



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

January 14, 2015

Mr. William L. Berg
President and Chief Executive Officer
Dairyland Power Cooperative
3200 East Avenue South
P.O. Box 817
La Crosse, WI 54602-0817

**SUBJECT: NRC INSPECTION REPORT 05000409/2013-08 (DNMS) - LA CROSSE
BOILING WATER REACTOR (LACBWR) DECOMMISSIONING INSPECTION**

Dear Mr. Berg:

On December 17, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the La Crosse Boiling Water Reactor (LACBWR) facility. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. At the conclusion of the inspection on December 17, 2014, the NRC inspector discussed the results with members of your staff.

The inspection consisted of an examination of activities at the facility as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection included facility management and control and radiological safety. Within these areas, the inspection consisted of a selective examination of procedures and representative records, field observations of activities in progress, and interviews with personnel.

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

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 and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Document Access and Management System (ADAMS), accessible from the NRC Web site 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.

W. Berg

-2-

We will gladly discuss any questions you have concerning this inspection. If you have any questions, please contact Dr. Peter Lee of my staff at 630-829-9870.

Sincerely,

/RA/

Robert J. Orlikowski, Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 050-00409
License No. DPR-45

Enclosure:
Inspection Report 05000409/2013-08

cc w/encl: D. Egge, Plant/ISFSI Supervisor
W. Trubilowicz, Technical Engineer
R. Grey, Radiation Protection Supervisor

cc w/o encl: T. Zaremba, Wheeler, Van Sickle and Anderson
J. Kitsembel, Chairman, Wisconsin Public Service Commission
S. Burmaster, Coulee Region Energy Coalition
G. Kruck, Chairman, Town of Genoa
P. Schmidt, Manager, Radiation Protection,
Wisconsin Department of Health Services

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 050-00409

License No.: DPR-45

Report No. : 05000409/2013-08

Licensee: Dairyland Power Cooperative
3200 East Avenue South
La Crosse, WI 54602

Facility: La Crosse Boiling Water Reactor

Location: La Crosse Site
Genoa, Wisconsin

Dates: March 19 and 20, 2014
May 27 and 28, 2014
August 19 and 20, 2014
December 17, 2014

Inspectors: Peter J. Lee, Ph.D., CHP

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

EXECUTIVE SUMMARY

La Crosse Boiling Water Reactor (LACBWR) NRC Inspection Report 05000409/2013-08 (DNMS)

This routine decommissioning inspection covered aspects of facility management and control and radiological safety.

Facility Management and Control

- The inspector determined that the licensee was adequately controlling decommissioning activities and radiological work areas. (Section 1.1)

Radiological Safety

- The inspector determined that the licensee continued to be effective in controlling radiation worker personal exposure. (Section 2.1)
- The inspector determined that the licensee had complied with U.S. Nuclear Regulatory Commission (NRC) and Department of Transportation regulations for shipments of radioactive waste. (Section 2.2)
- The inspector determined that the licensee adequately implemented its effluent monitoring program. (Section 2.3)

Report Details¹

Summary of Plant Activities

During the inspection period, the active decommissioning work was ongoing at the site and consisted of dismantlement and disposal of plant systems, such as reactor purification system, seal injection system including forced circulation pumps, control rod drives, etc. The licensee was also preparing to transform the plant from its current active dismantlement and decontamination phase to passive monitoring Safe Storage (SAFSTOR) status. With respect to As-Low-As-Reasonably-Achievable (ALARA), the licensee had been working on removal of the source terms in the remained systems and the controlled contaminated areas, and expected all the source terms to be significantly reduced prior to SAFSTOR.

1.0 Facility Management and Control

1.1 Decommissioning Performance and Status Review at Permanently Shut Down Reactors (71801)

a. Inspection Scope

The inspector conducted the plant tour to assess field conditions and decommissioning activities and ensure that radioactively contaminated areas were being controlled.

b. Observations and Findings

The licensee maintained the work areas with adequate shielding and enclosures with high efficiency particulate air filter (HEPA) exhaust systems to minimize worker doses. Work areas were observed to be adequately controlled, postings and boundaries were appropriate, and workers were wearing respirators and appropriate protective clothing and following established procedures.

c. Conclusions

The inspector determined that the licensee was adequately controlling decommissioning activities and radiological work areas.

2.0 Radiological Safety

2.1 Occupational Radiation Exposure (83750)

a. Inspection Scope

The inspector reviewed the external exposure records for the first, second, and third quarter of 2014. The inspector reviewed air sampling results during dismantlement of the reactor purification system, seal injection system, forced circulation pumps, and control rod drive units. The inspector also reviewed the characterization surveys of work areas in the controlled contaminated areas and inner surfaces of piping and components

¹NOTE: A list of acronyms used in the report is included at the end of the report.

associated with the system prior to removal, to determine the adequacy of the radiation work permits to prevent potential internal exposure.

b. Observations and Findings

The personnel external exposures were well below Title 10 of the *Code of Federal Regulations* (CFR) 2.390 Part 20 limits. A review of the characterization survey for removable contamination indicated the presence of significant alpha contamination from americium-241 due to the fuel failure during previous reactor operation. Alpha contamination could result in a significant internal exposure without an adequate engineering control. Enclosures with HEPA exhaust systems were set up in work area to minimize internal exposure, especially from alpha. In addition to the enclosures, workers wore controlled air purifying respirators with a HEPA filter hood, and a portable HEPA exhaust was placed near the breathing zone of the workers. Based on the review of air sampling results and protection factor of respirator, the inspector concluded that the workers received no detectable internal exposure.

c. Conclusions

The inspector determined that the licensee continued to be effective in controlling radiation worker personal exposure.

2.2 Transportation of Radioactive Materials (86750)

a. Inspection Scope

The inspector reviewed radioactive waste shipping documents for selected shipments and conducted interviews of the responsible individual to ensure compliance with NRC and U.S. Department of Transportation (DOT) regulations.

b. Observations and Findings

The licensee shipped the radiological metallic waste generated from dismantlement to the Energy Solutions site in Oak Ridge, Tennessee. The review of classification reports based on the 10 CFR Part 61 analyses, dose rate surveys, and Micro-Shield calculations, indicated that the purification coolers, control rod drives, and other associated piping were NRC Class A waste and a DOT Type A quantity of Low Specific Activity (LSA)-II material.

The licensee's shipping manifest showed that personnel packaged, labeled, and marked each shipping container according to the DOT and 10 CFR Part 71 transportation requirements. The licensee verified that the results of radiation and removable contamination levels were within applicable limits. The waste manifest included all required information.

c. Conclusions

The inspector determined that the licensee had complied with NRC and Department of Transportation regulations for shipments of radioactive waste.

2.3 Radioactive Waste Treatment, and Effluent and Environmental Monitoring (84750)

a. Inspection Scope

The inspector evaluated the licensee's activities to effectively control, monitor, and quantify releases of radioactive materials in liquid, gaseous, and particulate forms to the environment. The inspectors reviewed the licensee's 2013 "Effluent and Environmental Monitoring Reports," and the Offsite Dose Calculation Manual (ODCM).

b. Observations and Findings

The licensee's gaseous effluent monitors and waste water effluent monitor were calibrated and checked for proper operation in accordance with station procedures. The licensee participates in a cross check program with an off-site laboratory to confirm the quality of its analytical data. Results of a cross check of licensee laboratory results completed in calendar year 2013 indicated agreement in all analytical data.

The ODCM was comprehensive and contained the requirements listed in the licensee's technical specifications. The effluent monitoring data indicated that release concentrations were consistent with limits specified in 10 CFR Part 20, Appendix B, Table 2, and that doses to the general public were in conformance with Appendix I of 10 CFR Part 50. Further, environmental sampling results indicated only background radiation levels with no distinct contribution from the shutdown reactor.

c. Conclusions

The inspector determined that the licensee adequately implemented its effluent monitoring program.

4.0 **Exit Meeting**

The inspector presented the inspection results to members of the licensee's staff at the conclusion of the inspection on December 17, 2014. The licensee did not identify any of the documents or processes reviewed by the inspector as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

- * D. Egge, Plant/ISFSI Supervisor
- * J. Henkelman, Quality Assurance Specialist
- * R. Grey, Radiation Protection Supervisor
- * E. Martin, QA Manager
- R. Call, Work Planner/Analyst
- * W. Trubilowicz, Technical Engineer

- * Persons present at the exit meeting on December 17, 2014

INSPECTION PROCEDURES USED

IP 71801	Decommissioning Performance and Status Review
IP 83750	Occupational Radiation Exposure
IP 84750	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 86750	Transportation of Radioactive Materials

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	None
Closed	None
Discussed	None

INITIALISMS AND ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ALARA	As-Low-As-Reasonably-Achievable
CFR	Code of Federal Regulations
DOT	Department of Transportation
DNMS	Division of Nuclear Materials Safety
HEPA	High Efficiency Particulate Air
LACBWR	La Crosse Boiling Water Reactor
LSA	Low Specific Activity
NRC	U. S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
SAFSTOR	Safe Storage

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G. Kruck, Chairman, Town of Genoa
P. Schmidt, Manager, Radiation Protection,
Wisconsin Department of Health Services

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