



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

January 6, 2021

Mr. Billy Reid, Jr.  
Vice President  
Vermont Yankee Nuclear Power Station  
320 Governor Hunt Road  
Vernon, VT 05354

SUBJECT: NRC INSPECTION REPORT NOS. 05000271/2020002 AND  
07200059/2020001, NORTHSTAR NUCLEAR DECOMMISSIONING  
COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION,  
VERNON, VERMONT

Dear Mr. Reid:

On December 10, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an on-site inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shutdown Vermont Yankee Nuclear Power Station (VY). On-site inspections were performed August 24-27, October 13-15, and December 7-10, 2020. Additional inspection activities (in office reviews) were conducted remotely as a consequence of the COVID-19 public health emergency (PHE) during the inspection period. The inspector examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of observations by the inspector, interviews with site personnel, and a review of procedures and records. The results of the inspection were discussed with you and other members of the VY staff on December 10, 2020 and are described in the enclosed report.

No findings of safety significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, 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 Website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if any, 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 website 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 Steve Hammann at 610-337-5399 if you have any questions regarding this matter.

Sincerely,

*/RA/*

Anthony Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor Health  
Physics Branch  
Division of Nuclear Materials Safety

Docket Nos. 05000271 and 07200059  
License No. DPR-28

Enclosure: Inspection Report 05000271/2020002 and 07200059/2020001

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NRC INSPECTION REPORT NOS. 05000271/2020002 and 07200059/2020001, NORTHSTAR NUCLEAR DECOMMISSIONING COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT DATED January 6, 2021.

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OFFICE	DNMS/RI	DNMS/RI	E				
NAME	SHammann/sth	ADimitriadis/ad					
DATE	1/06/2021	1/06/2021					

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection Nos. 05000271/2020002 and 07200059/2020001  
Docket Nos. 05000271 and 07200059  
License No. DPR-28  
Licensee: Northstar Nuclear Decommissioning Company, LLC (Northstar NDC)  
Facility: Vermont Yankee Nuclear Power Station (VY)  
Location: Vernon, VT 05354  
Inspection Dates: August 24, 2020 to December 10, 2020  
Inspector: Stephen Hammann, Senior Health Physicist  
Decommissioning, ISFSI, and Reactor Health Physics Branch  
Division of Nuclear Materials Safety, Region I  
Approved By: Anthony Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor Health Physics Branch  
Division of Nuclear Materials Safety, Region I

Enclosure

## **EXECUTIVE SUMMARY**

Northstar Nuclear Decommissioning Company, LLC  
Vermont Yankee Nuclear Power Station  
NRC Inspection Report Nos. 05000271/2020002 and 07200059/2020001

An announced VY decommissioning inspection was completed on December 10, 2020. On-site inspections were performed August 24-27, October 13-15, and December 7-10, 2020. Additional inspection activities were conducted remotely (in office reviews) during the inspection period as a consequence of the COVID-19 public health emergency (PHE). The inspections included a review of dry cask storage, plant modifications, radiological environmental monitoring, maintenance, corrective action program, and decommissioning performance and status. The inspection consisted of observations by the inspector, interviews with VY personnel, a review of procedures and records, and plant walkdowns. The NRC's program for overseeing the safe operation of a shutdown nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program." 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 Packagings."

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

## REPORT DETAILS

### 1.0 Background

On January 12, 2015, VY certified the permanent removal of fuel from the reactor vessel [Agencywide Document and Access Management System (ADAMS) Accession No. ML15013A426]. This met the requirements of 10 Code of Federal Regulations (CFR) 50.82(a)(1)(i) and 50.82(a)(1)(ii). On January 20, 2015, the NRC notified VY that the Operating Reactor Assessment Program would cease on January 24, 2015, and that implementation of the Decommissioning Power Reactor Inspection Program would begin on January 25, 2015 (ADAMS Accession No. ML15020A482). On January 11, 2019 an amended license was issued transferring the license from Entergy Nuclear Operations, Inc. to Northstar NDC (ADAMS Accession No. ML18347B360). VY is in active decommissioning as described in IMC 2561.

### 2.0 Active Decommissioning Performance and Status Review

a. Inspection Scope (Inspection Procedures 37801, 40801, 62801, 71801, 83750, 84750)

The inspector conducted document reviews and interviews with plant personnel to determine if Northstar NDC procedures and processes were in compliance with the regulations and guidance associated with 10 CFR 50.59. The inspector also reviewed Northstar NDC's applicability determination process that is used to determine if a 10 CFR 50.59 evaluation is needed and reviewed a sampling of 10 CFR 50.59 screenings. The inspector reviewed the qualification and training for 10 CFR 50.59 and process applicability determination evaluators and screeners.

The inspector reviewed documents and interviewed VY personnel to determine if Northstar NDC management performed audits and self-assessments and if issues were identified and corrected in accordance with the site's corrective action program (CAP). The inspector reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, follow-up evaluations were of sufficient quality, and if Northstar NDC assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue. The inspector reviewed site audits for the past year to determine if audits were thorough and that corrective actions were initiated if necessary.

The inspector performed a walkdown of the plant and evaluated housekeeping and assessed area radiological conditions and radiological access controls, including posting and labeling. The inspector met with VY management and discussed how routine maintenance and emergent work is requested, prioritized, and scheduled. The inspector reviewed the results of VY's operational check of the fire pump and surveillances of fire extinguishers to determine if the checks were conducted in accordance with instructions appropriate to the circumstances, completed as scheduled, and in accordance with regulatory requirements.

The inspector reviewed activities and documentation associated with effluent and environmental monitoring to ensure that the licensee effectively controlled, monitored, and quantified releases of radioactive materials in liquid, gas, and particulate forms to the environment. The inspector accompanied a chemistry technician during the collection and analysis of stack effluent samples and water samples, performed a

walkdown of various environmental dosimetry locations and interviewed plant personnel. The inspector reviewed procedures, diagrams of effluent monitoring systems, the annual radiological environmental monitoring program (REMP) report, and the Off-Site Dose Calculation Manual (ODCM).

The inspector observed work-in-progress for reactor vessel internal segmentation and removal and advanced off gas building demolition to verify adherence to site work plans and procedures. The inspector observed radiological controls and radiation protection technician (RPT) job coverage for the work-in-progress activities and toured the turbine building to review progress for the piping and component removal.

b. Observations and Findings

The inspector determined that 10 CFR 50.59 screenings are being performed and that Northstar NDC had trained and qualified individuals to perform the screenings and evaluations. The inspector determined that no changes or modifications under 10 CFR 50.59 were made in the past year.

The inspector determined that issues were being identified and entered into the CAP in a timely manner and the issues were effectively screened, prioritized and evaluated commensurate with their safety significance. The inspector verified audits were being performed by qualified individuals independent of the organization being audited and that management reviewed the audits and associated corrective actions.

The inspector verified that the maintenance and surveillance program for systems and components had been conducted in accordance with the regulations, established procedures, and completed as scheduled. The inspector noted during the plant walk-down that housekeeping and plant material condition standards were being maintained.

The inspector verified that effluent releases to the environment had been properly controlled, monitored, and quantified as required by NRC regulations. The inspector verified that the annual radiological effluent and the annual REMP reports demonstrated that calculated doses were below regulatory dose criteria of 10 CFR 50, Appendix I. Additionally, the inspector verified effluent sampling equipment and area radiation monitors were checked, calibrated, and maintained as specified in the ODCM.

The inspector determined that Northstar NDC's activities were performed safely and in accordance with work plans and plant procedures and that RPT 's effectively maintained radiological controls for the work-in-progress. The inspector verified the activities and schedule were consistent with license requirements and the site Post Shutdown Decommissioning Activities Report. The inspector noted that demolition of the AOG was complete, piping and component removal in the turbine building and reactor vessel internal removal were both more than halfway completed.

c. Conclusions

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

### **3.0 ISFSI**

#### **a. Inspection Scope (Inspection Procedure 60855)**

The inspector assessed whether Northstar NDC personnel had been operating and maintaining ISFSI programs in conformance with the commitments and requirements contained in the FSAR, CoC, TS, QA program, site procedures, and 10 CFR Part 72.

ISFSI facilities, located at sites where loading operations have been completed, are essentially passive operating facilities. The inspector's review was directed towards confirming the ongoing adequacy of the radiation protection, fire protection, emergency preparedness, surveillance, maintenance, environmental monitoring, training, QA, and corrective action programs.

The inspector observed cask temperature monitoring activities, interviewed personnel, and reviewed records and procedures. The inspector also reviewed changes made to Northstar NDC's programs and procedures since the last inspection to determine if changes were consistent with the license or CoC and did not reduce the effectiveness of the program.

#### **b. Observations and Findings**

The inspector determined that Northstar NDC's plans and preparations for controlling radiological activities were effective at meeting 10 CFR Part 20 requirements. The inspector also verified that special nuclear material (SNM) stored at the ISFSI was properly accounted for. The inspector verified all employees were below the regulatory dose limits and the dose requirements for members of the public at the nearest accessible location to the ISFSI were within limits prescribed by 10 CFR 72.104.

The inspector determined daily temperature monitoring of the HI-STORM casks was performed by VY personnel in accordance with surveillance requirements in the TS and Northstar NDC's procedures contain backup plans if the primary surveillance method was unavailable. The inspector performed a tour of the ISFSI pad and did not note any significant material condition issues that would impact the performance of the pad and loaded casks. The inspector also verified that transient combustibles were not being stored on the ISFSI pad or in the vicinity of the casks and confirmed vehicle entry onto the ISFSI pad was controlled in accordance with site procedures.

#### **c. Conclusions**

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

### **4.0 Exit Meeting Summary**

On December 10, 2020, the inspector presented the inspection results to Mr. Billy Reid, Vice President, and other members of Northstar NDC staff who acknowledged the inspection results. No proprietary information was retained by the inspector or documented in this report.



## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

B. Reid, Vice President  
D. Pearson, Vice President  
C. Daniels, ISFSI Sr. Manager  
N. Langub, Decommissioning Project Manager  
D. Giard, ISFSI Administrator  
R. Mauthe, ISFSI Technical Specialist  
S. Naeck, ISFSI Operations Manager  
M. Pletcher, Radiation Protection Manager  
R. Routhier, Facility Area Manager  
T. Silko, Licensing Manager  
D. Toegel, Power Block Area Manager  
J. Ward, Maintenance Technical Specialist

### Orano USA

J. Byers, Orano Decommissioning Services VY Project Manager

### State of Vermont

T. Leshinskie, Nuclear Engineer

## **ITEMS OPEN, CLOSED, AND DISCUSSED**

None

## **LIST OF DOCUMENTS REVIEWED**

### Condition Reports

CR- 2020 - 0073, 0106, 0113, 0174, 0175,00177, 0198, 0213, 0214, 0227, 0253, 0269, 0284, 0285, 0287

### Procedures and Programs

DP 2631, Rev. 36, Radiochemical Instrumentation  
NSVY-AP-10085, Rev. 2, Administrative Procedure  
NSVY-CY-0640- Rev. 1, Chemistry Department Scheduling  
NSVY-CY-2611, Rev. 0, Stack Effluent Sampling and Analysis  
NSVY-CY-4601, Rev. 0, Environmental Radiation Surveillance Program  
NSVY-CY-4605, Rev. 0, Environmental Radiation Sampling and Analysis  
NSVY-RW-105, Rev. 2, Process Control Program  
PP 7603, Rev. 6, Environmental Program  
Vermont Yankee Nuclear PowerStation, Quality Assurance Program Manual, Rev. 9  
VY-AD-5, Rev. 2, ISFSI Work Control  
VY-AD-7, Corrective Action Program  
VY-AD-9, Rev. 2, Process Applicability Determination Process and Regulatory Reviews  
VY-AD-28, ISFSI Maintenance Program  
VY-EF-3, Rev.1, Special Nuclear Material and Greater Than Class C Waste Control, Accountability and Reporting Program

### Procedures and Programs (Cont'd)

VY-EO-1, Rev. 0, ISFSI Emergency Plan Drills and Exercises  
VY-EO-3, Rev. 2, ISFSI Emergency Plan Implementation  
VY-EO-4, Rev. 2, ISFSI Response to Accident and Natural Phenomena Events  
VY-OP-01, Rev. 2, ISFSI Log Sheet and Hi-Storm 100 Cask eat Removal System Surveillance Program  
VY-OP-04, Rev. 0, ISFSI Hi-Storm and Pad Annual Inspection Program  
VY-OP-18, Rev. 0, ISFSI Hi-Storm 100 Cask Temperature Monitoring System Maintenance  
VY-QA-3, Rev. 0, Quality Inspection Program  
VY-RP-1, Rev. 2, ISFSI Conduct of Radiation Protection

### Miscellaneous

Annual Overpack and ISFSI Pad Inspection – 2020  
Energy Solutions Letter, 10CFR71.95 Report on the 3-60B Cask, 10/20/20  
Monthly Fire Extinguisher Surveillance, 11/2020  
Monthly Operational Check of Electric Fire Pump, 10/2020  
Northstar Letter, 10CFR71.95 Report on the 3-60B Cask, 11/17/20  
Northstar Letter, 2019 Vermont Yankee Nuclear Power Corp., Annual SNM Reporting, December 11, 2019  
QA Audit, VY-A-19-01, ISFSI Operations  
QS-2020-VY-001, Independent Assessment of the Emergency Preparedness Program  
QS-2020-VY-002, Independent Assessment of the Packaging and Shipment of a Type “B” Package  
RWP 2020-1000  
SP-7898, Gamma Spectroscopy Report, AOG Trench  
Survey Log 20 -009, 1132, 1144, 1195  
Vermont Yankee Nuclear Power Station, 10 CFR 72.212 Report, Rev. 9  
Vermont Yankee Nuclear Power Station, 2019 Annual Radiological Effluent Release Report  
Vermont Yankee Nuclear Power Station, 2019 Annual Radiological Environmental Operating Report  
VY-IM-19-016, ISFSI Operations Quality Assurance Audit  
VY-IM-20-023, 2020 Vermont Yankee Quality Assurance Program Manual Independent Management Assessment Report  
VY-VA-20-01, Vermont Yankee Audit, Vendor Access Authorization

### Work Packages and Plans

ENV-CWP-079, Rev. 1, Sampling for Building Characterization  
HVAC-CWP-090, Rev. 0, Install New RB HVAC System  
Maintenance/Work Request 20-23, VY-AD-5 Attachment A  
  
AOG-CWP-041, Rev. 2, Remove Piping and Components from the AOG  
Job Hazard Analysis, Remove Piping and Components from the AOG  
NSVY DP Job Hazard Analysis, New Warehouse Demo Prep  
NSVY-TRWP-ORAN0-005, Rev. 0, Steam Separator (SA) Cyclones Segmentation and Packaging  
NSVY-TRWP-ORANO-006, Rev. 0, Steam Separator (SA) Standpipes and Dome Segmentation and Packaging  
NSVY-TRWP-ORANO-007, Rev. 1, Feedwater Sparger (FS) and Core Spray (CS) Piping Removal and Staging

Work Packages and Plans (Cont'd)

NSVY-TRWP-ORANO-008A, Rev. 0, Upper Core Grid (UG) Segmentation and Packaging  
NSVY-TRWP-ORANO-008B, Rev. 0, Fuel Support Castings (FC) Removal and Staging  
NSVY-TRWP-ORANO-0030, Rev. 0, RWC-A Transfer Operations  
WHS-CWP-055, Rev. 0, New Warehouse Demo Prep  
WHS-TRWP-061, Rev 0, New Warehouse Demolition

**LIST OF ACRONYMS USED**

ADAMS	Agencywide Document and Access Management System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
Northstar NDC	Northstar Nuclear Decommissioning Company, LLC
NRC	U.S. Nuclear Regulatory Commission
ODCM	Off-Site Dose Calculation Manual
PHE	Public Health Emergency
REMP	Radiological Environmental Monitoring Program
RPT	Radiation Protection Technician
TS	Technical Specification
VY	Vermont Yankee Nuclear Power Station