DMB

June 15, 1984

Docket No. 50-409

Dairyland Power Cooperative
ATTN: Mr. F. W. Linder
General Manager
2615 East Avenue - South
La Crosse, WI 54601

Gentlemen:

This refers to the routine safety inspection conducted by Mr. R. A. Paul of this office on May 21-24, 1984, of activities at the LaCrosse Boiling Water Reactor authorized by NRC Operating License No. DPR-45 and to the discussion of our findings with Mr. Parkyn and other members of your staff at the conclusion of the inspection.

The enclosed copy of our inspection report identifies areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations, and interviews with personnel.

No items of noncompliance with NRC requirements were identified during the course of this inspection.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure(s) will be placed in the NRC Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1). If we do not hear from you in this regard within the specified periods noted above, a copy of this letter and the enclosed inspection report will be placed in the Public Document Room.

IE:06

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

Sincerely,

C. J. Paperiello

C. J. Paperiello, Chief
Emergency Preparedness and
Radiological Safety Branch

Enclosure: Inspection Report
No. 50-409/84-08(DRMSP)

cc w/encl:
J. Parkyn, Plant Superintendent
DMB/Document Control Desk (RIDS)
Resident Inspector, RIII
John J. Duffy, Chief
Boiler Section
Ness Flores, Chairperson
Wisconsin Public Service
Commission
Spark Burmaster, Coulee
Region Energy Coalition

RIII	RIII	RIII	RIII
Paul/jp	Greger	Boyd	Paperiello
06/13/84			6/15/84

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-409/84-08(DRMSP)

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: May 21-24, 1984

D. E. Miller/for

Inspector: R. A. Paul 6/15/84
Date

D. E. Miller/for

Approved By: L. R. Greger, Chief 6/15/84
Facilities Radiation Protection Section Date

Inspection Summary

Inspection on May 21-24, 1984 (Report No. 50-409/84-08 (DRMSP))
Areas Inspected: Routine, unannounced inspection of operational radiation protection program including: management, staffing, ALARA, exposure control, surveys, posting and controls, licensee action on previous inspection findings, and status of TMI Action Items. The inspection involved 35 inspector-hours onsite by one NRC inspector.
Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

L. Nelson, Radiation Protection Engineering Specialist
*J. Parkyn, Plant Superintendent
*P. Shafer, Radiation Protection Engineer
R. Wery, Quality Assurance Supervisor
*B. Zibung, Health and Safety Supervisor
*J. Wiebe, Senior Resident Inspector

*Denotes those present at the exit interview.

2. General

The onsite inspection, which began at 11:00 a.m. on May 21, 1984, was conducted to examine the licensee's radiation protection activities during normal operations. The inspection included several plant tours, review of posting and labeling, discussions with licensee personnel, review of licensee records and reports, review of personal exposure evaluations, and independent inspection effort by the inspector. The inspection also included a review of certain TMI Action Plan Items.

3. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (409/84-03-04): Failure to properly control a high radiation area with radiation fields exceeding 1000 mrems/hour. A permanent gate/fence was installed at the area. The inspector verified the existence of the fence and that it was maintained locked and properly posted.

(Closed) Noncompliance (409/84-03-02; 409/83-19-01): Failure to place used protective clothing into containers before leaving a controlled area. Color-coded and labeled containers for collection of waste material and washable material have been placed near step-off pads. During several tours of the facility, the inspector noted the containers were at the proper locations and there was no evidence that contaminated clothing was not being collected in the proper containers.

(Closed) Noncompliance (409/84-03-03; 409/83-19-03): Failure to wear lab coats in a controlled area. Workers were reinstructed in the proper use of protective clothing. During several tours of the facility, the inspector noted that all workers were wearing the proper protective clothing.

(Open) Open Item (409/80-10-07): The need to develop a written formal ALARA program. The licensee has outlined several steps to develop an ALARA program in a letter to the NRC dated April 9, 1984. These steps are to be accomplished by August 31, 1984.

(Closed) Open Item (409/84-03-01): The need for a stronger radiation exposure control and surveillance program. Health physics technicians have been instructed to be more cognizant of plant radiation conditions and to identify areas which may require ALARA review and engineering. Health physics management personnel are conducting frequent in-plant tours to identify health physics problems. The inspector verified that health physics surveillance has significantly increased since the previous inspection.

(Open) Open Item (409/83-10-02): Revise Procedure HSP 13.5 "Whole Body Counting" to correct inaccuracies in internal dose equations. Although the procedure was revised in February 1984, several of the discrepancies had not been corrected. These corrections will be made in the near future.

(Open) Open Item (409/84-03-05): Shielding of the FESW cubicle to reduce radiation fields. The lead sheets on top of the FESW filter cubicle were rearranged and an additional 1/8 inch lead sheet was added. Although radiation fields near the cubicle have been reduced, the inspector measured radiation fields up to 5 R/hr near the elbow of the inlet pipe leading from the cubicle at the open penetration of the cubicle and 1 to 2 R/hr 18 inches from the cubicle at chest level. The licensee will determine if the radiation fields can be further reduced in and around the FESW cubicle.

(Open) Open Item (409/83-19-05): Review the criteria used in Regulatory Guide 8.14 "Personnel Neutron Dosimeters" to determine if personnel monitoring is required for certain persons entering neutron radiation areas. Selected personnel will wear neutron dosimetry during the last two calendar quarters of 1984 to determine if personal neutron dosimetry is required, or if the current method of dose assessment (timekeeping in neutron radiation fields) is adequate.

(Open) Open Item (409/83-09-09): Reduce possibly high radiation fields near the post-accident reactor coolant system lines. A facility change will be implemented to relocate and shield the sample station cylinder during the next extended maintenance outage or refueling.

4. Organization and Management Controls

The inspector reviewed the licensee's organization and management controls for radiation protection, including changes in the organizational structure and staffing, effectiveness of procedures and other management techniques used to implement the program, experience concerning self-identification and correction of program implementation weaknesses, and effectiveness of program audits.

The current health physics staff consists of the Radiation Protection Engineer (RPE), the Radiation Protection Engineering Specialist (RPES), the Health and Safety Supervisor (HSS), and six Health Physics Technicians (HPT). A trainee HPT has recently been hired and will begin his training in the near future.

The licensee has changed the organizational structure of the Health and Safety Department. The HSS now reports directly to the Plant Superintendent instead of to the RPE and is now responsible for the day-to-day operation of the Health and Safety Department including the assignment of HPT's. The RPE will continue to report directly to the Plant Superintendent and is responsible for the engineering aspects of the health and safety area. The RPES will continue to report to the RPE and is responsible for providing assistance to the Health and Safety Department. The licensee believes this reporting realignment will improve accountability of Health Physics Department responsibilities and will strengthen the overall function of the health physics program. The effect of this organizational change on the strengthening of the radiation protection program will be reviewed during a future inspection. (409/84-03-01)

The health physics staff qualifications are the same as described in Report No. 50-409/84-03.

No apparent violations were noted.

5. Audits

During the previous inspection (Report No. 50-409/84-03), it was noted that the QA audit program did not appear to include sufficient surveillance of on-the-job activities and plant conditions. Since then, a QA surveillance (HP Surveillance 70-2) of contamination control practices was conducted and the licensee intends to increase periodic QA surveillances of in-plant activities. The inspector reviewed the last QA surveillance records. No problems were noted.

No apparent violations were noted.

6. Maintaining Occupational Exposures ALARA

The inspectors reviewed the licensee's program for maintaining occupational exposures ALARA, including changes in ALARA policy and procedures, worker awareness and involvement in the ALARA program, establishment of goals and program objectives, and program effectiveness.

In a letter from Region III to the licensee, dated March 9, 1984, it was requested that plans to develop a formal ALARA program and a schedule for completion of the actions be addressed. In response, the licensee indicated they will improve the external radiation exposure control, tracking, and ALARA program by: (1) Computerizing radiation dose information from SWPs and categorize person-rem totals by specific function to improve dose accountability. (2) Improving the content of the SWP ALARA review form and developing a formal procedure for the use of the ALARA review form. An SWP ALARA review should be conducted if the job is expected to require between 2.0 and 5.0 person-rems, and will be required if the job is expected to require between 5.0 and 10.0 person-rems. If a job is expected to require greater than 10.0 person-rems, a more intensive Operational Review Committee (ORC) ALARA review will be required. (3)

Conducting a semiannual ALARA review of actual versus projected (goal) exposures which will be reviewed regularly with the Plant Superintendent. Included will be a review of the effectiveness of specific steps that were taken to reduce radiation exposure (ALARA Engineering). (4) Implementing a formal exposure control procedure which will include reduced daily and quarterly administrative dose limits, dose summaries, and alert lists. These lists will be reviewed periodically in Dose Review Meetings with the Plant Superintendent and more frequently during outages or high exposure work. (5) Reviewing the current administrative dose limits to determine if written justification to exceed quarterly administrative dose limits is necessary. (6) Improving documentation of ALARA engineering work which is conducted at LACBWR in ORC minutes and special reports. An ALARA file for specific ALARA engineering reviews has been established. (7) Continuing preoutage planning meetings which include discussion of possible dose reduction techniques, such as special procedures, flushing systems, additional shielding, and pre-job mock-up training. Based on these actions, discussions with workers and some management personnel, and inspector observations, there appears to be increased emphasis and concern for ALARA. These matters were discussed at the exit interview and will be reviewed during at a future inspection (409/80-10-07).

No apparent violations were noted.

7. External Exposure Control and Personal Dosimetry

The inspector reviewed the licensee's external exposure control and personal dosimetry programs, including: changes in facilities, equipment, personnel and procedures; adequacy of the dosimetry program to meet routine needs; and required records, reports, and notifications.

The external exposure measurement and control program consists of whole body and extremity monitoring using thermoluminescent dosimeters (TLDs) and film badges (primary dosimeters), self-reading dosimeters (SRDs) (secondary dosimeters), direct surveys, radiation work permits, and administrative dose limits. The primary dosimeters are processed monthly by a contractor vendor. In most cases, the highest results of the primary dosimeters are assigned to the employee's permanent exposure record.

A review of licensee whole body exposure records from January 1 through April 31, 1984, indicates the highest personal exposure was 2240 mrems. No regulatory requirements were exceeded.

Beginning in 1981, the licensee performed a two-phase dosimeter intercomparison study for several years by giving selected maintenance, operations, and health physics personnel a TLD supplied by contractor (A) along with a TLD and film badge from contractor (B) and an ANSI quality tested SRD. The licensee determined that the results of the first phase (reactor operating) were inconclusive. However, the study indicated that TLD results from Contractor A were lower than the TLD results from Contractor B and the SRDs. The results of the second phase (reactor not operating) indicated the TLDs from Contractor A were consistently lower than those of the TLD and film badges from Contractor B and the licensee's SRDs.

In October 1982, the licensee changed vendors and has used the TLDs and film badges from Contractor B as the primary dosimeter. Since then, the licensee has found considerably better correlation between the primary and secondary dosimeters.

The licensee is continuing to make the dosimeter intercomparison tests. A computer program is used to compare primary and secondary dosimeter results. A 25 percent deviation has been considered generally acceptable and is the criteria the licensee has used to determine the acceptance or rejection of the primary dosimeter results. The primary dosimeter results are used for permanent exposure records. If the absolute 25 percent deviation value is exceeded, then an evaluation is initiated. The licensee intends to proceduralize this dosimeter acceptance criteria, methodology, and practice. This matter was discussed at the exit interview and will be reviewed during a future inspection. (409/84-08-02).

Several employees met with the inspector to express concerns about certain plant practices involving the radiation protection program, including: ALARA, previous exposure history, biological effects of radiation, personnel exposure records, and health physics coverage. The inspector addressed each of the concerns at the exit interview. These matters will be reviewed during a future inspection. (409/84-08-03)

SRDs appear to be tested for accuracy and drift in accordance with the requirements of Procedure HSP 10.1 (Issue 13), which incorporates the performance standards of ANSI N13.5-1972 and Regulatory Guide 8.4

Vendor primary dosimeter spiking is performed monthly. A review of certain personnel dosimetry source calibrations indicated the primary dosimeters are spiked in accordance with the requirements of Procedure HSP-10.2. No significant problems were noted.

No apparent violations were noted.

8. Internal Exposure Control and Assessment

The inspector reviewed the licensee's internal exposure control and assessment programs, including: changes in facilities, equipment, personnel, respiratory protection training, and procedures affecting internal exposure control and personal assessment; determination whether engineering controls, respiratory equipment, and assessment of individual intakes meets regulatory requirements; required records, reports, and notifications; and effectiveness of management techniques used to implement these programs, including experience concerning self-identification and correction of program implementation weaknesses.

The licensee's program for controlling internal exposures includes the use of protective clothing, respirators and equipment, and control of surface and airborne radioactivity. A selected review of air samples and smear survey results was made. No significant problems were noted.

The inspector selectively reviewed the whole body count results for the period January to April 1984. There were no results exceeding the 40 MPC-hour control measure.

A cursory review of the whole body counter (WBC) calibration methodology was performed. The calibration utilized several different isotope gamma sources ranging in energies from 166 to 891 KEV, and the use of a two set anatomical phanthom (upper for lung and lower for stomach). Although the calibration program has been developed, no written procedures have been implemented governing the calibration of the WBC. This matter was discussed at the exit interview and will be reviewed during a future inspection. (409/84-08-04)

The licensee's respiratory program is essentially the same as described in Report No. 50-409/83-10, Section 10. The weaknesses noted in that report are in the process of being corrected. This matter will be reviewed during a future inspection. (409/83-08-05)

No apparent violations were noted.

9. Health Physics Practices

During several tours of the Waste Treatment Building (WTB), Turbine Building (TB) and the Containment Building (CB), only minor radiological problems were observed. The inspector noted that housekeeping of these areas had improved.

One of several steps the licensee has taken to reduce loose floor contamination is to eliminate the policy of reusing contaminated shoe covers. Workers now wear shoe covers inside shoe rubbers or boots. NRC inspectors have considered the practice of reusing contaminated shoe covers as a significant cause of loose floor contamination levels.

No apparent violations were noted.

10. TMI Action Plan Items II.B.2.2, II.F.1.1.B.2, and II.F.1.2.B.2

a. Plant Shielding (II.B.2.2)

The shielding design review for the LaCrosse Boiling Water Reactor was conducted by Nuclear Energy Services, Inc. (NES) in 1980. The study was done in accordance with Section 2.1.6.b of the "TMI-2 Lessons Learned Task Force Status Report and Short Term Recommendations" (NUREG-0578) and the plant shielding requirements of NUREG-0737. The NES reviews concluded that no design modifications were needed to permit access to vital areas under post-accident conditions. During this inspection, the licensee was requested to show that radiation fields produced in the reactor coolant lines were considered in the NES or licensee shielding studies. The licensee stated they will review the studies to determine if these radiation fields were considered. (409/84-08-06)

b. Noble Gas Effluent Monitor (II.F.1.1.B.2)

This item is discussed in Reports No. 50-409/82-14; 50-409/83-07; and 50-409/83-10. A review of the use of the SPING-4's, high range noble gas monitoring system, calculational methods for converting instrument readings into release rates, and use of Volume X of the Operation Manual and EPIP-5 is necessary before it can be determined whether the licensee has met the requirements of clarification Item 4(b). This item remains open pending further review of this matter. (409/84-08-07)

c. Sampling and Analysis of Plant Effluents (II.F.1.2.B.2)

In a letter to Region III dated June 30, 1983, the licensee stated they could meet the requirements of clarification Item 2 without exceeding GDC 19 dose limits. However, the licensee did not use the design basis shielding envelope described in Table II.F.1-2 of NUREG-0737 when concluding that radiation exposures would not exceed 5 rems whole body and 75 rems extremity during sample removal, replacement, and transport of the filter collection media. Instead, the licensee used an accident scenario condition specific to their facility. This appears to be in conflict with NUREG-0737. The licensee was requested to resolve this matter by notifying NRR of their analysis assumptions. This matter remains unresolved pending NRR's review of the licensee's submittal. (409/84-08-08)

No apparent violations were noted.

11. Exit Interview

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on May 24, 1984. The inspector summarized the scope and findings of the inspection. In response to certain items discussed by the inspector, the licensee:

(1) Acknowledged the inspector's comments concerning their actions taken for ALARA. (Section 5)

(2) Confirmed that a procedure incorporating dosimeter acceptance criteria would be developed. (Section 7)

(3) Stated that a formal mechanism will be developed for workers to initiate ALARA suggestions which will be acknowledged by the plant staff. (Section 7)

(4) Stated that plant management will inform the workers by August 1984 if employee permanent exposure records will be changed on the results of the dosimeter intercomparison studies. (Section 7)

(5) Stated that training concerning biological effects of radiation has been given to all radiation workers; however, additional training in this area will be considered. (Section 7)

(6) Stated that personal exposure histories have been, and will continue to be, available to each worker requesting review of their exposure records. (Section 7)

(7) Stated that a written procedure outlining the calibration methodolgy for the whole body counter would be developed. (Section 8)