

May 27, 2009

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 050-00409/09-01(DNMS) - LA CROSSE BOILING  
WATER REACTOR (LACBWR)

Dear Mr. Berg:

On May 6, 2009, 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. At the conclusion of the inspection on May 6, 2009, 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. Areas examined during the inspection included facility management and control, radiological safety, and spent fuel 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 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 A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch

Docket No. 050-00409

License No. DPR-45

Enclosure:

Inspection Report 050-00409/09-01(DNMS)

cc w/encl: M. Brasel, 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  
Chief, Radiation Protection Section  
WI Department of Health and  
Social Services, Division of Health

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION III**

Docket No.: 050-00409

License No.: DPR-45

Report No.: 050-00409/09-01(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: May 5 through 6, 2009

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

Approved by: Christine A. Lipa, Chief  
Materials Control, ISFSI, and  
Decommissioning Branch  
Division of Nuclear Materials Safety

## EXECUTIVE SUMMARY

### La Crosse Boiling Water Reactor (LACBWR) NRC Inspection Report 050-00409/09-01 (DNMS)

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

#### Facility Management and Control

- 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 1.1)
- The inspectors determined that the licensee's audit and corrective action programs were adequately implemented in accordance with its Quality Assurance Program. (Section 1.2)
- The inspectors determined that the licensee was adequately controlling decommissioning activities and radiological work areas. (Section 1.3)

#### Radiological Safety

- The inspectors determined that the licensee continued to be effective in controlling radiation worker personal exposure. (Section 2.1)
- The inspectors determined that the licensee adequately implemented its effluent monitoring program. (Section 2.2)
- The inspectors determined that the licensee complied with regulatory requirements for shipping radioactive materials. (Section 2.3)

#### Spent Fuel Safety

- The inspectors determined that the licensee properly maintained the Spent Fuel Element Storage Well water level, temperature, chemistry, cleanliness, and criticality control to ensure the safe wet storage of the spent fuel. (Section 3.1)

## 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 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 safety evaluations.

###### **c. Conclusions**

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.

##### **1.2 Self Assessment, Auditing, and Corrective Actions (40801)**

###### **a. Inspection Scope**

The inspectors reviewed selected audits of the licensee's radiation safety (Surveillance 70-33), waste shipment (Surveillance 70-32), emergency drill and exercise planning (Surveillance 70-31), and As-Low-As-is-Reasonably-Achievable (ALARA) program (Surveillance 70-30).

###### **b. Observations and Findings**

The licensee's audits were appropriately focused in both scope and level of detail. In all cases, the licensee initiated appropriate corrective actions in a timely manner to resolve the audit findings.

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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 inspectors determined that the licensee's audit and corrective action programs were adequately implemented in accordance with its Quality Assurance Program.

1.3 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. 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 Radiological Safety**

2.1 Occupational Radiation Exposure (83750)

a. Inspection Scope

The inspectors reviewed the external exposure records for the fourth quarter of 2008 and first quarter of 2009. The inspectors also reviewed the routine general area air sampling results for the period of September 2008 to the present associated with the reactor and turbine buildings. The inspectors reviewed the direct radiation survey and smear sample results from the reactor building and turbine building for the period of September 2008 to March 2009.

b. Observations and Findings

The personnel exposures were well below 10 CFR Part 20 limits and consistent with the low level of activity within the facility. Based on the review of air sampling results, the inspectors concluded that the workers received no detectable internal exposure. Based on the review of the survey results, the inspectors concluded that the licensee appropriately controlled contaminated areas and contamination levels within the facility had been kept to a minimum.

c. Conclusions

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

2.2 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 2008 "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 2008 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.

2.3 Transportation of Radioactive Materials (86750)

a. Inspection Scope

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

b. Observations and Findings

The licensee has processed three waste shipments since the last inspection. The waste contained turbine lubrication system removal and low pressure turbine outer cover. The licensee shipped the radiological waste to Energy Solutions sites in Clive, Utah, 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 inspectors determined that the licensee complied with regulatory requirements for shipping radioactive materials.

**3.0 Spent Fuel Safety**

3.1 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 September 2008 through April 2009.

The inspectors reviewed the Operation Procedure (OP-58-02 ), "Irradiated Fuel Element Storage Rack poison Material Surveillance Program" to verify the integrity of the neutron absorbing material in the spent fuel storage racks, including the report of testing of surveillance coupons.

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.

Carborundum neutron absorbers are used in the spent fuel storage racks to assure that the effective neutron multiplication factor is less than 0.95. The Carborundum neutron absorber is boron carbide in a matrix comprised of phenol formaldehyde resin with fiberglass reinforcement. The licensee tested the loss of boron in the neutron absorbers by measuring the weight of the surveillance coupons every three years. The results of testing done in 2008 showed the weight loss of the coupons ranged from 4.78% to 5.53%, which were within the required limits of 10% as stated in the surveillance program.

c. Conclusions

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

**4.0 Exit Meeting**

The inspectors presented the inspection results to members of the licensee's staff at the conclusion of the inspection on May 6, 2009. The licensee did not identify any of the documents or processes reviewed by the inspectors as proprietary.

## **SUPPLEMENTAL INFORMATION**

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

M. Brasel, 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

\* Persons present at the exit meeting.

### **INSPECTION PROCEDURES USED**

IP 37801: Safety Reviews, Design Changes, and Modifications  
IP 40801: Self-Assessment, Auditing, and Correction Action  
IP 60801: Spent Fuel Pool Safety  
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