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

September 18, 2019

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

SUBJECT: NRC INSPECTION REPORT NO. 05000271/2019002, NORTHSTAR NUCLEAR DECOMMISSIONING COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT

Dear Mr. Reid:

On August 22, 2019, 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 May 20 - 23, June 17 - 20, July 29 - August 1, and August 19 - 22, 2019. 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 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 August 22, 2019, 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, 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 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 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 No. 05000271
License No. DPR-28

Enclosure: Inspection Report 05000271/2019002 w/Attachment

cc w/encl: Distribution via ListServ

NRC INSPECTION REPORT NO. 05000271/2019002, NORTHSTAR NUCLEAR DECOMMISSIONING COMPANY, LLC, VERMONT YANKEE NUCLEAR POWER STATION, VERNON, VERMONT DATED SEPTEMBER 18, 2019

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No.	05000271/2019002
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 05354
Inspection Dates:	May 20 - 23, June 17 - 20, July 29 - August 1, and August 19 - 22, 2019
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

EXECUTIVE SUMMARY

Northstar Nuclear Decommissioning Company, LLC
Vermont Yankee Nuclear Power Station
NRC Inspection Report No. 05000271/2019002

An announced VY decommissioning inspection was completed on August 22, 2019. On-site inspections were performed May 20 - 23, June 17 - 20, July 29 - August 1, and August 19 - 22, 2019. The inspections included a review of organization and management, decommissioning performance and status, occupational radiation exposure, and radiological environmental monitoring. The inspections 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."

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 (IPs) 36801, 71801, 83750, 84750]

The inspector conducted document reviews, attended safety meetings, and interviewed plant personnel to verify regulatory requirements were properly implemented with respect to the site organization, staffing and qualifications, safety, fire protection, and employee training programs. The inspector reviewed procedures and processes to evaluate Northstar NDC's ability to resolve employee safety concerns, disseminate safety information and effectively resolve identified problems. The inspector reviewed Northstar NDC's decommissioning activities to verify they were performed in a manner consistent with the Post-Shutdown Decommissioning Activities Report (PSDAR).

The inspector reviewed the status of activities related to site decommissioning to verify activities are in accordance with licensed requirements. The inspector observed decommissioning activities for removal, segmentation, and storage of the reactor vessel head and steam dryer. The inspector interviewed workers and reviewed work packages, plans, and procedures for the activities observed. The inspector observed activities, interviewed personnel and reviewed documentation related to the dismantlement and removal of the cooling towers. The inspector reviewed the radiological historical site assessment and radiological surveys to verify activities were performed in accordance with plant procedures and the regulations. The inspector also reviewed procedures for non-radiological hazardous materials removal from the project. The inspector attended select pre-job briefs and job specific briefs to assess plant staff's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors. The inspector also attended management meetings and project status meetings to ascertain the level of management involvement. The inspector reviewed the decommissioning schedule to verify the schedule was consistent with the PSDAR.

The inspector observed activities and reviewed documentation associated with occupational exposure to determine the effectiveness of site radiological programs. The inspector conducted a site tour checking and verifying radiological postings, locked high radiation doors and gates, and general housekeeping. The inspector reviewed radiation work permits, and As Low As Reasonably Achievable (ALARA) work plans to verify radiation work activities were pre-planned effectively to limit worker exposure. The

inspector observed radiation protection (RP) technicians providing job coverage for various activities on the refuel floor and performing radiological surveys.

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, performed a walkdown of ground monitoring wells 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).

b. Observations and Findings

The inspector verified that management oversight was adequate for a site in active decommissioning. The inspector determined that training programs were being appropriately implemented, and workers and their managers had verified training qualifications on a regular basis. The inspector noted that Northstar NDC was transitioning to a different software platform to record and track training. The inspector determined safety issues were reported to management daily and a monthly report out of all safety issues were reviewed by management. The inspector determined no significant changes were made to the site fire protection program. The inspector noted that site decommissioning activities were in accordance with the PSDAR.

The inspector noted the majority of the main decommissioning activities during this inspection period included the reactor vessel and vessel internals segmentation project. The inspector determined the activities were performed safely and in accordance with the work plan and plant procedures. The inspector determined the VY workforce conducted the cooling towers dismantlement and removal in a safe manner and in accordance with the regulations and plant procedures. The inspector determined that pre-job briefings were thorough and identified the significant potential hazards commensurate with the activities to be performed. The inspector verified the activities and schedule are consistent with license requirements and the site PSDAR.

The inspector determined that RP staff effectively controlled work activities, survey records were clear and complete, and RP technicians used appropriate instruments for the surveys. The inspector verified technician training and qualifications were up-to-date and that ALARA plans were performed as needed and were effective in limiting worker exposure and occupational dose was acceptable for the scope of the radiological activities performed.

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.

c. Conclusions

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

3.0 Exit Meeting Summary

On August 22, 2019, the inspector presented the inspection results to Billy Reid, Vice President, and other members of Northstar NDC staff. The inspector verified that no proprietary information was retained or documented in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
B. Reid, Vice President
C. Daniels, ISFSI Sr. Manager
N. Langub, Decommissioning Project Manager
S. Dorval, Radiation Protection Program Coordinator
B. Erickson, Radiation Control Technician
D. Giard, ISFSI Administrator
R. Haight, T&D Project Manager
S. Kehrer, Floor Work Supervisor
R. Mauthe, ISFSI Technical Specialist
B. Meyer, Radiation Protection Supervisor
A. Miller, Radiation Control Technician
S. Naeck, ISFSI Operations Manager
M. Pletcher, Radiation Protection Manager
F. Provencal, Power Block Superintendent
R. Routhier, Facility Area Manager
T. Silko, Licensing Manager
L. Smith, RP Technician
D. Toegel, Power Block Area Manager

Orano USA
D. LeFrancois, Deputy Project Manager

State of Vermont
T. Leshinskie, Nuclear Engineer

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Condition Reports
CR- 2019 -00101, 00108, 00109, 00110, 00119, 00121, 00125, 00139

Procedures and Programs
CES-PROC-DWS001, Rev. 0, Procedure for Diamond Wire Sawing at Vermont Yankee
DDFS-CY-2611, Rev. 0, Stack Effluent Sampling and Analysis
DDFS-FP-10184, Rev. 0, Vermont Yankee Nuclear Power Station, PISA Fire Protection Program
OP 3020, Rev. 65, Fire Emergency Response Procedure

VY-AD-30, Rev. 1, ISFSI Nuclear Safety Culture
VY-ES-2, Rev. 1, ISFSI Health and Safety Program
WMP-MUCWP-007, Rev.1 Loading and Unloading Waste & Miscellaneous Materials

Miscellaneous
2018 Annual Radiological Environmental Operating Report, Vermont Yankee Nuclear Power Station
2018 Radiological Effluent Release Report, Vermont Yankee Nuclear Power Station
ALARA Plan, Rev. 4, Vermont Yankee Reactor Vessel/ Reactor Vessel Internal Segmentation Project (BHI)
Health and Safety Plan, Rev 2
Certificate of Compliance 9302, Rev. 9
Northstar Group Services, Inc., Safety Policy Manual
Northstar Group Services, Inc., Health and Safety Policy
Northstar/Vermont Yankee "2019 - Safety Conscious Work Environment (SCWE) Survey"
Radiological Surveys, Logbook 190286, 190293
RWP 19-720, 19-721 Rev. 2
SCWE Survey Results Matrix
Vermont Yankee Nuclear Power Station, Fire Brigade Pre-Fire Plans, Rev 13
Vermont Yankee Nuclear Power Station, Fire Hazards Analysis, Rev. 20
Vermont Yankee Nuclear Power Station, Off-Site Dose Calculation Manual, Rev. 40
Vermont Yankee Nuclear Power Station, Radiological Historical Site Assessment
Weekly Team Integration and Progress Meeting, August 20, 2019
Worker Concerns Program Manual

Work Packages and Plans
NSVY-CWP-ORANO-000, Vermont Yankee Initial Site Work/Setup
NSVY-CWP-ORANO-001, Reactor Vessel Closure Head Segmentation and Packaging
NSVY-CWP-ORANO-002, Reactor Closure Studs Removal and Packaging
NSVY-TRWP-ORANO-003, Steam Dryer Segmentation and Packaging

LIST OF ACRONYMS USED

ADAMS	Agencywide Document and Access Management System
ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
IMC	Inspection Manual Chapter
IP	Inspection Procedure
Northstar NDC	Northstar Nuclear Decommissioning Company, LLC
NRC	U.S. Nuclear Regulatory Commission
ODCM	Off-Site Dose Calculation Manual
PSDAR	Post Shutdown Decommissioning Activities Report
REMP	Radiological Environmental Monitoring Program
RP	Radiation Protection
VY	Vermont Yankee Nuclear Power Station