U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-266/88013(DRSS); 50-301/88012(DRSS)

Docket Nos. 50-266; 50-301 Licenses No. DPR-24; DPR-27

Licensee: Wisconsin Electric Power Company
231 West Michigan
Milwaukee, WI 53201

Facility Name: Point Beach Nuclear Plant (PBNP)

Inspection At: PBNP; Units 1 and 2, Two Rivers, Wisconsin

Inspection Conducted: April 18-22, 1988

Inspector: C. F. Gill/for
R. A. Paul
Date 5/19/88

Accompanied By: W. W. Ogg

Approved By: C. F. Gill/for
L. R. Greger, Chief
Facilities Radiation Protection Section
Date 5/19/88

Inspection Summary

Inspection on April 18-22, 1988 (Reports No. 50-266/88013(DRSS); No. 50-301/88012(DRSS))
Areas Inspected: Routine, unannounced inspection of radiation protection implementation during a refueling outage, including: organization and management controls (IP 83722); changes in organization, personnel, facilities, equipment, and procedures (IP 83727, 83729); planning and preparation (IP 83729); training and qualifications of contractor personnel (IP 83723); internal and external exposure control (IP 83729); control of radioactive materials and contamination (IP 83729); and the ALARA program (IP 83728).
Results: One procedural violation with two examples was identified (failure to have a flashing red light as a warning device in a HRA; failure to post and control two HRAs during fuel transfer - Section 11). The violation is not indicative of programmatic problems. The licensee's radiation protection program continues to be effective in protecting the health and safety of occupational workers. The licensee's ALARA measures appeared effective for reducing personnel exposures.

DETAILS

1. Persons Contacted

*M. Baumann, Radiological Engineer
*R. Bredvad, Plant Health Physicist
L. Epstein, Senior Training Specialist
E. Epstein, Specialist Nuclear
*D. Johnson, Superintendent, Health Physics
J. Knorr, Regulatory Engineer, Nuclear Plant Engineer
*J. Zach, Plant Manager

*R. Hague, NRC Senior Resident Inspector
*R. Leemon, NRC Resident Inspector

The inspectors also contacted other licensee and contractor personnel during the inspection.

*Denotes those present at the exit meeting held on April 22, 1988.

2. General

This inspection was conducted to review the radiation protection program during a refueling outage, including organization and management controls, planning and preparation, qualifications and training, internal and external exposure controls, ALARA, and control of radioactive material and contamination. Open items were also reviewed. During plant tours, one violation of an access control/posting procedure was identified (Section 11); housekeeping was good.

3. Licensee Action on Previously Identified Open Items (IP 92701)

(Closed) Open Item (266/87019-01; 301/87019-01): Actions taken as a result of vendor TLD results that were consistently lower than licensee calculated values for spiked TLDs. The inspectors reviewed the results of a corporate QA audit of the TLD vendor. Although the vendor's results have actually been within the 50% tolerance allowed by ANSI N13.11-1983, the vendor nevertheless made a calibration correction to his production (tertiary) source. After this correction, the inspectors noted upon a review of data that both the licensee spikes and the spikes he obtains from NBS and sends to the vendor were well within 10% of calculated values.

(Closed) Open Item (266/87019-02; 301/87019-02): Results of the licensee's evaluation to determine the adequacy of the RMS surveillance program. The licensee has completed the evaluation and made major procedural changes and modifications to strengthen the program.

(Closed) Open Item (266/88003-01; 301/88003-01): Review audit report and implementation of corrective actions as a result of the QA audit performed in December 1987. The inspectors selectively reviewed the licensee's corrective actions; no problems were noted. QA closed the item.

(Closed) Open Item (266/88003-02; 301/88003-02): Licensee evaluation of personal exposures in excess of administrative limits. Based on the inspectors' review of this matter it appears the licensee thoroughly investigated the exposures, took a conservative approach in quantifying the reported personal exposures, and instituted appropriate corrective actions.

(Closed) Open Item (266/88003-03; 301/88003-03): Calibration of new Eberline PCM-1B contamination monitors. During this inspection, the inspectors verified that adequate calibrations have been performed in accordance with procedural requirements.

(Closed) Open Item (266/88003-05; 301/88003-05): Review actions taken to correct weaknesses in the container labelling program. The licensee no longer mixes nonradioactive protective clothing with radioactive protective clothing in Radioactive Material labeled barrels; nonradioactive clothing is now placed in unlabeled barrels of a different color.

(Closed) Open Item (266/88003-06; 301/88003-06): Followup of sewage treatment sludge removal disposal. The licensee developed procedures to ensure that sewage treatment sludge is disposed of in accordance with commitments made to the NRC. Based on inspector review it appears sludge has been disposed of in accordance with these requirements.

4. Changes in Organization, Personnel, Facilities Equipment, Programs and Procedures (IP 83727, 83729)

Since the previous inspection (Inspection Reports No. 50-266/88003; 50-301/88003) there has been no significant change in organization and management; the staff has remained stable

The new whole body friskers have been installed, calibrated, and are operable (see Section 3). The inspectors reviewed calibration and implementing procedures for the monitors; they appeared adequate.

The licensee has initiated over fifty revised procedures in 1987 and 1988 to date as part of the program to properly categorize and improve radiological control procedures. The inspectors selectively reviewed these procedures and found them to be comprehensive and practical for use.

No violations or deviations were identified.

5. Training and Qualification of New Personnel (IP 83729, 83723)

The inspectors reviewed the licensee's selection criteria and the education and experience qualifications of contract radiation protection personnel and training provided to them. Licensee selection of contracted radiation protection technicians includes review of technicians' resumes to determine conformance to ANSI 18.1-1971 criteria. If the incoming contract technician was on site for the previous outage, training was waived. Approximately one-half the contract technicians for this outage were returnees. For prospective non-returnee applicants the licensee obtains input about the applicant from health physics supervision of the applicant's former work sites.

Duration of training for non-returnee health physics technicians was 10 days which included GET, classes on site-specifics and practical qualification tests for the specific assigned tasks which the technician will perform during the outage. The inspectors reviewed tests given and their results. Tests appeared adequately comprehensive.

The licensee training representative stated that the licensee had recruited 15 new operator trainees scheduled to come on site in late May. However, five of them were brought in early to work in the laundry during this outage. At present, auxiliary operator trainees will continue to receive six months of health physics related training: 1 month classroom, 3 months OJT with qualification tests, and 3 months working with health physics. The inspector reviewed the results of exam "TRCR 83.0 Health Physics Worker Exam" given the five. The questions appeared good, with emphasis on health physics practice and industrial safety.

The licensee indicated that the plant health physics technicians attended an 8-hour training session in January concerning hot particles. The training included basic instructions on how to handle hot particle contamination, its sources, and its significance.

No violations or deviations were identified.

6. Planning and Preparation (IP 83729)

The inspectors reviewed the refueling outage planning and preparation performed by the licensee, including: additional staffing, special training, increased equipment supplies, and job related health physics considerations.

The station's radiation protection group was augmented with twenty-one contract health physics workers and five future equipment operator trainees to provide more surveillance and control over radiological activities for the outage. The station implemented adequate coordination between the station radiation protection department and contract health physics workers. Observation of many of these workers performing radiological control functions and

performing surveys indicated adequate controls were implemented and maintained, and surveys were properly performed. Discussions held with many of these workers indicated a good knowledge of plant layout controls and procedures.

No violations or deviations were identified.

7. ALARA (IP 83728 and 83729)

Operational health physics personnel participated in preplanning meetings and were involved in major radiation jobs in advance of the refueling outage. The licensee performed ALARA reviews of significant jobs, including the steam generator handhole modification, and the steam generator eddy current work. The licensee used ultrasonic test equipment to test for leaking fuel assemblies and reduced transferable contamination levels in various areas before outage activities began. The licensee also intends to decontaminate the reactor cavity at the end of the outage. It appeared that cooperation between work groups was sufficient, and management support for ALARA measures was good.

No violations or deviations were identified.

8. External Exposure Control and Personal Dosimetry (IP 83729, 83724)

The inspectors reviewed the licensee's external exposure control and personal dosimetry programs, including: changes in the program to meet outage needs; use of dosimetry; planning and preparation for maintenance and refueling tasks including ALARA considerations; and required records, reports and notifications.

For work in the lower level of containment the licensee established a temporary radiation protection control station to control RWP work. Normally two to four contract HP personnel manned this station. The station was equipped with sufficient monitoring equipment to support ongoing work. The quantity and quality of direct radiation surveys appeared sufficient to determine conditions for RWP work.

Approximately 110 person-rems were accumulated through May 1, 1988; the station goal for 1988 is 400 person-rems. In 1988 to date, no one has exceeded an administrative or regulatory exposure limit.

The inspectors reviewed NRC Form 4's for 21 contract health physics technicians. The records appear to be complete, accurate, and in conformance with requirements; no problems were noted.

No violations or deviations were identified,

9. Internal Exposure Control and Assessment (IP 83729)

The inspectors reviewed selected aspects of the licensee's internal exposure control and assessment programs, including: determination whether engineering controls, respiratory equipment, and intake assessments meet regulatory requirements, and ALARA planning and preparation for maintenance refueling tasks.

The licensee's programs for controlling internal exposures during this outage include the use of protective clothing, respirators, and portable ventilation equipment as well as control of surface and airborne radioactivity. The inspectors selectively reviewed the licensee's air sample and survey program for work activities. It appears that sufficient air samples are collected and analyzed, and that sufficient direct and smear surveys are performed.

The licensee used their commercial whole-body counter during this outage for baseline counting of incoming contractor personnel. The inspectors observed whole-body counting of several workers and selectively reviewed whole-body count results. No person exceeded the 40 MPC-hour control measure and no significant internal depositions were identified. Contractor and nonstation personnel are counted when they complete their work at the station.

A cursory check of respirators that were ready for use showed that respirator inspection, storage, and maintenance was adequate. RWPs for certain work functions appeared to adequately reflect the respiratory requirements for the job. Provisions are made during the respirator issuance and return cycle for MPC-hour accountability; no problems were noted concerning respirators not being properly returned.

No violations or deviations were identified.

10. Control of Radioactive Materials and Contamination (IP 83729, 83726)

The inspectors reviewed the licensee's program for control of radioactive materials and contamination, including: changes in instrumentation, equipment, and procedures; effectiveness of survey methods, practices, equipment, and procedures; effectiveness of methods of control of radioactive and contaminated materials; management techniques used to implement the program; and experience concerning self-identification and correction of program implementation weaknesses.

The licensee's use of the RWP is a principal means of control of radioactive materials and contamination. Licensee RWP's automatically terminate at the end of a shift unless extended by HP supervision; new radiological surveys are performed to confirm/update conditions. The inspectors examined performance under more than 10 RWP's; no problems were identified.

The inspectors reviewed data and documentation generated by licensee Standing Order HPS09 "Health Physics Survey Schedule" which governs routine weekly radiological surveys and monitoring, including air sampling. The schedule appears comprehensive and the work appears to have been performed timely. Calibration of a representative sampling of portable and fixed instruments used for these surveys was examined; no problems were noted.

The inspectors interviewed two senior health physics staff members concerning the status of radiological surveys for discrete radioactive particles (hot particles). Historically, the licensee has found only a few particles; however, several hot particle personnel contaminations occurred during the past year. The licensee purchased and installed more sensitive automatic whole body friskers recently; as a result more low level contamination events are being identified. The licensee has historically surveyed plant areas extensively, including overheads (several hundred smears in 1985), and Containment and Auxiliary Building (masslin wipes in early 1988), and found no significant contamination. The inspectors noted that the licensee appears to have developed an adequate program for hot particle detection, decontamination, and dose calculation.

The licensee uses four personnel contamination forms (39 (a), 39 (b), 39 (c), and 39 (d)) to cover reporting of personnel contamination found as a result of direct frisk, portal monitor, whole body counter, and PCM-1B. The licensee stated they are revising these forms so that contamination from discrete particles will be appropriately documented. The inspectors examined records for 1988 to date of approximately 80 personnel contamination events, all of which were resolved by appropriate followup surveys/decontamination/whole body counting. The inspectors noted that the majority of reasons given for cause of contamination was "unknown". The licensee representative acknowledged that the number of "unknowns" appeared inordinately large. This matter will be reviewed during a future inspection and was discussed in the exit interview. (Open Item 266/88013-01; 301/88012-01)

Protective clothing is laundered at the licensee's facility by health physics personnel using a dry cleaning unit. The licensee appeared to have an adequate supply of PCs available for the outage. The inspectors observed workers using hand held friskers to survey the laundered material; no problems were noted.

No violations or deviations were identified.

11. Surveillance - Plant Tours - Independent Surveys

While performing surveys on the containment 66-foot level during fuel element transfer from the Unit 1 reactor, the inspectors observed that a procedurally required flashing red light used as a warning device in HRAs where radiation fields exceed 1000 mrem/hr was installed but not in use. The red light device was located at the gap between the containment wall and floor inside a posted rope barrier. This area is adjacent to the walkway over the fuel transfer tube. Radiation fields in the area ranged up to 6000 mrem/hr during fuel transfer; this is a violation of HP Procedure 3.2 "Posting of Radiological Areas". (Violation No. 266/88013-02) The inspector also noted that access controls and postings for HRAs due to fuel transfers were based on historical surveys performed during previous fuel movements. Inasmuch as these surveys were performed to identify containment and auxiliary building radiation fields

during normal fuel transfers and in case a fuel element was hung up in the transfer mode, the licensee was requested to perform surveys when the fuel element was stationary in the transfer tube to allow conduct of more extensive surveys. The results of these surveys indicated the rope barrier used for posting and control of areas exceeding 100 mR/hr was inadequately positioned because dose rates of 200 mR/hr were found at the east end of the barrier located over the fuel transfer tube. In addition, other radiation fields exceeding 100 mR/hr were identified near the spent fuel pool and on the 46-foot level; these areas had not been previously identified as areas exceeding transient 100 mR/hr fields and consequently were they posted and controlled as such. This is a Violation of Procedure HP 3.2 which requires that transient radiation fields exceeding 100 mR/hr be conspicuously posted and controlled. (Violation No. 266/88013-02)

With the exception of the above noted problem, other areas of the station, including the basement of containment in which several RWP jobs were initiated, hot spot and high radiation areas were adequately posted and controlled.

Inspector observations of ingress and egress activities at the RCA boundary, and other SOP areas indicated that workers were adhering to dress and frisking requirements. Several RWP jobs were followed and observations were made of workers performing outage activities; workers appeared to be adhering to RWP and procedural requirements.

The inspectors performed direct radiation surveys of equipment and selected areas in the containment and auxiliary buildings; survey results were consistent with postings. Smear surveys were performed in the same areas; no detectable contamination was found.

One violation was identified.

12. Exit Meeting (30703)

The inspectors met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on April 22, 1988. The inspectors summarized the scope and findings of the inspection and also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary. In response to certain items discussed by the inspectors, the licensee:

a. acknowledged the procedural violation (Section 11).

b. Committed to perform more in-depth review of personnel contamination events to determine root causes (Section 10).