

U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-409/79-08

Docket No. 50-409

License No. DPR-45

Licensee: Dairyland Power Cooperative  
2615 East Avenue - South  
La Crosse, WI 54601

Facility Name: La Crosse Boiling Water Reactor

Inspection At: La Crosse Boiling Water Reactor Site, Genoa, WI

Inspection Conducted: April 8-11, 1979

Inspectors: *E. R. Swanson*  
E. R. Swanson

*J. E. Mennin*  
J. E. Mennin

Approved By: *W. S. Little*  
W. S. Little, Chief  
Nuclear Support Section 2

*4/21/79*

*4/23/79*

*4/23/79*

Inspection Summary

Inspection on April 8-11, 1979 (Report No. 50-409/79-08)

Areas Inspected: Routine, announced inspection of preparation for a refueling outage, pre-fuel handling activities, fuel handling activities, and maintenance during a refueling outage including main steam relief valve testing. The inspection involved 47 inspector-hours onsite by two NRC inspectors and included inspection effort conducted during offshift hours.

Results: No items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

R. E. Shimshak, Plant Superintendent  
J. D. Parkyn, Assistant Plant Superintendent  
S. J. Raffety, Reactor Engineer  
C. W. Angle, Process Engineer  
N. L. Hoefert, Mechanical Engineer  
R. R. Wery, Quality Assurance Specialist

### 2. Preparation for Refueling

The inspectors verified that approved procedures were available for new fuel receipt and inspection, fuel transfer, irradiated fuel inspection, and fuel sipping operations. The inspectors also verified that the new fuel was received and inspected in accordance with the licensee's procedures.

The inspectors reviewed the following licensee procedures from the LACBWR Operating Manual, Volume VI, Refueling:

- a. Chapter 8, Transfer of Irradiated Fuel from the Reactor to Storage in the Fuel Element Storage Well (FSW) or from FSW to Reactor.
- b. Chapter 9, Installation of New Fuel into the Reactor.
- c. Chapter 15, Procedure for Dry Sipping LACBWR Fuel to Identify Elements with Failed Fuel.
- d. Chapter 16, Fuel Element Handling Bridge Test Procedure.

Also reviewed were the following special procedures:

- a. SP-0-30-75, Unloading, Inspection and Storage of Reload Fuel Assemblies (including Addenda).
- b. SP-H & S-04-75, New Fuel Handling Monitoring Requirements, and Inspection Records for Exxon Fuel Assemblies 3-33 through 3-58.
- c. SP-0-27-77, Unloading, Inspection and Storage of Repaired Allis Chalmers Fuel Assemblies, and Exxon Certification Records of Assemblies 1-8 and 1-24.

No items of noncompliance or deviations were identified.

3. Prefuel Handling Activities

The inspectors verified that required surveillance testing had been completed on technical specification requirements, refueling machine preoperational testing, refueling interlocks, crane testing, refueling deck radiation monitors, and communication systems.

No items of noncompliance or deviations were identified.

4. Fuel Handling Activities

The inspectors verified by direct observations that core monitoring during refueling operations was in accordance with Technical Specifications, that containment integrity during refueling operations was in accordance with Technical Specifications, that fuel bundle insertion and removal were in accordance with established procedures, that fuel accountability methods were in accordance with established procedures, that core internals were stored to protect against damage, that housekeeping was proper, that water level in the FFSW was proper, that the individual directing fuel handling activities held a senior operator license and was present directly supervising activities, and that a licensed reactor operator was present in the control room and in constant direct communications with a member of the fuel handling crew when work was being performed that could affect the reactivity of the reactor.

No items of noncompliance or deviations were identified.

5. Fuel Cladding Failure

While removing assemblies 2-33 and 2-13 on April 5 and 10, respectively, sections of fuel rods were displaced and fell on top of nearby assemblies. These sections, approximately six inches of pin 39 from assembly 2-33 and approximately four inches of pin 07 from assembly 2-13, were retrieved using approved procedures. Accountability and visual inspection methods will be used to verify that all fragments are recovered. The inspectors viewed videotapes of the above mentioned assemblies and also the following assemblies which had visual clad cracking in one or more pins: 2-65, 2-40, 2-48, 2-51, 2-55. Three other assemblies, 2-29, 2-32, and 2-41 appeared to have heavy crud deposits with spalling and possible cracks which will be investigated by dry sipping. Three other assemblies previously intended for reuse, 2-72, 2-63, and 2-25 were found to be leaking when sipped. All irradiated fuel assemblies currently intended for reuse have been sipped and found satisfactory by the licensee.

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Fuel management will be the topic of an upcoming meeting between the licensee and NRR.

6. Maintenance During Refueling

The inspectors reviewed the procedures controlling maintenance during the outage and verified that they provide: administrative controls for removing a system from service and returning it to service, provisions for inspection and signoff by licensee personnel, provisions for testing following maintenance, provisions for insuring proper fire protection precautions are utilized, provisions for reviewing materials certification, assurance that systems are realigned prior to return to service, and adequate jumper controls. The specific maintenance procedures reviewed were RM-5-76, Revision 2, Forced Circulation Pump Seal Repair; M-31-1, Repair of Upper Control Rod Drives in Numbered Positions 9, 11 and 13; and RM-7-76, Examination, Testing and Setting of Main Steam Safety Valves, which was also observed. Work was done in accordance with the maintenance request, written procedures and special work permits as discussed with the licensee's representative during the exit interview.

The inspectors witnessed the testing of safety valves and observed that all three valves (62-27-001, 62-27-002, 62-27-003) lifted below the design setpoint on the nitrogen test stand. Correlation between the nitrogen and live steam actuation pressures is provided in the topical report LAC-TR-059. Valve 001 had been leaking during operation and, during testing of "as found" conditions was leaking too much to pop approximately 100# below setpoint. After surfaces were lapped on valve 001 the first lift was within specifications as were the other two valves on their first attempt. All three valves required lapping to obtain zero leakage at 90% of setpoint after testing, and minor adjustment to obtain repeatable results within specification. Results from this testing appear to bear out the conclusions of LAC-TR-059 that the interfacial bonding between the seating surfaces has been the cause for high first lift. The harder 17-4pH disc inserts appear to have remedied this problem; addressed as a concern in Report No. 50-409/77-09, June 9, 1977.

The inspectors reviewed the following licensee procedures and reports:

- a. ACP-02.5, Housekeeping, System, and Component Cleanliness.
- b. ACP-04.1, Design Control and Review.

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- c. ACP-09.1, Identification and Control of Material, Parts, and Components.
- d. ACP-15.1, Installation and Removal of Jumpers, Lifting and Replacement of Leads.
- e. ACP-15.2, Equipment Lock and Tag Control.
- f. ACP-17.3, Maintenance Request.
- g. LAC-TR-059, "Main Steam Safety Valve Testing, La Crosse Boiling Water Reactor, 1977 Maintenance Outage."
- h. LAC-TR-046, "Main Steam Relief Valve Testing, La Crosse Boiling Water Reactor (LACBWR), 1976 Maintenance Outage."

No items of noncompliance or deviations were identified.

7. Exit Interview

The inspectors met with the Assistant Plant Superintendent at the conclusion of the inspection on April 11, 1979. The inspectors summarized the findings of the inspection and expressed concern over fuel clad failures. The licensee stated that information about the meeting mentioned in paragraph 5 will be relayed to the inspectors.

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