



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 Allendale Road, SUITE 102
KING OF PRUSSIA, PA 19406-1415

August 1, 2022

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

SUBJECT: NRC INSPECTION REPORT NO. 05000271/2022001, NORTHSTAR NUCLEAR DECOMMISSIONING COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT

Dear Mr. Reid:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an 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 February 7-10, April 4-7, and June 13-16, 2022. 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 inspectors 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 inspectors, interviews with site personnel, a review of procedures and records, and plant walkdowns. The results of the inspection were discussed with you, and other members of the VY staff on July 12, 2022, and are described in the enclosed report.

No violations of more than minor safety significance were identified.

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, 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; 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; 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 of my staff at 610-337-5399 if you have any questions regarding this matter.

Sincerely,

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health
Physics Branch
Division of Radiological Safety and Security

Docket No. 05000271
License No. DPR-28

Enclosure: Inspection Report 05000271/2022001

cc w/encl: Distribution via ListServ

SUBJECT: NRC INSPECTION REPORT NO. 05000271/2022001, NORTHSTAR NUCLEAR DECOMMISSIONING COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT DATED AUGUST 1, 2022

DOCUMENT NAME: <https://usnrc.sharepoint.com/teams/Region-I-Decommissioning-Branch/Inspection Reports/Inspection Reports - Final/VY inspection 2022001.docx>

SUNSI Review Complete: SHammann

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OFFICE	DNMS/RI		DNMS/RI				
NAME	SHammann		ADimitriadis				
DATE	7/21/2022		8/1/22				

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No. 05000271/2022001

Docket No. 05000271

License No. DPR-28

Licensee: Northstar Nuclear Decommissioning Company, LLC
(Northstar NDC)

Facility: Vermont Yankee Nuclear Power Station (VY)

Location: Vernon, VT

Inspection Dates: January 1, to June 30, 2022

Inspectors: Stephen Hammann, Senior Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Andrew Taverna, Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Leah Parks, Risk Analyst
Risk and Technical Analysis Branch
Division of Decommissioning, Uranium Recover, and Waste
Programs, Office of Nuclear Material Safety and Safeguards

Approved By: Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

Northstar Nuclear Decommissioning Company, LLC
Vermont Yankee Nuclear Power Station
NRC Inspection Report Nos. 05000271/2022001

An announced routine decommissioning inspection was completed on June 30, 2022, at the permanently shutdown Vermont Yankee Nuclear Power Station. On-site inspections were performed February 7-10, April 4-7, and June 13-16, 2022. 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 decommissioning performance and status, radiological safety, and radwaste transportation. The inspections consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walkdowns. The NRC's program for overseeing the safe decommissioning of a shutdown nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

Based on the results of this inspection, no violations of more than minor 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 71801, 83750, 86750)

The inspectors reviewed work activities, performed plant walk-downs, and observed work activities to assess site field conditions and determine if the licensee had identified and implemented administrative and engineering controls to protect the public and environment. The inspectors also performed walkdowns of the plant to evaluate housekeeping and the material condition of the site. The inspectors reviewed Northstar NDC's organization, staffing, and training to ensure reasonable assurance of safety and security in accordance with regulatory requirements. The inspectors attended licensee management meetings, planning meetings, and reviewed the current status of the overall project to determine compliance with the license, technical specifications (TS), and the post-shutdown decommissioning activities report (PSDAR). The inspectors reviewed the status of the decommissioning trust fund and met with Northstar NDC senior management to discuss annual expenditures.

The inspectors observed activities, reviewed documentation, and interviewed personnel associated with occupational radiation exposure to evaluate the licensee's protection of worker health and safety. The inspectors conducted a number of site walk-downs, including radiologically controlled areas, to examine and verify radiological postings, airborne and contamination controls, and locked high radiation doors and gates. The inspectors also toured instrument and sealed source storage locations to determine the adequacy of radiological instrumentation. The inspectors reviewed radiation work permits (RWPs), and As Low As Reasonably Achievable (ALARA) work plans to determine if radiation work activities were pre-planned effectively to limit worker exposure. The inspectors reviewed survey logs to ensure completeness and adequacy of surveys. The inspectors observed radiation protection (RP) technicians perform work activities to determine if implementation of radiological work controls, training and skill level were sufficient for the activities being performed. The inspectors reviewed the site dosimetry program and radiological dose records to determine compliance with the regulations.

The inspectors observed activities, interviewed personnel, performed walkdowns and reviewed documentation to evaluate the effectiveness of the licensee's programs for handling, storage, and transportation of radioactive material. The inspectors observed

workers handling and packaging radioactive waste and performed a walk-down of radioactive waste storage locations to determine if the licensee had properly classified and stored radioactive materials. The inspectors observed personnel surveys, labeling, and placarding vehicles used for transporting radioactive waste and also reviewed work packages for shipments of radioactive waste. The review included records of shipment packaging, surveying, labeling, marking, placarding, vehicle checks, and emergency instructions to determine compliance with the applicable NRC and Department of Transportation (DOT) regulations. The inspectors reviewed the training program and records to determine if radwaste personnel were qualified to appropriately implement the site solid radwaste program.

b. Observations and Findings

The inspectors found housekeeping and material condition of the site appropriate for the current stage of decommissioning. The inspectors noted that workers were knowledgeable and adhered to plant procedures and work plans and pre-job briefs were thorough and highlighted specific safety concerns. The inspectors determined site staffing was adequate and personnel qualifications and training were up-to-date. The inspectors noted that at the time of this inspection, Northstar was slightly ahead of their decommissioning schedule and completed activities included: demolition and removal of the cooling towers, advanced off-gas building, north warehouse, condensate storage tank, main stack, radwaste building, and administration building. The turbine building piping and component removal was mostly complete, and reactor building piping and component, removal was on-going. The removal and disposal of the reactor vessel and reactor vessel internals was nearly complete at the time of the inspection exit meeting.

The inspectors verified that RWPs and ALARA plans were implemented and were effective in limiting worker exposure, and occupational dose was appropriate for the scope of the radiological activities performed. The inspectors determined that RP staff effectively controlled work activities and radiologically controlled access points, used appropriate instruments for the surveys, and survey records were clear and complete. The inspectors verified that technician training and qualifications were up-to-date. The inspectors determined the site dosimetry program was adequate and worker exposures were within regulatory limits.

The inspectors verified that solid radioactive waste was adequately stored and monitored, and worker radwaste training and qualifications were up-to-date. The inspectors also verified that radioactive waste shipping paperwork was properly completed and Northstar personnel were knowledgeable in their duties and responsibilities. The inspectors determined radioactive waste shipped was properly classified, described, packaged, marked, and labeled, and was in proper condition for transportation. The inspectors determined the licensee's radwaste shipments were in compliance with NRC and DOT regulations.

c. Conclusions

No violations of more than minor safety significance were identified.

3.0 Exit Meeting Summary

On July 12, 2022, the inspectors 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 inspectors 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 Director
A. Miller, RP Supervisor
S. Naeck, ISFSI Operations Manager
M. Pletcher, Radiation Protection Manager
F. Provencal, Power Block Manager
R. Routhier, Facility Area Manager
T. Silko, Licensing Manager
D. Toegel, Decommissioning Project Manager

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- 2022 - 009, 013, 014, 019, 022, 026, 029, 039, 058, 078, 080, 083, 098

Procedures and Programs

NSVY-FP-127, Rev. 1, Control of Hot Work and Ignition Sources
NSVY-RP-104, Rev. 1, Personnel Contamination Events
NSVY-RP-203, Rev. 0, Dose Assessment
NSVY-TQ-126, Rev. 0, PISA Training Program
PTIP 21833-5.3, Rev. 1, MP197HB Preparation and Loading
TIMO 21833-T-001, Rev. 1, MP197HB Cask Leakage Testing

Miscellaneous

ALARA Plan for Reactor Vessel and Reactor Vessel Internals Segmentation Plan
Condensate Trench Intrusion Rate, 2/9/2022
Discharge Block Intrusion Rate, 2/9/2022
Dose Summary by RWP, 4/5/2022
Nuclear Safety Culture Monitoring Meeting Agenda, 2022-01, April 5, 2022
Northstar Letter, BVY 22-010, 2021 Individual Monitoring NRC Form 5 Report
Survey Log ID: DW 308, DW 316,
Survey Log Book: 22-0060, 0062, 0063, 0109, 0117, 0118, 0126
Trend Review Summary Report – 1 July to 31 December 2021
Transportation Package NSVY-2022-0038
Vermont Yankee Radiological Work Permits 2022-0405, 0723
VY Turnover/POD, 2/8/22, 2/9/22

VYNPS Characterization Survey Planning Worksheet: SORA2-02-CT2-Basin
VYNPS Free Release Survey Package: SORA2-01

Work Packages and Plans

CTL-CWP-148, Rev 0, Service & Control Building Demo Prep
GTCC-MUCWP-139, Rev. 0, Prepare for loading GTCC
NSVY-CWP-ORANO-0082, Load ATS-215 Cask with Garnet Shipment #7
NSVY-TRWP-ORANO-00021, Refueling (inner) Bellows Removal
NSVY-TRWP-ORANO-00022, RV Nozzles Segmentation
NSVY-TRWP-ORANO-00027, Rev. 0, RV Segmentation and Packaging
PWP-DDOPS.VTY-00021, Rev. 01, RV Segmentation Setup - Refueling (Inner)
Bellows Removal

LIST OF ACRONYMS USED

ADAMS	Agencywide Document and Access Management System
ALARA	As Low As Reasonably Achievable
CFR	<i>Code of Federal Regulations</i>
DOT	Department of Transportation
IMC	Inspection Manual Chapter
Northstar NDC	Northstar Nuclear Decommissioning Company, LLC
NRC	U.S. Nuclear Regulatory Commission
PHE	Public Health Emergency
PSDAR	Post Shutdown Decommissioning Activities Report
RP	Radiation Protection
RWP	Radiation Work Permit
TS	Technical Specification
VY	Vermont Yankee Nuclear Power Station