



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

August 13, 2015

Mr. David A. Heacock
President and Chief Nuclear Officer
Dominion Energy Kewaunee, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: NRC INSPECTION REPORT NO. 05000305/2015002(DNMS)
KEWAUNEE POWER STATION

Dear Mr. Heacock:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed onsite inspection activities for April through June 2015, at the permanently shut down Kewaunee Power Station (KPS) 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. S. Yuen and other members of your staff on July 28, 2015.

During the inspection period, the NRC inspectors reviewed the following aspects of onsite activities: self-assessments, audits and corrective actions; maintenance and surveillance; decommissioning performance; and radioactive waste treatment, effluent, and environmental monitoring. 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, observation of work activities, and interviews with personnel.

Based on the results of this inspection, no violations of NRC requirements were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (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's Public Document Room or from the Publicly

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Sincerely,

/RA/

Robert J. Orlikowski, Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Docket No. 50-305
License No. DPR-43

Enclosure:
IR 05000305/2015002(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Docket No: 050-00305

License No: DPR-43

Report No: 05000305/2015002(DNMS)

Licensee: Dominion Energy Kewaunee, Inc.,

Facility: Kewaunee Power Station (KPS)

Location: Kewaunee, Wisconsin

Dates: April 1, 2015, through June 30, 2015

Inspectors: Rhex A. Edwards, Reactor Inspector (DNMS/MCID)

Approved by: Robert Orlikowski, Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Kewaunee Power Station NRC Inspection Report 05000305/2015002

Kewaunee Power Station (KPS) operated at full power until May 7, 2013, when Kewaunee shutdown and permanently ceased power operation. On May 14, 2013, Kewaunee certified the permanent removal of fuel from the reactor vessel (ADAMS Accession No. ML13135A209). On May 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) notified Kewaunee that the Operating Reactor Assessment Program had ceased and that implementation of the Decommissioning Power Reactor Inspection Program would begin on June 1, 2013 (ADAMS Accession No. ML13151A375).

Currently, the KPS is a permanently shut-down and defueled power reactor facility that was maintained in a Safe Storage of Spent Fuel (SAFSTOR) condition with spent fuel in wet storage and at an Independent Spent Fuel Storage Installation.

Self-Assessment, Auditing, and Corrective Action

- 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. (Section 1.0)

Maintenance and Surveillance

- Maintenance and surveillance for structures, systems, and components were adequate and resulted in the safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment. Workers followed work plans, surveillance procedures, and industrial safety protocols; and were aware of job controls specified in work instructions. (Section 2.0)

Decommissioning Performance and Status Review

- The inspectors determined that the licensee conducted decommissioning activities in accordance with the regulations and license requirements. The inspectors also verified that the licensee activities to transition to a SAFSTOR condition were in accordance with Technical Specifications (TS), the Updated Safety Analysis Report (USAR) and the Post Shutdown Decommissioning Activities Report (PSDAR). Finally, the inspectors conducted plant tours to verify that the material condition of structures, systems, and components supported the safe storage of spent fuel and conduct of safe decommissioning. (Section 3.0)

Radioactive Waste Treatment, and Effluent and Environmental Monitoring

- The licensee maintained effluent monitoring and control systems as provided in the General Design Criteria. The effluent flow paths and monitoring systems reviewed were functional and aligned with descriptions in the USAR and Offsite Dose Calculation Manual (ODCM). Annual Radioactive Effluent Reports were submitted on time and satisfied ODCM and Technical Specification (TS) informational requirements. (Section 4.0)

Report Details

Summary of Plant Activities

During the inspection period, the licensee maintained the unit in a SAFSTOR condition. No major onsite decommissioning activities occurred during the inspection period.

1.0 Self-Assessments, Audits, and Corrective Actions (IP 40801)

1.1 Inspection Scope

The inspectors conducted document reviews and interviews with plant personnel to assess the licensee's performance as it related to the following areas:

- Administrative procedures prescribed actions for the identification, evaluation and resolution of problems;
- License procedures prescribed thresholds for the performance of self-assessments, audits, and surveillances;
- License management reviewed self-assessments, audits, and corrective actions to remain knowledgeable of plant performance;
- Self-assessments were conducted with technically qualified personnel and sufficient independence from the licensee;
- Issues or problems were identified and corrected in accordance with the licensee's CAP through a sampling of select issues;
- Quality assurance personnel audited changes in the status of decommissioning and licensee organization; and
- Licensee management observed maintenance and surveillance activities, operations evolutions, and training.

The inspectors reviewed CAP documents on a routine basis to determine: if a sufficiently low threshold for problem identification existed; the quality of follow-up evaluations including extent-of-condition; if the licensee assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue. Issues that were repetitive and those with the potential for safety or regulatory consequence were evaluated further to assess apparent and/or common cause and significance. The inspectors also observed a sample of licensee corrective action review team and corrective action review board meetings to ascertain if the CAP documents were implemented appropriately.

1.2 Observations and Findings

The inspectors determined that issues were identified by the licensee at an appropriate threshold within various functional areas of the site and entered into the CAP. Issues were effectively screened, prioritized and evaluated commensurate with safety significance. The scope and depth of evaluations were adequate in that the evaluations reviewed addressed the significance of issues and assigned an appropriate course of remedial action.

The inspectors verified that self-assessments conducted during the inspection period were performed with technically qualified personnel; and when appropriate, utilized personnel independent of the licensee. Finally, the inspectors verified that quality assurance personnel continued to audit changes implemented at the plant.

No findings were identified.

1.3 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.

2.0 **MAINTENANCE AND SURVEILLANCE (IP 62801)**

2.1 Inspection Scope

The inspectors conducted plant tours, interviews, and directly observed maintenance and surveillance throughout the inspection period to evaluate the effectiveness of the licensee in maintaining structures, systems, and components important to the safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment.

During walkdowns, the inspectors evaluated material condition and housekeeping, assessed area radiological conditions, radiological access control and associated posting/labeling, and reviewed the overall condition of systems, structures, and components that support decommissioning. Independent radiation measurements were periodically made by the inspectors in areas toured to determine if those areas were controlled properly and posted as prescribed in 10 CFR Part 20.

The inspectors specifically reviewed and observed the licensee perform a Tornado Missile Hazard Inspection of the on-site switch yard. These activities included reviews of preventive maintenance schedules, routine walkdowns of the equipment, and observation/review of surveillance activities.

2.2 Observations and Findings

The inspectors noted that throughout the inspection period housekeeping remained satisfactory and changing radiological conditions were addressed in a prompt and timely manner by licensee staff.

The inspectors noted that the licensee appropriately prioritized corrective maintenance on the remaining systems required for permanent cessation of operations. The inspectors also verified that equipment, which remained available following the shutdown, had the appropriate preventive maintenance schedules established with input from equipment vendors. Finally, the inspectors verified that when equipment issues occurred, the licensee staff implemented the appropriate troubleshooting procedures to identify and correct the equipment deficiency identified.

No findings were identified.

2.3 Conclusions

Plant material condition and housekeeping were adequate and had not adversely impacted safe decommissioning or transition to SAFSTOR. Workers followed work plans, surveillance procedures, and industrial safety protocols and were aware of job controls specified in work instructions.

3.0 **Decommissioning Performance and status reviews (IP 71801)**

3.1 Inspection Scope

The inspectors conducted document reviews, observations, and interviews with plant personnel to assess the licensee's performance as it related to the following areas:

- Status of decommissioning through the observation of licensee meetings that planned, reviewed, assessed and scheduled the conduct of facility decommissioning;
- Whether licensee activities were in accordance with license conditions and docketed commitments, as well as, within the bounds of the docketed post shutdown decommissioning activity report;
- Operability and functionality of systems necessary for safe decommissioning was assessed through control room and plant walkdowns including the following systems: radioactive effluent monitoring, spent fuel pool cooling, level and temperature control, radiation protection monitors and alarms, equipment important to emergency preparedness, and equipment that provided normal and standby electrical power;
- Operator logs and data taking for normal facility operations, surveillances, maintenance and verification that data out of specification was appropriately dispositioned and resolved;
- Assessed ongoing in-plant work activities to ensure work activities were evaluated for risk in accordance with 10 CFR 50.65(a)(4), operational work risk assessments were performed, and operations shift turnovers appropriately communicated pertinent plant status;
- Verified appropriate plant staffing was maintained and that appropriate management oversight of licensee and supplemental activities were performed;

- Verified pre-job briefs were conducted for facility operations including maintenance, surveillance, operations, and decommissioning activities;
- Performed plant tours to assess field conditions and decommissioning abandonment activities;
- Observed in progress field work to verify activities were conducted in accordance with approved work instructions and workers were knowledgeable of tasks;
- Plant material condition of structures, systems, and components was maintained at a high level to ensure safe storage of spent fuel;
- Reviewed updated fire plan and procedures to ensure the current status of the facility was reflected;
- Verified the storage of combustibles and flammables were in accordance with plant procedures and the fire plan for the subject location;
- Verified firefighting equipment and stations were properly maintained, inventoried and readied for use; and
- Verified that the installed fire detection and suppression systems were effectively maintained, surveillances performed and were capable of performing their intended function.

3.2 Observations and Findings

The inspectors determined through the plant tours and activities observed that the licensee conducted activities in accordance with the regulatory requirements and plant procedures.

No findings were identified.

3.3 Conclusions

The inspectors determined that the licensee conducted decommissioning activities in accordance with the regulations and license requirements. The inspectors also verified that the licensee work force activities to transition to a SAFSTOR condition were in accordance with TSs, the USAR and the PSDAR. Finally, the inspectors conducted plant tours to verify that the material condition of structures, systems and components supported the safe storage of spent fuel and conduct of safe decommissioning.

4.0 **RADIOACTIVE WASTE TREATMENT, AND EFFLUENT AND ENVIRONMENTAL MONITORING (IP 84750)**

4.1 Inspection Scope

The inspectors conducted document reviews and interviews with plant personnel to assess the licensee's performance as it related to the following areas:

- Determined whether radioactive waste treatment systems were maintained and operated to keep offsite doses ALARA;
- Determined whether the licensee effectively controlled, monitored, and quantified releases of radioactive materials in liquid, gaseous, and particulate forms to the environment; and
- Determined whether the radiological environmental monitoring programs were effectively implemented to ensure effluent releases were being adequately performed as required to minimize public dose.

As part of the inspection, the inspectors verified that licensee programs and procedures were appropriately implemented by licensee staff. The inspectors verified that when issues were identified, licensee personnel appropriately documented the issues in the corrective action program and adequate corrective actions were taken. In addition, the inspectors performed walkdowns of the equipment and piping associated with liquid waste discharges.

4.2 Observations and Findings

The inspectors noted during walkdowns of the above radioactive effluent equipment and pathways that they were configured as described in the USAR and Offsite Dose Calculation Manual (ODCM) and were in good material condition. In addition, the inspectors noted that during a review of past Annual Radiological Effluent Release Reports, no anomalous results, unexpected trends or abnormal releases were identified.

No findings of significance were identified.

4.3 Conclusions

The licensee maintained effluent monitoring and control systems as provided in the General Design Criteria. The effluent flow paths and monitoring systems reviewed were functional and aligned with descriptions in the USAR and ODCM. Annual Radioactive Effluent Reports were timely submitted and satisfied ODCM and Technical Specification informational requirements.

5.0 **Exit Meeting**

The inspectors presented the results of the inspection to Mr. S. Yuen and other members of your staff at an onsite exit meeting on July 28, 2015. 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

S. Yuen, Plant Manager
T. Olson, Technical Support Manager
B. McMahon, Operations Manager
M. Hale, Radiation Protection Manager
J. Helbing, Maintenance Manager
R. Repshas, Licensing Manager
J. Gadzala, Licensing Engineer

INSPECTION PROCEDURES (IPs) USED

IP 40801	Self-Assessment, Auditing and Corrective Action at Permanently Shutdown Reactors
IP 62801	Maintenance and Surveillance at Permanently Shutdown Reactors
IP 71801	Decommissioning Performance and Status Reviews at Permanently Shutdown Plants
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring

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		

<u>Discussed</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 or 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.

- GMP-172; Tornado Missile Hazard Inspection; Revision 11
- CR577573; Turbine Crane Aux Hoist Low Megger Reading; April 23, 2015
- CR576359; Evaluated Ability to Close Breaker 1-511 on a Loss of Power; April 9, 2015
- CR575890; NRC Security Violation Received March 31, 2015; March 31, 2015
- CR576216; Door 440 and Door 446, TSC Battery Room Doors Fire Door Classification; April 6, 2015
- CR576095; Work Order Needed to Remove AFW-202A from Plant; April 6, 2015
- CR574945; TSC Radiator Cooling Fan Cracked Hub; March 23, 2015
- CR579963; Undeclared Prohibited Item Found During Vehicle Search; May 18, 2015
- CR580169; Issues Found When Preparing the 2013 Decom Trust Secondary Invoice; May 19, 2015
- CR580942; Potential Design Misapplication of the Offset Fuel Handling Tool Winch; May 27, 2015

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access and Management System
ALARA	As Low As Reasonably Achievable
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DNMS	Division of Nuclear Materials Safety
IR	Inspection Report
KPS	Kewaunee Power Station
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PSDAR	Post Shutdown Activities Report
SAFSTOR	Safe Storage of Spent Fuel
TS	Technical Specification
USAR	Updated Safety Analysis Report