

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

REGION III

Report No. 50-409/80-15

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 Boiling Water Reactor Site
Genoa, WI

Inspection Conducted: December 8-11, 1980

Inspectors: *for W. L. Fisher*
L. R. Greger

R. A. Paul
R. A. Paul

Approved By: *W. L. Fisher*
W. L. Fisher, Chief
Fuel Facility Projects and
Radiation Support Section

1/14/81

Jan 14, 1981

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Inspection Summary:

Inspection on December 8-11, 1980 (Report No. 50-409/80-15)

Areas Inspected: Routine, unannounced inspection of radiation protection activities during refueling, including: management, planning, training, procedures, exposure control, surveys, postings and controls, licensee event reports, and licensee action on previous inspection findings. The inspection involved 66 inspector-hours onsite by two NRC inspectors.

Results: Of the nine areas inspected, no items of noncompliance or deviations were found in seven areas. Two apparent items of noncompliance were found in the remaining areas (Level 4 violation - inadequate radiation survey - Section 10; Level 4 violation - unmonitored release of radioactive material - Section 11).

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DETAILS

1. Persons Contacted

- *L. Krajewski, Health and Safety Supervisor
- *P. Shafer, Radiation Protection Engineer
- *R. Shimshak, Plant Superintendent

The inspectors also contacted other licensee employees, including members of the technical and engineering staffs.

*Denotes those attending the exit interview.

2. General

This inspection, which began at 12:30 p.m. on December 8, 1980, was conducted to examine the licensee's radiation protection activities associated with the current refueling outage which began on November 9, 1980. The inspection included the review of licensee records and reports, discussions with licensee personnel, observation of outage activities, and independent radiation measurements by the inspectors.

Extensive tours of the licensee's facilities were made. General plant conditions were adequate. Specific problems are discussed in the following report sections. Radiation protection coverage for the outage was provided by the plant radiation protection staff without outside assistance.

3. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (50-409/77-11, 50-409/77-16, 50-409/79-13): Adequacy of sampling arrangement for quantifying plant stack particulate releases. An isokinetic flow splitter was installed in the sample line during 1979.

(Closed) Noncompliance Item (50-409/77-23, 50-409/78-17): Inadequate evaluation of whole body counting results for compliance with 10 CFR 20.103. Procedure HSP-13.5 "Whole Body Counting," addresses the criteria to be used for evaluating whole body count results, including correlating the results to airborne exposures.

(Closed) Noncompliance Item (50-409/78-17): Lack of process or engineering controls or other precautionary procedures to limit exposure of individuals to airborne concentrations of radioactive material. This matter was reviewed by appropriate management personnel; subsequent training has been conducted.

(Closed) Noncompliance Item (50-409/79-13): Insufficient records for Type B radioactive waste shipments. Procedure HSP-04.1 "Radioactive Material Shipments," was revised to include a checklist to document the required information.

4. Organization

The current Health and Safety Supervisor will be terminating employment with the licensee in early 1981. This represents a significant loss to the health physics program, since the only remaining member of the health physics management staff is the Radiation Protection Engineer, who has about six months experience at the licensee's facility. The Health and Safety Supervisor had about 12 years experience in the licensee's health physics program. The licensee was informed at the exit interview of the inspectors' concern for the quality of the health physics program should the loss of the Health and Safety Supervisor go uncorrected. The current health physics management workload appears excessive for one individual.

The inspectors also expressed concern at the exit interview over the repetitious noncompliance for failing to adequately survey after movement of radioactive waste containers within the radwaste building (Section 10). This matter indicates a need for more thorough consideration of health physics problems by the health physics technicians.

5. Outage Planning/Preparations

Radiologically significant jobs, in addition to the refueling operation, included decay heat pump seal replacement, forced circulation pump seal replacement, forced circulation pump restraint installation, inservice inspections, control rod drive maintenance, fuel sipping, and neutron shielding modifications.

Although preplanning for these jobs was evident from discussions with licensee personnel, such preparations are not routinely documented for subsequent review. The licensee was encouraged to consider documentation of the health physics aspects of routine and outage specific jobs to promote ALARA efforts. The total personal exposure for the outage appeared normal for licensee outages.

No items of noncompliance or deviations were identified.

6. Training

Review of training records and discussions with licensee personnel indicated that the instructions given to individuals entering restricted areas per 10 CFR 19.12 were adequate. Although only a limited number (about 20) of nonstation personnel were involved in the outage work, processing and orientation requirements (including 10 CFR 19.12 instructions) for these personnel appeared to have required a significant time expenditure by the Health and Safety Supervisor and the Radiation Protection Engineer. This matter was discussed at the exit interview.

No items of noncompliance or deviations were identified.

7. Procedures

The inspectors reviewed selected radiation protection related procedures and observed workers for adherence to procedures. The following problems were identified: (1) The definition of "restricted area" in Volume X of the LACBWR Operating Manual is inconsistent with licensee practices. (2) Two workers were observed to leave the turbine building through the change room without frisking themselves in accordance with posted instructions. (3) The plant stack gas monitor alarm trip point was set at full scale (1E6 cpm) when observed by the inspectors on December 8, 1980, instead of the specified alarm trip point (5.7E3 cpm). The alarm trip point apparently had not been reset following the biweekly monitor check performed the previous week. These items indicate a continuing need to strengthen procedural adherence. This matter has been addressed at recent training sessions and will be included in future training sessions also, according to licensee personnel.

No items of noncompliance or deviations were identified.

8. Exposure Controls

Pencil dosimeters and thermoluminescent dosimeters (TLD) are utilized to monitor personal exposures. Pencil dosimeters are read daily by health physics personnel. Summaries of the pencil dosimeter results are compiled and distributed to operations and maintenance supervisors daily. Earlier in the outage, dose summaries were compiled approximately twice weekly. Through December 9, 1980, the maximum personal whole body exposure for the fourth quarter was 2730 mrem. Approximately 80 man-rems had been accumulated for the outage through December 9, 1980. No exposures exceeding regulatory limits were identified. It appears that the licensee will have more individuals exceeding their five-rem-per-year administrative guideline in 1980 than normal, since: (1) two major outages were conducted in 1980, and (2) additional outage manpower, normally provided from another licensee facility, was not available.

The licensee recently (August 1, 1980) implemented a respiratory protection program in accordance with Regulatory Guide 8.15. Protection factors were used with respiratory protection equipment during this outage. Full-face airline and air purifying respirators were observed in use. Supplied air hoods had been used earlier in the outage. Respiratory protective equipment utilized were NIOSH approved. The inspectors reviewed the licensee's airborne exposure records for the outage. The maximum cumulative individual airborne exposure for the outage was less than five MPC-hours, according to licensee records. Whole body counting is scheduled upon completion of the outage. A limited number of personnel had been counted before leaving the site; no significant internal deposition was identified.

No items of noncompliance were identified.

9. Surveys

In addition to the routine monthly surveys, job-specific, direct radiation surveys were conducted before and during work. These surveys are conducted daily or as dictated by changing plant conditions. Special survey results were recorded on either the SWP or Form L-51. A review of the survey records for the outage revealed no problems.

Smear surveys are taken daily in the turbine, containment, and waste treatment buildings. Surveys of other areas occur less frequently. Although immediate decontamination of surfaces greater than 100,000 dpm/ft² (beta-gamma) is procedurally required, the licensee attempts to decontaminate when floors exceed 2000 dpm/ft².

A review of the smear survey records indicated that smears are taken at the required frequencies, but the records do not always indicate whether areas which exceed the limits noted above are decontaminated and resmeared. This matter was discussed at the exit interview. During this outage, loose contamination on some floors in the containment building approached 100,000 dpm/ft². The licensee plans a major decontamination of the containment building after the outage.

No items of noncompliance were identified.

10. Posting and Control

The inspectors reviewed the licensee's posting and control of radiological hazards, including: radiation areas, high radiation areas, airborne radioactivity areas, and contaminated areas. Postings were generally adequate. One posting discrepancy was identified for failure to post a radiation area outside the radwaste building. (10 CFR 20.203(b)) The area, with radiation levels up to 10 mR/hr at 18 inches from the radwaste building, was identified by the inspectors. Licensee personnel apparently had not conducted a survey of the area after moving several low-level radwaste drums within the radwaste building during the week preceding the inspection. This omission represents noncompliance with 10 CFR 20.201(b). This is a repeat of a similar problem identified about two months earlier during another inspection. ^{1/}

Controls over radiological hazards appeared generally adequate, although improvements appeared desirable in contamination controls. The inspectors experienced shoe contamination exceeding the licensee's decontamination limits on several occasions. Additionally, individuals were observed to leave the radiologically controlled area on two occasions without performing adequate personal contamination surveys. The individuals did not follow posted procedures for personal monitoring using HP-210 friskers upon leaving the controlled plant area through the change room.

^{1/} IE Inspection Report No. 50-409/80-10

Contamination detection instrumentation locations had been changed recently to improve contamination control at the change room. The HP-210 friskers had been moved further away from the protective clothing storage location; a relatively insensitive portal monitor had been removed from the area; and a hand and foot monitor had been moved into the change area. These changes represent positive steps to improve contamination monitoring at the change area. However, one detector channel of the hand and foot monitor was found to have its gain decreased by a factor of approximately five, thereby reducing the detection capability.

11. Noble Gas Release from Oil Storage Room

An unmonitored, unplanned gaseous release occurred on June 29, 1980. The gaseous activity, which originated from the mechanical vacuum pump, escaped through the oil storage room ventilation exhaust after entering the oil storage room through an oil drain line. Ventilation modifications made in 1979 to upgrade fire protection resulted in direct exhaust of the oil storage room to the outside at ground level. Before the ventilation modifications, the oil storage room was ventilated through the plant stack. Release calculations, based on the assumption that approximately 10 percent of the mechanical vacuum pump discharge escaped via the oil storage room ventilation exhaust, indicate a total release of about 25 mCi noble gas activity and a maximum protected area boundary concentration of about 0.5 MPC. Neither the release quantity nor concentration exceeded regulatory limits. However, the release did represent noncompliance with Technical Specification 2.11.2.5, which requires that radioactive gaseous releases be made through the plant stack and be monitored.

Although the potential release path from the oil drain line has been corrected, licensee evaluation of other potential radioactivity sources to the room, such as turbine building air interchange, is necessary to ensure continued compliance with the technical specification requirements. This matter is considered unresolved pending completion of this evaluation by the licensee.

12. Plugged Drain Lines (LER 80-12)

A blockage was discovered in the feedwater pump leakoff lines in early November 1980. The problem subsequently was identified as blockage of a drain header to the 4500-gallon waste water storage tank. The drain header serves equipment and floor drains in a portion of the turbine building. The blockage apparently was introduced during injection of a grout fill material into voids beneath the turbine building several weeks earlier. Efforts to clean out the drain header had been unsuccessful at the time of this inspection.

Two core samples had been taken to check for leakage from the drain header. One sample showed some low-level contamination (2E-6uCi/g Cs-137, 8E-6uCi/g Co-60) in the immediate vicinity of the drain header. Well water samples have not indicated any radioactivity increases. This matter was discussed

during the exit interview and will be reviewed further during a future inspection.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. An unresolved item disclosed during the inspection is discussed in Section 11.

14. Exit Interview

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on December 11, 1980.

The inspectors summarized the scope and findings of the inspection. In response to certain items discussed by the inspector, the licensee:

- a. Stated that several options were being considered to replace the anticipated loss of the Health and Safety Supervisor. The licensee acknowledged the inspectors' concerns that the replacement be made expeditiously. (Section 4).
- b. Stated that increased training was planned to improve health physics technician performance. (Section 4)
- c. Stated that the orientation format for new workers and visitors would be reevaluated in an attempt to reduce the workload on health physics management personnel. (Section 6)
- d. Acknowledged the inspectors' remarks concerning the noncompliance. (Sections 10 and 11)
- e. Stated that procedures and practices would be revised to clarify the restricted area definition. The licensee intends to use the protected area fence as the routine restricted area boundary. (Section 7)
- f. Stated that documentation practices for recording floor decontamination and resurvey efforts would be reviewed. (Section 9)
- g. Acknowledged the inspectors' concerns regarding contamination control practices. (Section 10)
- h. Stated that potential radioactivity releases from the oil storage room would be evaluated. (Section 11)
- i. Stated that efforts to characterize radioactivity released from the turbine building drain line would continue. Ground water sampling in the vicinity of the line is expected to be initiated soon. (Section 12)