

September 12, 2008

Mr. W. L. Berg  
General Manager  
Dairyland Power Cooperative  
3200 East Avenue South  
P.O. Box 817  
La Crosse, WI 54602-0817

SUBJECT: NRC INSPECTION REPORT 050-00409/08-01(DNMS) - LA CROSSE BOILING  
WATER REACTOR (LACBWR)

Dear Mr. Berg:

On August 13, 2008, the 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 in the areas of facility management and control, decommissioning support, radiological safety, and spent fuel safety. At the conclusion of the inspection on August 13, 2008, the NRC inspectors 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. Specific 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, 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 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

W. Berg

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We will gladly discuss any questions you have concerning this inspection.

Sincerely,

**/RA/**

Christine Lipa, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety

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

Enclosure: Inspection Report 050-00409/08-01(DNMS)

cc w/encl: Roger Christians, Plant Manager  
B. D. Burks, P.E., Director, Bureau of Field Operations  
J. Mettner, Chairman, Wisconsin Public  
Service Commission  
Spark Burmaster, Coulee Region Energy Coalition  
State Liaison Officer  
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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION III**

Docket No.: 050-00409

License No.: DPR-45

Report No.: 050-00409/08-01(DNMS)

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: August 12 through 13, 2008

Inspectors: Peter J. Lee, Ph.D., CHP, Health Physicist  
William Snell, Senior Health Physicist  
Kristina Banovac, Project Manager, FSME

Approved by: Christine Lipa, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

### La Crosse Boiling Water Reactor (LACBWR) NRC Inspection Report 050-00409/08-01 (DNMS)

This routine decommissioning inspection covered aspects of facility management and control, decommissioning support activities, radiological safety, and spent fuel safety.

#### Facility Management and Control

- The inspectors determined that the licensee staffing was adequate for the decommissioning activities being performed, and that the training requirements of the Decommissioning Plan were being met. (Section 1.1)
- The inspectors determined that the licensee's process for evaluating the safety impacts of facility changes and modifications was in compliance with the requirements of 10 CFR 50.59. (Section 1.2)
- The inspectors determined that the licensee had enhanced its Quality Assurance program to better address dry cask activities, and were adequately identifying and addressing conditions adverse to quality. The Radiation Safety Committee was meeting and carrying out its responsibilities as required. (Section 1.3)
- The inspectors determined that the licensee was adequately controlling decommissioning activities and radiological work areas. (Section 1.4)

#### Decommissioning Support Activities

- The licensee's maintenance and surveillance activities were conducted in accordance with the maintenance rule, as stated in 10 CFR Part 50.65. (Section 2.1)

#### Radiological Safety

- The inspectors determined that the licensee continued to be effective in controlling radiation worker personal exposure. (Section 3.1)
- The inspectors determined that the licensee adequately implemented its effluent monitoring program. (Section 3.2)
- The inspectors determined that the licensee complied with regulatory requirements for shipping radioactive materials. (Section 3.3)

#### Spent Fuel Safety

- The inspectors determined that the licensee properly maintained the Spent Fuel Element Storage Well water level, temperature, chemistry, and cleanliness to ensure the safe wet storage of the spent fuel. (Section 4.1)

## Report Details<sup>1</sup>

### Summary of Plant Activities

The licensee's current activities were focused on routine operations regarding the safe storage of spent fuel in the fuel pool and preparations for the dry fuel storage project.

#### **1.0 Facility Management and Control**

##### 1.1 Organization, Management and Cost Controls (IP 36801)

###### a. Inspection Scope

The inspectors evaluated the licensee's decommissioning staffing and reviewed the training program and training records for the current calendar year, including the fuel handler training, radiation protection training, and general employee training. The inspectors also reviewed the training for the contract workers who were granted unescorted access to conduct work in the restricted area.

###### b. Observations and Findings

The licensee's staffing was adequate for the level of work being performed and met requirements of Technical Specifications. A review of the training program and training records identified that the workers had received the required training specified in the Decommissioning Plan.

###### c. Conclusions

The inspectors determined that the licensee staffing was adequate for the decommissioning activities being performed, and that the training requirements of the Decommissioning Plan were being met.

##### 1.2 Safety Reviews, Design Changes and Modifications (37801)

###### a. Inspection Scope

The inspectors reviewed the licensee's 10 CFR 50.59 safety screening reviews of several facility changes since the last inspection to assess the licensee's conclusions regarding the need for safety evaluations.

###### b. Observations and Findings

The inspectors verified that the safety review process stated in LACBWR Administrative Control Procedure (ACP)-06.4, "10 CFR 50.59 Reviews," dated April 21, 2003, was consistent with the requirements of 10 CFR 50.59. The licensee conducted safety screening reviews per ACP-06.4. The activities all involved facility changes that did not adversely affect the design functions of the structures, systems, and components (SSCs) as described in the licensee's Decommissioning Plan and none of the facility changes required the safety evaluations.

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

c. Conclusions

The inspector determined that the licensee's process for evaluating the safety impacts of facility changes and modifications was in compliance with the requirements of 10 CFR 50.59.

1.3 Self Assessment, Auditing, and Corrective Actions (40801)

a. Inspection Scope

The inspectors reviewed the licensee's activities associated with quality assurance (QA), identification and tracking of corrective actions, and Safety Review Committee (SRC) commitments. The inspectors reviewed the licensee's Quality Assurance Project Plan (QAPP) for the Dry Cask Storage Project, Revision 1, dated June 2, 2008, ACP- 04.1, "Design and Facility Change Control", Issue 35, ACP-16.0, "Quality Assurance Deficiency Reports and Deposition of Non-Conforming Materials, Parts, and Components", Issue 16, ACP-2.14, "Safety Review Committee (SRC)", Issue 14, and the Final Minutes of the April 29, 2008, LACBWR SRC Meeting. The inspectors met with licensee personnel and reviewed and discussed the QAPP Appendix A Program Implementation Matrix and the identification and disposition of items identified in Corrective Action Requests (CARs).

b. Observations and Findings

The licensee developed its QAPP for the Dry Cask Storage Project to control work in a project based approach specific to dry cask storage activities. The QAPP incorporates the existing Quality Assurance Program Description (QAPD), site procedures, and corporate procedures, as applicable to the project. The QAPP enhanced the corrective action process specified in the QAPD by including a CAR process to promptly address and track conditions adverse to quality. A review of open CAR items as well as recently closed CAR items indicated issues were being adequately tracked and addressed in a timely manner. A review of the minutes from the most recent SRC Meeting (April 29, 2008) indicated that the requirement to meet at least once per year and the quorum requirements were met. The inspectors' review of the SRC Meeting Minutes determined that the SRC was appropriately addressing the type of issues identified in Section 4.7 of ACP-2.14 as pertinent to the SRC, as required.

c. Conclusions

The inspectors determined that the licensee had enhanced its Quality Assurance program to better address dry cask activities, and was adequately identifying and addressing conditions adverse to quality. The SRC was meeting and carrying out its responsibilities as required.

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

a. Inspection Scope

The inspectors conducted plant tours to assess field conditions and decommissioning activities and ensure that radioactively contaminated areas were being controlled.

b. Observations and Findings

During site tours the inspectors noted that the material condition of facilities and equipment was commensurate with current decommissioning activities. The individuals conducting the tours with the inspectors were cognizant of the work activities in process, the dose levels throughout the facilities, and the locations of contaminated areas. Work areas were observed to be adequately controlled, postings and boundaries were appropriate, and workers were wearing personal protective clothing that was suitable for the work they were performing.

c. Conclusions

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

**2.0 Decommissioning Support Activities**

2.1 Maintenance and Surveillance (62801)

a. Inspection Scope

The inspectors reviewed the licensee's maintenance requests and surveillances for 2008, and biannual assessment of maintenance effectiveness of structures, systems, and components (SSCs) during 2006 and 2007, to verify that maintenance and surveillance for SSCs were conducted in a manner that resulted in the safe storage of spent fuel.

b. Observations and Findings

The maintenance and surveillance for SSCs were conducted in accordance with the licensee's program that implemented 10 CFR Part 50.65 "Maintenance Rule" Based on the risk assessment of SSCs, the licensee established 13 functional goals and developed associated monitoring and frequency for each goal. There were four incident reports generated during 2007 and 2008. None of the incidents adversely affected SSC design functions and correction actions had been taken. The licensee's periodic assessments indicated that all functional goals of the SSCs were met.

c. Conclusions

The licensee's maintenance and surveillance activities were conducted in accordance with the maintenance rule, as stated in 10 CFR Part 50.65.

**3.0 Radiological Safety**

3.1 Occupational Radiation Exposure (83750)

a. Inspection Scope

The inspectors reviewed the As-Low-As-is-Reasonably-Achievable (ALARA) reviews and radiation work permits for removal of the recirculation piping from the reactor lower cavity during August, 2008. The inspector verified that the licensee had established

procedures, and engineering work controls that were based on sound radiation protection principles in order to achieve occupational exposures that were ALARA.

b. Observations and Findings

The licensee provided sufficient shielding of radiation sources in a practical manner. Also, to reduce potential intakes of radioactive materials, the licensee installed high efficiency particulate air filter-equipped (HEPA) filtration systems in the vicinity of the work areas, and workers also wore half-face mask respirators in the reactor lower cavity area.

Based on the review of external exposure records, workers received doses less than the dose limits specified in radiation work permits. The total personnel external exposures were 9602 mrem and the highest dose received by an individual was 1860 mrem. Air sampling data indicated that most of the internal dose was due to americium-241. Based on the DAC-hours dose assessments, the total personnel committed effective dose equivalents (CEDE) were 620 mrem and the highest CEDE received by an individual was 182 mrem.

c. Conclusions

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

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

a. Inspection Scope

The inspectors 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 2007 "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 2007 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 inspectors determined that the licensee adequately implemented its effluent monitoring program.

### 3.3 Transportation of Radioactive Materials (86750)

#### a. Inspection Scope

The inspector reviewed the radioactive materials shipping program and applicable shipping documents. The inspector evaluated whether the licensee was in compliance with NRC and Department of Transportation (DOT) shipping requirements.

#### b. Observations and Findings

The licensee has processed thirteen waste shipments since the last inspection. The waste contained concrete shield blocks, and recirculation piping. The licensee shipped the radiological waste to Energy Solutions sites in Clive, Utah, and Kingston and Oak Ridge, Tennessee. 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 complied with regulatory requirements for shipping radioactive materials.

## 4.0 **Spent Fuel Safety**

### 4.1 Spent Fuel Pool Safety at Permanently Shutdown Reactors (60801)

#### a. Inspection Scope

The inspectors reviewed the licensee's activities to ensure the safe wet storage of spent fuel in the Fuel Element Storage Well (FESW). The review included the verification of water temperature, and water level requirements of Technical Specification (TS) 4.1.2, the surveillance requirements of TS 5.1.2, and the water chemistry and cleanliness control requirements of the licensee's Health and Safety Procedure HSP-7.2, for the period of January through July 2008.

#### b. Observations and Findings

All parameters reviewed were consistent with limits specified in HSP-7.2, "Sampling of Fuel Element Storage Well." The FESW water level and temperature met the requirements of TS 4.1.2. The FESW water level and temperature had been monitored daily as required by the surveillance requirements of TS 5.1.2.1.

#### c. Conclusions

The inspectors determined that the licensee properly maintained the FESW water level, temperature, chemistry, and cleanliness to ensure the safe wet storage of the spent fuel.

## **5.0 Exit Meeting**

The inspectors presented the inspection results to members of the licensee's staff at the conclusion of the inspection on August 13, 2008. The licensee did not identify any of the documents or processes reviewed by the inspectors as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **PARTIAL LIST OF PERSONS CONTACTED**

R. Christians, Plant Manager  
R. Cota, Training/Security Supervisor  
J. Henkelman, Quality Assurance Specialist  
M. Johnsen, Tech Support Engineer  
\* L. Nelson, Health and Safety Supervisor  
S. Rafferty, Reactor Engineer  
\* D. Tesar, Security Supervisor  
\* D. Egge, Quality Assurance Supervisor  
R. Lewton, Electrician & Instrument Technician  
\* J. McRill, Tech Support Engineer  
\* M. Brasel, Project Manager

\* Persons present at the exit meeting.

### **INSPECTION PROCEDURES USED**

IP 36801: Organization, Management and Cost Controls  
IP 37801: Safety Reviews, Design Changes, and Modifications  
IP 40801: Self-assessment, Auditing, and Correction Action  
IP 60801: Spent Fuel Pool Safety  
IP 62801: Maintenance and Surveillance  
IP 71801: Decommissioning Performance and Status Review  
IP 83750: Occupational Radiation Exposure  
IP 86750: Transportation of Radioactive Materials  
IP 84750: Radioactive Waste Treatment, and Effluent and Environmental Monitoring

### **ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened	None
Closed	None
Discussed	None

### **INITIALISMS AND ACRONYMS**

ACP	Administrative Control Procedure
ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As is Reasonably Achievable
CFR	Code of Federal Regulations
CAR	Corrective Action Request
DNMS	Division of Nuclear Materials Safety
DOT	Department of Transportation
FESW	Fuel Element Storage Well
LACBWR	La Crosse Boiling Water Reactor
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records
QA	Quality Assurance

QAPD	Quality Assurance Program Description
QAPP	Quality Assurance Project Plan
SSC	Structures, Systems, and Components
SRC	Safety Review Committee