Effluent Release Report for 2010 and 2011, which was prepared in accordance with the requirements of Title 10 of the Code of Federal Regulations (CFR) 50, Appendix I and Technical Specifications 6.6.2. The inspector also reviewed gamma dose results for 2010 and 2011 for the ISFSI protected area fence and controlled area boundary. This review evaluated whether the licensee was in compliance with the off-site dose requirements prescribed by 10 CFR 72.104.

b. Observations and Findings

Currently, the only radiological environmental monitoring required for the ISFSI is gamma dose because the licensee no longer has any liquid or gaseous effluent releases. In addition, the licensee did not perform any activities since 2009 that generated any solid radioactive waste. The results for both 2010 and 2011 were similar and well under the limits of 10 CFR 72.104.

No findings of significance were identified.

c. Conclusion

The licensee established and maintained its environmental monitoring program in accordance with applicable 10 CFR Part 20, 50 and 72 regulations, the License, and Technical Specifications.

### 1.4 Quality Assurance

a. Inspection Scope

The inspector reviewed corrective action reports from 2011 and 2012 to determine the licensee's effectiveness in identifying, resolving, and preventing problems. The inspector reviewed facility procedural changes to its EP program and their associated evaluations from 2011 to verify compliance with the applicable regulations and site quality assurance (QA) requirements. The inspector also reviewed and evaluated the 2010 and 2011 Radiation Protection Program Annual Reviews required by 10 CFR 20.1101(c) to

determine the adequacy of their scope and evaluate the results and any subsequent actions taken by the licensee.

b. Observations and Findings

A review of condition reports (CRs) written during 2011 and 2012 indicated that the licensee was effectively identifying and following up on pertinent facility issues. The inspector determined that issues were being effectively addressed and adequately closed out to prevent recurrence with one exception as described below.

During the review of CR-PLP-2011-01700, the inspector noted that the licensee determined an update to their License Termination Plan (LTP) was not performed as required by 10 CFR 50.71(g). The licensee last updated their LTP on September 27, 2005. During the licensee's performance of corrective actions as a result of this determination, the licensee concluded that 10 CFR 50.71(g) did not apply to the LTP. Subsequently, the inspector reviewed the requirements to update the LTP. The inspector determined that the licensee's evaluation failed to recognize that a condition of the facility license required a periodic update.

As a result of this review, the NRC identified a Severity Level IV Non-Cited Violation (NCV) of Condition 2.C.(4) of License No. DPR-06, Amendment 127 dated April 13, 2007 for failure to update the LTP every 24 months. Specifically, during the period between 2007 and 2011, the licensee did not submit an updated LTP every 24 months.

Condition 2.C.(4) of License No. DPR-06, Amendment 127 dated April 13, 2007, states, in part, the licensee "shall submit an updated LTP in accordance with 10 CFR 50.71(e)." 10 CFR 50.71(e) states, in part, nuclear power reactor facilities shall update the Final Safety Analysis Report (FSAR) periodically. For facilities that have submitted their certifications required by 10 CFR 50.82(a)(1), subsequent revisions to the FSAR must be filed every 24 months.

Contrary to the above, the licensee failed to submit an updated LTP in accordance with 10 CFR 50.71(e) from 2005 to 2011. The inspector used Traditional Enforcement guidance to determine the significance of the violation. This violation was determined to be a Severity Level IV violation using the Enforcement Policy, Example 6.1.d.3, in that the licensee failed to update the LTP as required but the potential erroneous information was not used to make an unacceptable change to the facility or procedures. The licensee entered this issue into the corrective action program (CR-PLP-2012-7785) and is currently completing an update to the LTP. This violation is being treated as an NCV, consistent with Section 3.1.1 of the NRC Enforcement Manual. (NCV 07200043/12001-01 and NCV 05000155/12001-01; Failure to Update the LTP Every 24 Months)

One Severity Level IV NCV was identified.

c. Conclusion

The licensee performed changes to its EP program in accordance with site procedures and applicable regulations. The licensee also performed audits of its Radiation Protection program that were of adequate scope and in accordance with the applicable regulations. The licensee implemented its corrective action program in accordance with



the applicable regulations and site QA requirements with one exception. The licensee failed to update the LTP in accordance with license requirements, which was not identified by the licensee through their corrective action process. The licensee has implemented prompt corrective actions to restore compliance and prevent recurrence.

## **2.0 Exit Meeting**

The inspector presented the interim inspection results to members of the licensee staff at the completion of the onsite inspection activities on October 11, 2012. After the conclusion of the in-office review, the inspector presented the final inspection results to members of the licensee staff during an exit teleconference on December 18, 2012. The licensee acknowledged the results presented and did not identify any of the documents reviewed as proprietary in nature.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### PARTIAL LIST OF PEOPLE CONTACTED

Larry Potter, Big Rock Point ISFSI Supervisor  
Bob Vanwagner, Manager, Dry Fuel Storage  
Steve LaJoice, Securitas Security Manager

### INSPECTION PROCEDURE USED

60858                      Away-From-Reactor ISFSI Inspection Guidance

### ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	<u>Type</u>	<u>Summary</u>
IFI 07200046/12001-01 IFI 05000155/12001-01	IFI	Adequacy of Five-year Cask Inspection Evaluation
NCV 07200046/12001-01 NCV 05000155/12001-01	NCV	Failure to Update the LTP Every 24 Months
<u>Closed</u>		
NCV 07200046/12001-01 NCV 05000155/12001-01	NCV	Failure to Update the LTP Every 24 Months
<u>Discussed</u>		
None		

### LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
CR	Condition Report
DNMS	Division of Nuclear Materials Safety
EP	Emergency Preparedness
IFI	Inspection Follow-Up Item
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
LTP	License Termination Plan
NCV	Non-Cited Violation
NOUE	Notice of Unusual Event
NRC	U.S. Nuclear Regulatory Commission
QA	Quality Assurance
TS	Technical Specifications

## **LIST OF DOCUMENTS REVIEWED**

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections of portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### **Emergency Preparedness**

Big Rock Point ISFSI Emergency Plan, Revision 6

Big Rock Point 2012 Emergency Exercise

### **Surveillance and Maintenance**

Licensee documents reviewed and utilized during the course of this inspection are specifically identified in the "Report Details" above.

### **Environmental Monitoring**

PNP-2012-018; "2011 ISFSI Annual Radioactive Effluent Release Report," dated February 22, 2012

PNP-2011-023; "2010 ISFSI Annual Radioactive Effluent Release Report," dated March 1, 2011

### **Quality Assurance**

10CFR50.54(q) Evaluation; Big Rock ISFSI Procedure, Volume 35; BRP ISFSI Emergency Plan, Revision 5; dated October 31, 2011

10CFR50.54(q) Evaluation; Big Rock ISFSI Procedure, Volume 35A-02; BRP Emergency Response Organization Responsibilities, Revision 8; dated October 31, 2011

10CFR50.54(q) Evaluation; Big Rock ISFSI Procedure, Volume 35A; IEPIP-10, Emergency Response Organization Training, Revision 3; dated October 27, 2011

CR-PLP-2010-06273; During Big Rock Emergency Plan Exercise there was confusion between dose rate and frisker readings; dated November 24, 2010

CR-PLP-2011-00243; ISFSI Horizontal Transfer System hydraulic power unit 2 has a small leak; dated January 18, 2011

CR-PLP-2011-01700; Big Rock LTP was not performed as required by 10 CFR 50.71(g); dated April 6, 2011

CR-PLP-2011-02073; LTP Review Discovered No Formal Review of the Big Rock Radiation Program was performed; dated April 26, 2011

CR-PLP-2011-05610; ISFSI Emergency Plan Implementing procedure revision 50.54q screening not completed prior to final approval; dated October 25, 2011

### **LIST OF DOCUMENTS REVIEWED (Continued)**

CR-PLP-2012-04104; Horizontal Transfer System Bi-monthly test tower #3 would not fully retract; dated May 24, 2012

CR-PLP-2012-06262; Defects/ Bug holes in the concrete exterior of the Big Rock Cask number 110; dated September 17, 2012

A. Vitale

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We will gladly discuss any questions you may have regarding this inspection. If you have questions, please contact Mr. Jeremy Tapp of my staff at 630-829-9862.

Sincerely,

*/RA/*

Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Docket Nos. 072-00043; 050-00155  
License No. DPR-6

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