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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

NVY 18-020

September 4, 2018

Docket No. 07200059

License No. DPR-28

Mr. Corey Daniels  
Director, Nuclear Decommissioning  
Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
Vernon, VT 05354

SUBJECT: NRC INSPECTION REPORT NO. 07200059/2018001, ENTERGY NUCLEAR OPERATIONS, INC., VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT

Dear Mr. Daniels:

On August 6, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection of the permanently shut down Vermont Yankee Nuclear Power Station (VY) Independent Spent Fuel Storage Installation (ISFSI) activities. The on-site inspection was performed April 23-26, June 25-27, and July 17-19, 2018. In-office review of documents and drawings was ongoing between on-site visits. The purpose of the inspection was to determine whether ISFSI activities were conducted safely and in accordance with NRC requirements. The inspection consisted of observations by the inspectors, interviews with personnel, and a review of procedures and records. The results of this inspection were discussed with you and other members of your staff on August 6, 2018, and are described in the enclosed report. No findings of safety significance were identified.

In accordance with 10 Code of Federal Regulations (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. 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.

Current NRC regulations and guidance are included on the NRC's Web site at [www.nrc.gov](http://www.nrc.gov); select **Radioactive Waste; Decommissioning of Nuclear Facilities**; then **Regulations, Guidance and Communications**. The current Enforcement Policy is included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents**; then **Enforcement Policy** (Under 'Related Information'). You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

No reply to this letter is required. Please contact John Nicholson at 610-337-5236 if you have any questions regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond J. Powell". The signature is fluid and cursive, written in a professional style.

Raymond J. Powell, Chief  
Decommissioning, ISFSI and  
Reactor HP Branch  
Division of Nuclear Materials Safety

Docket No: 07200059  
License No: DPR-28

Enclosure: Inspection Report 07200059/2018001  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No: 072-00059

License No: DPR-28

Report No: 07200059/2018001

Licensee: Entergy Nuclear Operations, Inc. (Entergy)

Facility: Vermont Yankee Nuclear Power Station (VY)

Location: Vernon, VT 05354

Dates: April 23-26, June 25-27, July 17-19,  
2018

Exit Date: August 6, 2018

Inspectors: Marlene Davis, Senior Transportation and Storage  
Safety Inspector  
Inspections and Operations Branch  
Division of Spent Fuel Management

John Nicholson, Senior Health Physicist  
Decommissioning, ISFSI, and Reactor HP Branch  
Division of Nuclear Materials Safety, Region 1

Approved by: Raymond Powell, Chief  
Decommissioning, ISFSI, and Reactor HP Branch  
Division of Nuclear Materials Safety, Region I

Enclosure

## EXECUTIVE SUMMARY

Entergy Nuclear Operations, Inc.  
Vermont Yankee Nuclear Power Station  
NRC Inspection Report No. 07200059/2018001

This report covered on-site inspections by the Nuclear Regulatory Commission (NRC) regional based inspectors of activities related to Vermont Yankee Nuclear Power Station (VY) dry cask storage of spent fuel during onsite inspections on April 23-26, June 25-27, July 17-19, 2018 and in-office review of documents and drawings between and after on-site inspections. The inspection included a review and observation of the Independent Spent Fuel Storage Installation (ISFSI) dry cask loading activities. The inspection consisted of observations by the inspectors, interviews with Entergy personnel, and a review of procedures and records. The NRC's program for overseeing the safe operation of dry storage of spent fuel at an ISFSI is described in Inspection Manual Chapter 2690, "Inspection Program for Dry Storage of Spent Reactor Fuel at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packaging."

Based on the results of this inspection, no findings of safety significance were identified.

## REPORT DETAILS

### **1.0 Independent Spent Fuel Storage Installation**

#### 1.0 Operation of an ISFSI at Operating Plants (IP 60855)

##### a. Inspection Scope

On April 23-26, 2018, the inspector observed and evaluated VY's loading plans for Multi-Purpose Canister (MPC) No. 44 associated with their ISFSI dry cask campaign. The inspector also observed the receipt and inspection of the last five MPCs for the campaign. These five MPCs were delivered with the damaged fuel containers (DFCs).

On June 25-27, 2018, the inspectors observed the set up and data collection for the Condition 9 Thermal Analysis with cask # 51. The inspectors checked the calibration dates and records for instrumentation used during the data collection. The inspectors verified that the instrumentation was set up as per the procedure. The inspectors observed personnel taking measurements and utilizing good three-way communication.

On July 17-19, 2018, the inspector observed the loading of damaged spent fuel bundle LYN831 into DFCs. Individual fuel rods were removed from the bundle with remote handling tools and placed one at a time into DFCs. The inspector also observed the transport of cask #52 to the ISFSI pad, the placement of MPC #53 into the HI-TRAC and the associated heavy lift of the HI-TRAC/MPC as it was lowered into the spent fuel pool.

The inspector verified compliance with the Certificate of Compliance, Technical Specifications (TS), and station procedures. The inspector also attended pre-job briefings. During performance of these activities, the inspector verified that procedure use, communication, and coordination of ISFSI activities met established VY standards and requirements.

The inspector observed radiation protection technicians as they performed surveys and provided job coverage for the cask loading workers. The inspectors reviewed survey data maps and radiological records to confirm that radiation survey levels measured were within limits specified by the TS and consistent with values specified in the Final Safety Analysis Report.

The inspectors also observed the continuous oversight by both the project management and nuclear oversight groups. Representatives were observed closely interacting with the crews for all activities observed during the on-site inspections.

The inspector reviewed selected corrective action reports, especially those related to the DFCs and the associated lids, MPC stand-off shims, and damaged fuel bundle LYN831 and the associated follow-up actions to ensure that issues were entered into the corrective action program, prioritized, and evaluated commensurate with their safety significance.

##### b. Findings

No findings of significance were identified.

## **2.0 Exit Meeting**

On August 6, 2018, during a conference telephone call, the inspector presented the inspection results to Corey Daniels, Director, Nuclear Decommissioning, and other members of the Entergy staff who acknowledged the inspection results. The inspector verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

R. Anthis	Holtec Cask Load Supervisor
C. Barfield	Holtec Cask Load Supervisor
*C. Chappell	Manager Design and Projects
*C. Daniels	Director, Nuclear Decommissioning
S. Dorval	Manager, Radiation Protection/Chemistry
B. Erickson	Holtec RP Technician
P. Gerz	Plant Manager
D. Holmquist	Holtec Lead RP Tech
M. Jurkowski	Entergy Project Oversight
*J. Laughney	Manager Quality Assurance
*A. Leshinskie	State of Vermont Decommissioning Engineer
M. Pletcher	Manager, Radiation Protection/Chemistry
*T. Silko	Lead Licensing Engineer
*K. Swanger	Manager Construction
*D. Ticatch	Holtec Project Manager
Y. Wellis	Entergy Oversight

\* Denotes attendance at the ISFSI exit conference call held on August 6, 2018

### ITEMS OPENED, CLOSED, AND DISCUSSED

None

### LIST OF DOCUMENTS REVIEWED

#### Operation of an ISFSI at Operating Plants

##### Procedures

MMVN-DFS-10164 R.00, Condition 9 Thermal Test Procedure for the HI-STORM 100S Version B  
MMVN-DFS-10174 R.00, GE 8x8 Fuel Rod Relocation for Dry Cask Storage  
MMVN-DFS-10175 R.01, Individual Fuel Rod Handling at Spent Fuel Pool Depth  
MMVN-DFS-10176 R.01, Fuel Rod Accountability  
MMVN-DFS-10177 R.00, Failed Fuel Examination & Pool Cleanup  
OP-2530 R. 5, Radiological Monitoring For Dry Fuel Storage

##### Condition Reports

CR-VTY-2018-286, 2018-301, 2018-302, 2018-361, 2018-495

Miscellaneous

72.48 Screening/Evaluation No. 1321, 03/09/2018  
72.48 Screening/Evaluation No. 1336, Change to Damaged Fuel Container Design, 07/10/2018  
Damaged Fuel Container for Fuel Debris Fabrication Drawing, Drawing No. 11328 Rev. 3  
Fuel Recovery Tool Assembly Drawing, Drawing 2569 Rev. 0

Holtec Calculation HI-2012787, Analysis of Basket Shim Standoff  
MPC Shim Inspection Summary 03/10/2018  
Thermal Analysis of HI-STORM 100 System with MPC-68M Under a  
Hypothetical Failure of Shim Standoffs, Holtec Report No: 2188116  
Summary of Thermal Analysis with Shim Standoff Failures  
WO 497768 Repair Bent DFC Lead In Guides in MPC 567  
Yellow Memo, Crew Clock Reset, 04/25/2018, Radioactive Components not Stored iaw DP-0545

Drawings

Drawing No. 7195, Rev 15, Assembly Fuel Basket MPC-68M

Licensing Documents

10 CFR 72.212 Report, Docket 72-0059, HI-STORM100 System, Licensing Basis Document, Rev 8  
CoC for Spent Fuel Storage Casks, No. 1014, Amendment No. 10  
CoC No. 1014, Appendix A Technical Specifications for the HI-STORM 100 Cask System

**LIST OF ACRONYMS USED**

DFC	Damaged Fuel Container
ISFSI	Independent Spent Fuel Storage Installation
MPC	Multi-Purpose Canister
NRC	U.S. Nuclear Regulatory Commission
TS	Technical Specifications
VY	Vermont Yankee Nuclear Power Station