



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

December 27, 2021

Mr. Bradley J. McMahon  
Site Director  
Dominion Energy Kewaunee  
Kewaunee Power Station  
N490 Highway 42  
Kewaunee, WI 54216

SUBJECT: NRC INSPECTION REPORT NOS. 05000305/2021001(DNMS);  
07200064/2021001(DNMS) – KEWAUNEE POWER STATION

Dear Mr. McMahon:

On December 6, 2021, the U.S. Nuclear Regulatory Commission (NRC) completed onsite inspection activities for June through December 2021, at the permanently shutdown Kewaunee Power Station in Kewaunee, Wisconsin. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. The enclosed report presents the results of this inspection, which were discussed with Mr. B. McMahon and other members of your staff on December 6, 2021.

During the inspection period, the NRC inspectors reviewed the following aspects of onsite activities: safety reviews, design changes and modifications; self-assessments, audits, and corrective actions; fire protection; decommissioning performance; occupational radiation exposure; radiological surveys; radioactive waste treatment, effluent, and environmental monitoring; and waste management and transportation. The inspection consisted of an examination of activities at the site as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, reviewing work activities onsite and remotely, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations.

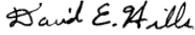
This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document

B. McMahon

2

Room in accordance with Title 10 of the Code of Federal Regulations (CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

 Signed by Hills, David  
on 12/27/21

David E. Hills, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Docket No: 50-305; 72-064  
License No: DPR-43

Enclosure:  
IR Nos. 05000305/2021001(DNMS); 07200064/2021001(DNMS)

cc w/encl: Distribution via LISTSERV®

Letter to Bradly McMahon from David Hills, dated December 27, 2021.

SUBJECT: NRC INSPECTION REPORT NOS. 05000305/2021001(DNMS);  
07200064/2021001(DNMS) – KEWAUNEE POWER STATION

DISTRIBUTION w/encl:

Bruce Watson  
Karl Sturzbecher  
David Pelton  
Joseph Nick  
Allan Barker  
Harral Logaras  
MCID Inspectors

**ADAMS Accession Number: ML21361A249**

OFFICE	RIII DNMS	C	RIII DNMS	C	RIII DNMS	C		
NAME	Blin:brt		REdwards		DHills			
DATE	12/27/21		12/27/21		12/27/21			

**OFFICIAL RECORD COPY**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION III

Docket No: 50-305; 72-064

License No: DPR-43

Report No: 05000305/2021001(DNMS);  
07200064/2021001(DNMS)

Enterprise Identifier: I-2021-001-0146  
I-2021-001-0178

Licensee: Dominion Energy Kewaunee, Inc.

Facility: Kewaunee Power Station (KPS)

Location: Kewaunee, WI

Dates: June 28, 2021, to December 6, 2021

Inspectors: Rhex Edwards, Senior Health Physicist  
Bill Lin, Health Physicist

Approved by: David E. Hills, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## **EXECUTIVE SUMMARY**

### **Kewaunee Power Station NRC Inspection Report Nos. 05000305/2021001(DNMS); 07200064/2021001(DNMS)**

The Kewaunee Power Station (KPS) is a permanently shutdown and defueled power reactor maintained in a Safe Storage (SAFSTOR) condition. This periodic safety inspection reviewed licensed activities associated with safety reviews, design changes and modifications; self-assessments, audits, and corrective actions; fire protection; decommissioning performance; occupational radiation exposure; radiological surveys; radioactive waste treatment, effluent, and environmental monitoring; and waste management and transportation.

#### **Safety Reviews, Design Changes, and Modifications**

- The licensee performed adequate safety evaluations or screenings, completed design change evaluations, and properly assessed decommissioning impacts of various work activities as required by Title 10 of the Code of Federal Regulations (CFR) 50.59 and its safety review process.

#### **Problem Identification and Resolution**

- Issues were identified by the licensee at appropriate thresholds and entered into the Corrective Action Program (CAP). Issues were screened and prioritized commensurate with safety significance. Licensee evaluations determined the significance of issues and included appropriate remedial corrective actions.

#### **Operation of an Independent Spent Fuel Storage Installation (ISFSI)**

- The licensee implemented its surveillance, maintenance, radiological monitoring, and quality assurance programs as it pertains to the ISFSI in accordance with applicable NRC requirements, the license, and the Certificates of Compliance (CoC).

#### **Fire Protection Program**

- An effective decommissioning Fire Protection Program was maintained and implemented that reasonably prevented fires; provided the capability to rapidly detect, control, and extinguish fires that could result in radiological hazards; and ensured the risk of fire-induced hazards to the public, environment, and plant personnel were minimized.

#### **Decommissioning Performance and Status Review**

- The inspectors determined that decommissioning activities were in accordance with the regulations and license requirements. Decommissioning staffing, qualifications, and training were appropriate to the requirements and current decommissioning status. The material condition of structures, systems and components supported the safe storage of spent fuel and conduct of safe decommissioning.

#### **Occupational Radiation Exposure**

- Adequate protection of worker health and safety from exposure to radiation and radioactive material was provided. Decommissioning activities were executed in general alignment with planning documents and as provided in Radiation Work Permits (RWPs) and As Low As Is

Reasonably Achievable (ALARA) reviews. Radiation surveys were performed adequately to identify the hazards present. Command and control of radiologically significant activities was executed in a manner that was safe and achieved the desired result.

### **Radioactive Waste Treatment, and Effluent and Environmental Monitoring**

- The effluent flow paths and environmental monitoring systems reviewed aligned with descriptions in the Offsite Dose Calculation Manual (ODCM) and were functional. The effluent monitors reviewed were functional, calibrated, and alarm set points conservatively set to meet regulatory requirements. Changes to the effluent and environmental monitoring program were consistent with regulatory requirements.

### **Solid Radioactive Waste Management and Transportation of Radioactive Materials**

- The licensee effectively processed, handled, stored, and transported radioactive material.

## Report Details

### Summary of Plant Activities

During this inspection period, the licensee maintained the unit in SAFSTOR conditions. No major decommissioning activities occurred during the inspection period.

#### 1.0 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors (IP 37801)

##### 1.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Whether the licensee's safety review process and procedures identified potential changes to Technical Specification (TS) resulting from proposed changes, tests, experiments, or modifications;
- Whether the licensee's safety review process committee is appropriately staffed and trained in accordance with requirements;
- Whether the licensee's training program effectively trained and assesses qualified personnel for performing safety evaluations;
- Changes to design basis documentation are updated consistent with design changes;
- Design changes or modifications were effectively evaluated to maintain safety; and
- Maintenance and/or work activities appropriately considered whether the activity resulted in a change or modification and was assessed in accordance with 10 CFR 50.59.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

##### 1.2 Observations and Findings

The inspectors did not identify any changes requiring a written evaluation since the licensee's last summary of changes letter submitted to the NRC on May 11, 2020 (ML20157A186). The inspectors reviewed the licensee's 10 CFR 50.59 evaluation and safety review process. The inspectors interviewed licensee personnel regarding the process the licensee implemented to determine whether prior NRC approval is needed for any proposed changes. The inspectors also reviewed the licensee's training program and determined that it is able train personnel for performing safety evaluations.

No findings were identified.

### 1.3 Conclusions

The licensee performed adequate safety evaluations or screenings, completed design change evaluations, and properly assessed decommissioning impacts of various work activities as required by 10 CFR 50.59 and its safety review process.

## 2.0 **Problem Identification and Resolution at Permanently Shutdown Reactors (IP 40801)**

### 2.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Effectiveness at preventing, detecting, and correcting issues;
- Identifying and evaluating potential 10 CFR Part 21, "Reporting of Defects and Non-Compliance Issues;"
- Audits and assessments evaluating the CAP and Quality Assurance Program; and
- The licensee's safety culture

### 2.2 Observations and Findings

The inspectors reviewed the licensee's CAP. The licensee was able to successfully identify and screen issues and prioritized them commensurate with the appropriate safety significance. The licensee correctly entered the issues into the CAP with appropriate corrective actions. The inspectors reviewed three months of CAP entries and evaluated the corrective actions for each one. The inspectors reviewed several CAP entries for follow-up. For example, the inspectors followed up on Condition Report (CR) 2213. CR 2213 documented that the licensee discovered milky white water in the storm drain of the training parking lot. The inspectors reviewed the licensee's actions and interviewed licensee management for the process of determining if the milky white water had any radioactive materials. After discussing with the licensee, the inspectors determined that the licensee had performed the appropriate follow-up actions. In addition, the inspectors also followed up with CR 2160 and CR 2084. In each of these CRs, the inspectors reviewed the licensee's corrective actions, interviewed the appropriate personnel, and determined the licensee's corrective actions were appropriate. The inspectors reviewed the licensee's 10 CFR Part 21 reporting requirements, and no issues were identified.

The inspectors also determined that the licensee was performing the appropriate audits and assessment in accordance with the licensee's Quality Assurance Program Plan (QAPP) by interviewing licensee personnel and review of licensee's QAPP, audit and assessment records, and the applicable procedures. The inspectors reviewed the licensee's audit criteria for their environmental sampling, wastewater discharge, and Thermoluminescent Dosimeter (TLD) changeouts. The documents that the inspectors reviewed were performed in accordance with licensee's approved procedures.

The inspectors also evaluated the licensee's safety culture. Specifically, the inspectors interviewed available licensee personnel that were onsite during the week of June 21 to assess licensee management's approach in resolving safety issues.

No findings were identified.

### 2.3 Conclusions

Issues were identified by the licensee at appropriate thresholds and entered into the CAP. Issues were screened and prioritized commensurate with safety significance. Licensee evaluations determined the significance of issues and included appropriate remedial corrective actions.

## 3.0 **Operation of an Independent Spent Fuel Storage Installation (IP 60855)**

### 3.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Whether changes were made, and evaluations performed, in accordance with 10 CFR 50.59 and 10 CFR 72.48;
- The performance of monitoring and surveillance activities in accordance with approved procedures; and
- The effectiveness of the Quality Assurance Program and oversight of ISFSI activities.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

### 3.2 Observations and Findings

The inspectors observed that the licensee was evaluating changes to the facility, programs, and procedures since the last inspection in accordance with 10 CFR 50.59, 10 CFR 72.48, and 10 CFR 72.212. Changes were consistent with the license and CoCs, and did not reduce the effectiveness of the applicable programs.

The licensee performed routine surveys and environmental radiological monitoring as required for the ISFSI. The survey results indicated that radiological conditions were in accordance with the 10 CFR 72.104 limits.

The inspectors conducted a walkdown of the ISFSI pad on November 10, 2021. The inspectors evaluated the structural condition of the pads, storage casks, and storage modules for the NAC MAGNASTOR and TN NUHOMS systems in service. Additionally, the inspectors performed independent radiological surveys to verify the licensee's survey results. The inspectors remotely observed the licensee's biennial emergency preparedness exercise on August 17, 2021.

A review of audits and corrective action reports written since the last ISFSI inspection indicated that the licensee was identifying and correcting conditions adverse to quality.

No findings were identified.

### 3.3 Conclusions

The licensee implemented its surveillance, maintenance, radiological monitoring, and quality assurance programs as it pertains to the ISFSI in accordance with applicable NRC requirements, the license, and the CoCs.

## 4.0 **Fire Protection Program at Permanently Shutdown Reactors (IP 64704)**

### 4.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Fire protection program met TSS, Post Shutdown Decommissioning Analysis Report (PSDAR), and fire hazard analyses requirements;
- Changes to the Fire Protection Program did not reduce the effectiveness of the program;
- Assessments were being performed in accordance with 10 CFR 50.48(f)(2);
- Fire protection detection and suppression systems were effectively maintained, surveillances were performed, and systems were capable of performing their intended function;
- Fire barriers were effectively maintained;
- Firefighting equipment was properly inventoried, inspected, tested, and maintained;
- Administrative controls were in place to minimize the occurrence of a fire; and
- Staffing and training requirements were consistent with the Fire Protection Program and Emergency Plan.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

### 4.2 Observations and Findings

There were no changes made to the Fire Protection Program in 2021. The inspectors reviewed the last 10 CFR 50.48(f)(2) assessment performed on November 2, 2021. No findings or recommendations were identified during the audit; however, there were six condition reports generated by the licensee for additional follow-up through the CAP. On November 10, 2021, the inspectors walked down the following pre-fire plan areas:

- Auxiliary Building 642' Hot Chemistry Lab and Shield Building Filter Assembly Area
- Auxiliary Building 626' Control Room

- Auxiliary Building 586' Waste Handling Area

During the walkdowns, the inspectors confirmed that the detection and suppression equipment was located where required, was being properly maintained, and could perform its intended function. There were no fire barrier impairments impacting the SAFSTOR condition.

The inspectors reviewed the scenario and critique for a drill performed with the Kewaunee Fire Department on September 8, 2020. The scenario was found to be realistic and effective training for the licensee and members of the Kewaunee Fire Department. Similarly, the drill demonstrated the ability of the Kewaunee Fire Department to integrate with the facility to successfully combat potential fires.

No findings were identified.

4.3 Conclusions

An effective decommissioning Fire Protection Program was maintained and implemented that reasonably prevented fires; provided the capability to rapidly detect, control, and extinguish fires that could result in radiological hazards; and ensured the risk of fire-induced hazards to the public, environment, and plant personnel were minimized.

**5.0 Decommissioning Performance and Status Review (IP 71801)**

5.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Whether maintenance was conducted at an appropriate frequency;
- Updates to the Decommissioning Safety Analysis Report (DSAR) were made consistent with 10 CFR 50.71
- Records important to decommissioning were kept consistent with 10 CFR 50.75(g)
- Commitments and requirements in the TSs, PSDAR, ODCM, or Emergency Plan were effective and being met;
- Appropriate administrative and/or engineering controls were identified and implemented in work plans;
- Organization and staffing were appropriately adjusted for changes in the status of decommissioning; and
- Changes to the decommissioning schedule or costs were made consistent with the requirements in 10 CFR 50.82(a)(7).

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

## 5.2 Observations and Findings

The inspectors performed walkdowns of the plant on June 23 and November 10, 2021. The inspectors observed that all required plant equipment and postings were maintained and in working condition. The inspectors also interviewed licensee personnel and discussed the maintenance of the effluent monitoring system and radiation liquid discharge lines. The licensee performed general maintenance activities in accordance with approved procedures.

The last update provided to the NRC regarding the DSAR was made on November 19, 2020 (Revision 1, ML20324A722), and was timely submitted in accordance with 10 CFR 50.71.

The licensee was conservatively adding entries to its 50.75(g) records that are important for decommissioning planning. There was one new entry in 2021; however, the entry was made following a routine surveillance of containment performed in 2020 (regarding CR 1997; Resin During Containment Inspection; 01/07/2020). This CR was previously reviewed by the inspectors as documented in NRC Inspection Report No. 05000305/2020001 (ML21005A419). The inspectors also reviewed past entries to ensure they were retained and contained sufficient detail. The additional entries reviewed included:

- An EPRI demonstration of an autonomous site characterization vehicle that scanned portions of the Auxiliary Building 606' elevation and an outdoor scan of the southwest sludge spreading area in the fall of 2019.
- A 2014 record of water leaking out of a shipping container containing a Reactor Coolant Pump. The removal of the pump was reviewed in NRC Inspection Report No. 05000305/2014004 (ML15037A503).

Since the site hasn't started any active decommissioning activities, the site hasn't implemented any additional engineering controls in any of its daily housekeeping and non-decommissioning activities. On May 10, 2021, the licensee submitted to the NRC an application to transfer the license to EnergySolutions for the purposes of decommissioning (ML21131A141). The inspectors discussed with the licensee the staffing plans for the upcoming decommissioning activities. The licensee informed the NRC that it is currently working with EnergySolutions and identifying the personnel needed for decommissioning of KPS. EnergySolutions and Kewaunee site management are holding monthly decommissioning meetings and identifying the procedures, licensing requirements, scheduling, financial assurance reporting requirements, and radiation survey instrument needs.

The Financial Assessment Branch in the NRC Office of Nuclear Materials Safety and Safeguards completed its initial review of the licensee's decommissioning funding financial allocation control process.

No findings were identified.

## 5.3 Conclusions

The inspectors determined that decommissioning activities were in accordance with the regulations and license requirements. Decommissioning staffing, qualifications, and training were appropriate to the requirements and current decommissioning status. The

material condition of structures, systems and components supported the safe storage of spent fuel and conduct of safe decommissioning.

## **6.0 Occupational Radiation Exposure at Permanently Shutdown Reactors (IP 83750)**

### **6.1 Inspection Scope**

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Changes made to organization, personnel, facilities, instrumentation, equipment, programs that impact occupational radiation protection (RP);
- Training and qualifications of members of the RP organization;
- Radiological hazards and worker protection in work activities;
- Planning identified appropriate dose reduction techniques, defined reasonable dose goals, and RP hold points;
- Radiological controls, postings, and material conditions inside the radiological control area;
- Contamination monitoring including release of radioactive materials from controlled areas;
- Accuracy and functionality of radiation monitoring instruments;
- Area radiation monitors and continuous air monitors are appropriately positioned;
- Temporary ventilation systems are correctly configured;
- The characterization of the radiation type and energies were appropriate to the surveys and work practices; and staffing, posting, radiological controls, and changes met regulatory requirements.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

### **6.2 Observations and Findings**

Currently, there are no changes to the organization staffing and instrumentation that will impact RP. However, the inspectors discussed with the licensee the site transition once active decommission begins at Kewaunee. Specifically, the inspectors interviewed licensee management about the potential organization staffing plan, RP procedures, and instrumentation requirements that will be implemented onsite. The current Kewaunee management staff indicated to the NRC inspectors that staffing, instrumentation plans, and site RP procedure plans are being actively discussed with EnergySolutions to ensure that the site will have the necessary staffing, instrumentation, and RP procedures once active decommissioning begins. The inspectors also reviewed the licensee's training records and determined that all personnel were appropriately trained, and everything was documented in accordance with the approved procedures.

The inspectors reviewed the licensee's radiation and contamination surveys, air samples, and source inventory. The licensee performed radiation and contamination surveys, air sampling, and source inventory in accordance with approved procedures and radiation survey instruments. The inspectors verified and confirmed that for each type of survey the licensee performed, they used the appropriate survey instrument to perform these surveys and verified that the licensee is updating their source term that is currently onsite due to source decay. The inspectors also observed the licensee perform source checks of radiological survey instrumentation and portal monitors. The licensee performed these source check in accordance with approved licensee procedures. The inspectors interviewed licensee personnel regarding the frequency of these source checks and the licensee's process and procedure on how everything was documented. The licensee personnel were knowledgeable regarding the process and procedures. The inspectors also verified that the site currently doesn't have any temporary ventilation system in services.

The inspectors also performed a walkdown of the plant. The inspectors observed that general housekeeping was maintained and that all signs within the plant were appropriately posted and legible. The inspectors also observed that all radioactive material was properly bagged, tagged, and controlled.

During this inspection period, the inspectors followed the licensee's efforts to locate and remove any unnecessary radiological sources installed in the remaining onsite radiological instruments. As of December 6, 2021, all sources were removed and accounted for.

No findings were identified.

### 6.3 Conclusions

Adequate protection of worker health and safety from exposure to radiation and radioactive material was provided. Decommissioning activities were executed in general alignment with planning documents and as provided in RWPs and ALARA reviews. Radiation surveys were performed adequately to identify the hazards present. Command and control of radiologically significant activities was executed in a manner that was safe and achieved the desired result.

## 7.0 **Radioactive Waste Treatment, and Effluent and Environmental Monitoring (IP 84750)**

### 7.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Changes made to the ODCM or liquid, gaseous, and solid radwaste system design and operation were within the licensing basis and regulations;
- Effluent monitoring ventilation and discharge system configurations, flow paths, and operations were consistent with the licensing basis and procedures;
- Effluent monitors were calibrated;

- Radioactive liquid and gaseous waste discharge permits projected doses to members of the public that were based on representative samples in the discharge pathway and were within 10 CFR Part 50, Appendix I, and TS limits.
- The annual effluent release report was submitted as required, and any anomalous results, unexpected trends, or abnormal releases were identified and entered into the CAP;
- Environmental monitoring equipment was properly located, calibrated and maintained, and environmental samples were adequately collected;
- Whether the Groundwater Protection Initiative program was implemented as intended;
- The licensee's annual radiological environmental monitoring report was submitted as required, and any anomalous results, unexpected trends, or abnormal environmental impacts were identified and entered into the CAP;
- Whether the licensee's vendor laboratory analyzed environmental samples under an approved quality control program and the inter-laboratory comparison program was adequate; and
- Changes made to the environmental program.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

## 7.2 Observations and Findings

The inspectors reviewed the licensee's ODCM, the licensee effluent monitoring and calibration procedures, the licensee's Annual Radiological Environmental Operating Report (AREOR) submitted on May 10, 2021 (ML21175A239), the Annual Radioactive Effluent Release Report submitted on April 21, 2021 (ML21175A239), and interviewed licensee personnel to ensure that the licensee is implementing the effluent and environmental program in accordance with the applicable procedures. There were no anomalous results in the AREOR, the effluent release reports, and any of the ground water well results. The inspectors also walked down the licensee's effluent flow paths and environmental monitoring system to ensure that it aligns with the descriptions in the ODCM. There were no liquid discharges made in 2021. The inspectors reviewed the licensee's effluent monitors to ensure that they were functional, calibrated, and the alarm set points were set in accordance with regulatory requirements. The inspectors also performed a walkdown and observed the licensee's exchange of area monitoring TLDs.

The inspectors reviewed the licensee's Radiological Environmental Monitoring Program (REMP) and the associated contractor procedures to ensure that the licensee's obtained and analyzed the appropriate environmental samples in accordance with the applicable regulatory requirements and REMP program. The inspectors also reviewed the licensee's quality control program and inter-laboratory comparison program. The summary and result of the inter-laboratory comparison program is in the licensee's submitted AREOR. The inspector verified that the licensee's vendor performed the

environmental sampling analysis and followed and evaluated its results in accordance with their approval quality control program. There were no changes to the environmental program.

No findings were identified.

### 7.3 Conclusions

The effluent flow paths and environmental monitoring systems reviewed aligned with descriptions in the ODCM and were functional. The effluent monitors reviewed were functional, calibrated, and alarm set points conservatively set to meet regulatory requirements. Changes to the effluent and environmental monitoring program were consistent with regulatory requirements.

## 8.0 **Solid Radioactive Waste Management and Transportation of Radioactive Materials (IP 86750)**

### 8.1 Inspection Scope

The inspectors performed walkdowns, reviewed documents, and interviewed plant personnel to assess the licensee's performance in the following areas:

- Radioactive waste storage areas are appropriately controlled, labeled, posted and secured against unauthorized removal;
- Containers of radioactive material are inventoried, and their material condition is monitored;
- Sealed sources are accounted for and are appropriately leak tested;
- Waste processing systems were configured and operated consistent with the DSAR, ODCM, and Process Control Program;
- Temporary waste processing systems were adequately implemented;
- Shippers of radioactive material were adequately trained and met TS, 10 CFR 71.5 and Department of Transportation (DOT) 49 CFR Part 172, Subpart H, requirements;
- Changes in organization, personnel, facilities, equipment, programs, and procedures affecting waste management and transportation of radioactive materials;
- Shipments of radioactive material were appropriately surveyed as well as marked, labeled, and placarded consistent with the shipping documentation; and
- Shipments were appropriately characterized, classified, and prepared in accordance with procedures.

The inspectors verified that when issues were identified, licensee personnel appropriately documented the issue in the CAP.

## 8.2 Observations and Findings

During a plant walkdown on June 23, 2021, the inspectors verified radioactive waste was appropriately controlled, labeled, posted, and secured against unauthorized removal. The inspectors also reviewed the licensee's sealed source inventories and the appropriate leak tests. The licensee performed the inventory and leak test in accordance with the approved procedures. The inspectors also walked down the plant and randomly selected a sealed source and its location to ensure that the inventory was accurate. All sources selected were accounted for.

The inspectors interviewed the licensee management regarding the waste processing system. Licensee management and the plant maintenance staff walked down the processing system and verified that proper housekeeping was maintained on the system, and that the system was configured in accordance with the applicable procedures. The licensee management also indicated that they had not processed any waste during the first half of 2021. Discussions with EnergySolutions are ongoing as to what type of waste processing system will be implemented once active decommissioning starts. The inspectors verified with the licensee that no temporary waste processing systems were currently in service and that there were no changes identified in the organization, personnel, and facilities regarding any waste processing and shipping.

The inspectors reviewed the licensee's radioactive material shipping papers. The inspectors interviewed the licensee personnel and reviewed the licensee process for generating radioactive material documents. The shipments that the inspectors reviewed were all appropriately surveyed and characterized, classified, and prepared in accordance with NRC and DOT regulatory requirements and licensee's approved procedures. The inspectors also reviewed the licensee's training documentation to ensure that all licensee personnel performing radioactive material shipping activities had the appropriate training.

No findings were identified.

## 8.3 Conclusions

The licensee effectively processed, handled, stored, and transported radioactive material.

## 9.0 **Exit Meeting**

The inspectors presented the results of the inspection to Mr. B. McMahon and other members of the KPS staff at an exit meeting on December 6, 2021. The licensee acknowledged the results presented and did not identify any of the information discussed as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### PARTIAL LIST OF PERSONS CONTACTED

B. McMahon, Site Director  
D. Shannon, Radiation and Chemistry Manager  
T. Olson, Operations and Maintenance Manager  
W. Zipp, Nuclear Engineering and Technical Support Manager

### INSPECTION PROCEDURES (IPs) USED

IP 37801 Safety Reviews, Design Changes, and Modifications at Permanently Shutdown Reactors  
IP 40801 Self-Assessment, Auditing, and Corrective Action at Permanently Shutdown Reactors  
IP 64704 Fire Protection Program at Permanently Shutdown Reactors  
IP 71801 Decommissioning Performance and Status Reviews at Permanently Shutdown Plants  
IP 83750 Occupational Radiation Exposure  
IP 84750 Radioactive Waste Treatment, and Effluent and Environmental Monitoring  
IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

### ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	<u>Type</u>	<u>Summary</u>
---------------	-------------	----------------

None

<u>Closed</u>	<u>Type</u>	<u>Summary</u>
---------------	-------------	----------------

None

### PARTIAL LIST OF DOCUMENTS REVIEWED

The following is a partial 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.

- 10 CFR 50.75(g) entry; CR 1997; 01/11/2021
- 10 CFR 50.75(g) entry; EPRI Demonstration of an Autonomous Site Characterization Vehicle - 20523; 08/17/2020
- 10 CFR 50.75(g) entry; Kroil and Water From Bolt Holes on A RCP Pump Flange; 10/13/2014
- Fire Protection Program Analysis; Revision 15
- Kewaunee Power Station ISFSI Fire Hazards Analysis; Revision 4
- Fire Protection Services Agreement; 08/08/2019
- Drill No. 2020-01; Fire Drill; 09/08/2020

- Audit 19-08; KPS Training/Qualifications, M&TE, Corrective Action, Independent Review, ISFSI TS and Fire Protection; 11/12/2019
- Audit 21-09: KPS Training/Qualifications, M&TE, Corrective Action, Independent Review, ISFSI TS and Fire Protection; 11/2/2021
- Fire Protection Program Plan; Revision 19
- FPEE-074; Evaluation of the Fire Protection Program for SAFSTOR III Long Term Dormancy; Revision 3
- SA-KW-FPP-018; Pre-Fire Plan; Revision 5
- PFP-2; ISFSI Protected Area; Revision 5
- PFP-25; Revision 6
- PFP-26; Revision 6
- PFP-27; Revision 5
- 50.59/72.48 Screen; SNL Test Procedure, SANDPROC-KEW0521; 05/05/2021
- Audit 19-09; Nuclear Fuel Management and Procurement, ISFSI; 12/05/2019
- Audit 20-06; Radiation Protection, Process Control Program, and Chemistry; 09/16/2020
- Auxiliary Building Monthly Radiation Survey; 06/09/2021
- Semi-Annual Radiation Surveys; 04/26/2021
- Semi-Annual Contamination Surveys; 04/26/2021
- Weekly Contamination Surveys and Air Samples; 04/06/2021
- Weekly Contamination Surveys; 06/02/2021
- Monthly Contamination Surveys; 04/21/2021
- CR 2173; NAC Identified an Error in Input; 03/03/2021
- CR 2157; NAC Cask #19 RTD PPCS Point T7090A; 12/23/2020
- CR 2037; Lakeshore Erosion has Potential to Impact VBS; 05/13/2021
- CR 2154; VCC 9 Temperature Indication Point T7049A Erratic; 12/17/2020
- CR 2147; VCC 9 Temperature Indication PPCS Point T7049A Erratic; 12/7/2020
- CR 2146; VCC 9 Temperature Indication (T7049A) High; 11/23/2020
- CR 2160; Evaluate Whether RP-KW-009-031 Radioactive Materials Shipping Should be Revised; 1/04/2021
- CR 2213; Milky White Water Found in Training Water Parking Lot Storm Drain; 07/15/2021
- CR 2223; 2021 EP Exercise Lessons Learned and Enhancements; 08/18/2021
- OP-KW-OSP-MI-002; Daily Instrument Channel Checks; Revision 15
- 2020 Annual Radioactive Effluent Release Report; 04/21/2021
- 2020 Annual Radiological Environmental Operating Report; 05/10/2021
- SSKW2020-0026; VBS Repair Work East of ISFSI; 12/2/2020
- SSKW2020-00029; Repair RTD 14268 (PPCS Point T7049A) on Cask 9 (CR2147 and CR2146); 01/05/2021
- Completed OP-KW-OSP-MI-002; Daily Instrument Channel Check Data Sheet; 12/7/2020
- Completed OP-KW-OSP-MI-002; Daily Instrument Channel Check Data Sheet; 12/17/2020
- WO RE106942; PM53-074 Annual Inspection-Vertical Concrete Cask (VCC); 08/16/2021
- Kewaunee Power Station Position Paper – Employee Labor and Non-Labor Reporting During the SAFSTOR III Dormancy Period; 12/16/2020
- Dominion Generation Kewaunee Power Station Exercise; 08/12/2021
- EP-KW-EIP-001; Emergency Plan Implementing Procedure; Revision 3
- EP-KW-EIP-002; Emergency Notifications; Revision 4
- ISFSI-Only Emergency Action Level Basis Document; Revision 0
- RP-KW-109; Radiological Survey Program; Revision 0
- RP-KW-220; Radiological Survey Locations and Schedule; 01/09/2019
- RP-KW-503; Radiological Decommissioning Records – 10 CFR 50.75(g) Program; Revision 1
- 2020 and 2021 Radiological Material Shipping Papers

## LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access and Management System
ALARA	As Low As Is Reasonably Achievable
AREOR	Annual Radiological Environmental Operating Report
CAP	Corrective Action Program
CoC	Certificate of Compliance
CR	Condition Report
CFR	Code of Federal Regulations
DNMS	Division of Nuclear Materials Safety
DOT	U.S. Department of Transportation
DSAR	Decommissioning Safety Analysis Report
IP	Inspection Procedure
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
KPS	Kewaunee Power Station
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PSDAR	Post Shutdown Activities Report
REMP	Radiological Environmental Monitoring Program
RP	Radiation Protection
RWP	Radiation Work Permit
SAFSTOR	Safe Storage
TLD	Thermoluminescent Dosimeter
TS	Technical Specification