

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-409/85009(DRP)

Docket No. 50-409

License No. DPR-45

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

Facility Name: LaCrosse Boiling Water Reactor

Inspection At: LaCrosse Site, Genoa, WI

Inspection Conducted: April 16 through June 17, 1985

Inspectors: R. DeFayette

D. Boyd

K. Ridgway

Approved By: *D. C. Boyd*  
D. C. Boyd, Chief  
Reactor Projects Section 2D

7-10-85  
Date

Inspection Summary

Inspection from April 16 through June 17, 1985 (Report No. 50-409/85009(DRP))

Areas Inspected: Routine, unannounced inspection by region-based inspectors of licensee activities on previous inspection findings, operational safety, monthly surveillance observation, licensee event reports, generic letter followup, and TMI action plan followup. The inspection involved a total of 70 inspector-hours onsite by three NRC inspectors including a total of six inspector-hours during back shifts.

Results: There was one violation identified (see Section 3 of the report) involving a failure to properly line up the alternate core spray system prior to performing a hydrostatic pressure test on the reactor pressure vessel. The event had minimal safety implications and was caused by personnel error.

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## DETAILS

### 1. Persons Contacted

- \*J. Parkyn, Plant Superintendent
- L. Kelley, Assistant to Operations Supervisor
- R. Brimer, Electrical Engineer
- \*G. Boyd, Operations Supervisor
- M. Polsean, Shift Supervisor
- L. Nelson, Health and Safety Supervisor
- \*R. Wery, QA Supervisor
- L. Goodman, Operations Engineer
- D. Rybarik, Mechanical Engineer
- H. Towsley, Technical Support Engineer
- G. Lange, Mechanical Design Engineer

The inspectors also interviewed other licensee personnel during the course of the inspection.

\*Denotes those attending exit interviews during the inspection period.

### 2. Licensee Action on Previous Inspection Findings

(Closed) Open Item 409/84-11-01: Core Spray System pipe hanger configuration is not the same as the configuration assumed in the seismic analysis report. The licensee had removed an old hanger that was not included in the analysis and had reanalyzed the system after including all noted changes. The re-analysis was submitted to NRR on June 3, 1985.

(Open) Open Item 409/83-22-14: IPSAR 4.19.2., add a Second Level Controller for Shutdown Condenser Shell Side. The licensee has requested in a letter to NRR dated July 10, 1984, that, due to difficulties in selecting an environmentally qualified instrument, the installation will be delayed until the 1986 refueling outage.

(Closed) Noncompliance 409/84-04-02: Failure to perform Type C test on alternate core spray check valves following disassembly for ISI test. By letter of January 25, 1985, the licensee notified the NRC that it disagreed with the need to perform the Type C test but that it would commit to perform it following future mechanical (manual lifting) testing of the Alternate Core Spray check valves. By letter of February 13, 1985, the NRC notified the licensee that this satisfactorily resolves the matter.

(Closed) Open Item 409/84-09-19: Intergranular stress corrosion cracks (IGSCC) in LACBWR central blade C-7. The Region III Division of Reactor Safety has reviewed Dairyland Power Cooperative (DPC) Letter LAC-10592, Linder to Keppler, dated February 21, 1985, and the attached report, LAC-TR-125, "Results of PIE of Handle, Sheath, and Tie Rod of LACBWR Control Blade C-7." This letter and report discuss the discovery of a few small IGSCCs in isolated areas of the control rod Type 304 stainless steel sheath and handle material during extensive cutting and milling

operations. A large number of test specimens, to be used in GE's irradiated materials test program, were being made from the blade material. The licensee currently is planning to replace high exposure control blades during the refueling for Cycle 11. The design of the new control blades is believed by the licensee to be such as to eliminate or mitigate several conditions present in the current control blades which they believe contributed to the development of the observed cracks. Specifically, the new design eliminates the crevice condition and spot weld stresses that appear to have contributed to the cracking. In addition, special, high purity Type 304 stainless steel will be used to reduce the susceptibility to IGSCC. The inspectors consider that the actions being taken by the licensee are appropriate and therefore have no further concerns in this area. This item is closed.

No violations or deviations were identified.

### 3. Operational Safety Verification

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators. The inspectors verified the operability of selected emergency systems and reviewed tagout records. Tours of the crib house, reactor buildings and turbine buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations. The inspector by observation verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. The inspector walked down the accessible portions of the Alternate Core Spray system to verify operability.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under technical specifications, 10 CFR, and administrative procedures.

On March 10, 1985, the licensee shut down for a planned refueling outage and was making plans for restart on approximately April 16, 1985. One of the prestart tests consisted of a pressure check of the reactor (a hydrostatic pressure test) in which reactor pressure is increased to approximately 1400 pounds per square inch with the reactor at zero power and all control rods inserted. Technical Specification 4.2.2.18 requires that: "The low pressure coolant injection system shall be available for automatic operation except at times when the reactor is shut down and the system depressurized to approximately atmospheric pressure. Manual valves in this system shall be locked in that position which will not impair system capability when automatic operability is required.

Contrary to this requirement, the hydrotest was conducted and completed with the Alternate Core Spray (ACS) manual valves closed and tagged (the ACS system is part of the low pressure coolant injection system). By itself, this closure would not have prevented operation of the low

pressure coolant injection system because the ACS is a "last resort" system which would pump river water directly into the reactor vessel if either of the normal water supplies were unavailable (the 42,000 gallon overhead storage tank or the 29,000 gallon condensate storage tank). Therefore, from a safety standpoint the event was relatively minor, especially since the reactor had been shut down for nearly five weeks and part of the core loading consisted of new fuel, thereby reducing the radioactivity inventory in the core considerably. Nevertheless, it was a violation of the Technical Specifications.

The inspector interviewed licensee personnel and reviewed licensee internal reports on the incident and determined the cause of the event to be personnel error. Volume II of the LACBWR Operating Manual, "Reactor Process Systems" contains a section 2.4.3, "Primary System Hydrostatic Leak Test." Subsection 3 of this section contains prerequisites before performing the tests and item (1) under this subsection requires "the reactor vessel and primary systems are lined up for normal operation, including the ... Alternate Core Spray System." Section 2.1.1 of Volume I, "Integrated Plant Operations", of the Operating Manual lists prerequisites for plant startup and item (6) under the subsection states: "The following systems are operable; no outstanding tags on systems per ACP-15.2, Lock and Tag Control...Alternate Core Spray."

Two valves in the system were closed and tagged out during the hydro test. This apparently happened because of insufficient communications during a shift change in which the oncoming crew believed the valves were open and the tags removed. The error was discovered by licensee personnel when an operator was performing valve checks in anticipation of performing a second reactor hydro test.

Corrective action was taken by the licensee to prevent recurrence by making changes to the procedures such that each step of the hydrostatic pressure test will have to be initialed. Previously this was not required.

No other violations or deviations were identified.

#### 4. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the radiation monitors on May 14, 1985 and the Safety Channel No. 2 on May 15, 1985 and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

No violations or deviations were identified.

## 5. Licensee Event Reports Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

- a. (Closed) LER 84-023, "Loss of Containment Integrity Due to Personnel Air Lock Type B Test Failure." The mechanical seals for the inner door upper and lower handwheel shafts were replaced and a successful Type B test conducted with no leakage detected.
- b. (Closed) LER 85-001, "Containment Building Ventilation Isolation Due to Spurious High Activity Signal." The high activity signal apparently was caused by a broken pin in one of the plugs on the instrument drawer. The pin was repaired and similar plugs were checked. There was no safety significance because the reactor was in cold shutdown at the time and containment integrity was not required.
- c. (Closed) LER 85-002, "Containment Building Ventilation Isolations - Increased Background at CB Monitor." The cause of the isolation was a high activity signal on the containment building monitor which receives a signal from the delayed particulate filter detector. This detector was oriented such that it was sensitive to a drain line from the upper reactor cavity. The reactor was shut down at the time and work was in progress in the upper reactor cavity in preparation for refueling. The line was being flushed and contaminated particles passed through the drainline causing the detector to indicate a high signal. The alarm cleared 3 minutes after it annunciated. The licensee flushed the line several times to clear it of any residual contamination.
- d. (Closed) LER 85-003, "Initiation of Safety System During Facility Change." In preparation for performing a facility change during a refueling outage, a fuse was removed. This started the high pressure core spray pumps and the emergency diesel generators. The cause was that a list of systems in the fuse cabinet which related systems to fuses was not complete. The reactor was defueled at the time. The licensee disseminated information on the incident to appropriate plant personnel and committed to update the list. The inspector verified that this was done.
- e. (Closed) LER 85-07, "Alternate Core Spray System Lined Up to River During Reactor Vessel Hydrostatic Test." This LER is the subject of the violation described in Appendix A and in Section 3 of this inspection report.

## 6. Generic Letter Followup

For the Generic Letter listed below, the inspector verified that it was received by the licensee and reviewed for its applicability to the facility:



(Closed) Generic Letter 85-03, "Clarification of Equivalent Control Capacity for Standby Liquid Control Systems." This Generic Letter was issued to clarify the requirements of 10 CFR 50.62(c)(4) with respect to control capacity for standby liquid control systems. Since LACBWR was designed and built prior to July 26, 1984, there is no requirement for an automatic SBLC system. However, LACBWR does have a manually initiated system which supplies 100 gpm of boron solution to the reactor with both pumps operating or 50 gpm with only one pump operating. This is well above the 14.1 gpm "equivalent control capacity" calculated as being necessary for LaCrosse. This information is discussed in an internal licensee memorandum to "Generic Letter File" dated April 15, 1985. This item is closed.

No violations or deviations were identified.

7. TMI Action Items

(Closed) II.F.1.4 Containment Pressure Monitor System

By letter dated May 14, 1984, the Office of Nuclear Reactor Regulation (NRR) informed the licensee that the existing containment pressure monitor did not meet the requirements of NUREG-0737. Facility Change 37-84-11, covering this change, was reviewed during an earlier inspection (IR 50-409/85004) and left open because the modification was not complete. The inspector reviewed FC 37-84-11 and found the modification to be complete and the instrument calibrated in accordance with I&E Procedure 37-02. The work was carried out under Maintenance Procedure No.208-85-37. This item therefore is closed.

No violations or deviations were identified.

8. Followup on Headquarters Request

NRC Temporary Instruction (TI) 2515/67, "Survey of Licensee's Responses to Selected Safety Issues", dated April 22, 1985, requested NRC inspectors to verify certain licensee practices relating to mispositioned control rods. Most of the items in the TI do not apply to LACBWR. Of the two that do, both have been completed by the licensee. These are: (1) procedural requirements have been implemented for written instructions if a nuclear engineer is not required to be present during scheduled control rod movements; and (2) training has been provided for operators on the proper movement of control rods. This completes the required action of the TI.

No violations or deviations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the period and at the conclusion of the inspection and summarized the scope and findings of the inspection activities. The licensee representative acknowledged the findings as reported herein and did not identify any documents or processes as proprietary.