

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Reports No: 50-266/97008(DRS); 50-301/97008(DRS)

Licensee: Wisconsin Electric Power Company

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: 6610 Nuclear Road
Two Rivers, WI 54241

Dates: May 5-9, 1997

Inspectors: R. Paul, Senior Radiation Specialist
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Approved by: G. Shear, Chief, Plant Support Branch 2
Division of Reactor Safety

EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Units 1 & 2
NRC Inspection Reports 50-266/97008; 50-301/97008

This announced inspection included a review of high radiation area controls, the solid radwaste program, transportation of radwaste, and the radiation protection program. The following specific observations were made:

- Continuing problems with high radiation area controls were identified as a contract painter entered several posted high radiation areas while on the Radiologically Controlled Area Entry Permit, which did not authorize entry into those areas. One violation was identified (Section R1.1).
- The inspectors identified a violation in which, the licensee failed to provide recurrent training for contractor health physics technicians assigned to radwaste in accordance with Department of Transportation requirements (Section R8.1).
- As a result of the high radiation area problems, the licensee reconfigured access to the radiologically controlled area, so that individuals pass by the health physics station to inform a technician where they are going and the type of work to be performed. This has had a positive impact with increased communication between workers and health physics (Section R2.1).
- The licensee effectively implemented the external dose program. ALARA reviews were performed and identified radiological hot spots which could impact work being performed. The licensee has good procedures in place to evaluate exposures from hot particles (Section R1.2).
- The solid radwaste program was being implemented as described in the Process Control Program. The material condition of tanks and equipment in demineralizer and processing radwaste tank cubicles was good (Section R1.3).
- The continuing training program for the licensee's health physics technicians was effectively implemented. However, the licensee identified, that contractor technicians initial qualification cards were not completely signed-off and took corrective actions (Section R5.1).
- A comprehensive audit of the health physics program identified several areas with minor deficiencies and provided recommendations for improvement. Corrective actions in response to recommendations are being implemented (Section R7.1).

Report Details

R1 Radiological Protection and Chemistry (RP&C) Controls

R1.1 High Radiation Area Boundary Incident

a. Inspection Scope (83750)

The inspectors reviewed and discussed with licensee personnel an incident where an individual entered a posted high radiation area (HRA) in the radiologically controlled area (RCA) of the primary auxiliary building (PAB) to perform painting functions without proper authorization.

b. Observation and Findings

On April 8, 1997, the licensee identified that a contract painter entered the Unit 1 Mixed Bed Demineralizer cubicle on April 7, 1997, which was posted as a HRA-RWP (radiation work permit) required. Upon further review the licensee identified that additional posted HRAs had also been entered by the contract painter. These areas were Spent Fuel Pool Demineralizer cubicle, Unit 1 Reactor Coolant Filter cubicle; Unit 2 Reactor Coolant Filter cubicle, and Reactor Coolant Pump Seal Water Supply Filter cubicle. Of these areas, only the Spent Fuel Pool Demineralizer Filter cubicle was an actual HRA with a dose rate of 150 mrem/hr at 30 centimeters (cm) from the locked door. The contract painter crew had access to the RCA through the licensee's Radiologically Controlled Area Entry Permit (RCAEP), which does not authorize entry into HRAs. The painters were not signed on to a specific RWP. The contract painters possessed self reading dosimeters (SRDs) and thermoluminescent dosimeters (TLDs), but did not possess a high range SRD or electronic dosimeter as would be required for entry into HRA-RWP required areas. Immediate corrective actions taken by the licensee were to temporarily suspend the contract painters access to the RCA, send the painters TLDs for processing, and to perform a root cause evaluation. The TLD results for the painter who entered the HRAs were 30 mrem for the first quarter of 1997 and 20 mrem for the period April 1-8, 1997. The painter's total dose of 50 mrem for 1997, was 20 mrem higher than the nearest coworker's dose for the same periods.

Technical Specification (TS) 15.6.11 states, in part, that radiological control procedures shall be written and made available to all station personnel. Health Physics Manual Procedure HP 2.5.6, Revision 3, states that radiation workers are responsible for complying with the requirements of the Radiologically Controlled Area Entry Permit (RCAEP). The RCAEP revised January 2, 1997, states that entering high radiation areas under this entry permit is an unauthorized work activity. Entry into an area posted as a high radiation area while on the RCAEP is a violation of Technical Specification 15.6.11 (VIO 52-266/97008-01(DRS); 50-301/97008-01(DRS)).

The licensee performed a common cause analysis to determine root causes of the continuing HRA boundary incidents. Preliminary results included the following root causes: (1) inadequate management expectations for worker performance; (2) lack

of management support for the radiation protection program; (3) lack of communication between health physics and the painters; (4) inadequate work oversight; and (5) lack of clear health physics procedures and policies. The licensee's immediate corrective actions to the common cause analysis were to reconfigure the RCA access point so that individuals have to pass by a Health Physics Technician (HPT) greeter; require all newly trained radiation workers to attend an health physics orientation prior to unescorted access to the RCA, use of a HPT rover by health physics, and issue a memo to all personnel from the plant manager on expectations for radiation workers. In addition, the licensee has retrained all contract painters in radiation worker practices prior to restoring their access to the RCA.

c. Conclusions

One violation was identified for entering a posted HRA while on the RCAEP. The licensee performed a common cause analysis to determine root causes of the continuing HRA boundary incidents. The licensee has implemented corrective actions based on the preliminary results of the common cause analysis.

R1.2 External Dose Control and ALARA Implementation

a. Inspection Scope (83750)

The inspectors reviewed the licensee's program for controlling external dose to workers. This included a review of individual dose records, the process for evaluating lost or off-scale SRDs or lost TLDs, comparison of SRD and TLD results, hot particle evaluations, and hot spot reduction programs.

b. Findings

The inspectors' review of selected individual dose records did not identify any doses that exceeded licensee administrative limits. The licensee's total dose for the first quarter of 1997 was 31.1 person-rem, with a 1997 goal of 185 person-rem. The licensee has procedures in place to evaluate lost TLDs and SRDs. A review of records revealed that the licensee has performed evaluations in accordance with procedures when dosimetry is lost. The licensee compared SRD and TLD doses in accordance with procedures and performed evaluations when SRD/TLD ratios were outside the procedural limits. The licensee has good procedures in place to evaluate and document exposures from hot particles. The licensee performs approximately 6 hot particle evaluations per year, with none performed recently. The licensee files the evaluations in the employee's exposure file and does not maintain a log, therefore it is difficult for the licensee to retrieve the evaluations. Locations of hot spots are reviewed as part of the ALARA review for jobs. Protective measures such as shielding or flushing of hot spots were performed to reduce dose rates when there could be an impact on worker doses.

c. Conclusions

The licensee effectively implemented the external dose program. ALARA reviews were performed and identified radiological hot spots which could impact work being

performed. The licensee has good procedures in place to evaluate exposures from hot particles.

R1.3 Implementation of the Solid Radioactive Waste Program

a. Inspection Scope (86750)

The inspectors reviewed the licensee's solid radioactive waste (radwaste) program as described in the USAR and the Process Control Program (PCP), and inspected demineralizer and processing radwaste tank cubicles.

b. Observations and Findings

The licensee's radwaste included Dry Active Waste (DAW), evaporator concentrates, spent resins, and process stream filters. Spent resins and filters were dewatered onsite, using a vendor system, and DAW was sent to an offsite contractor for processing. Waste not immediately sent for processing was stored in the radwaste area or immediately outside the PAB truck bay in sea land vans, which were appropriately posted and secured. The 10 CFR Part 61 sampling and analysis program was conducted in accordance with the PCP and Radioactive Materials Handling Manual, Procedures RDW 18.1.1 and 18.2. The inspectors observed generally good housekeeping and appropriate posting and labeling in the radwaste storage and processing areas.

The inspectors observed a spent resin transfer from a radwaste holding tank to the radwaste shielded High Integrity Container (HIC), verified that the dewatering system was operated in accordance with procedural requirements, and that system operators were knowledgeable about the system. During the transfer, an unexpected high alarm sounded and the transfer was automatically shutdown when the high level shutoff valve isolated the transfer. The reason for the high water/resin level in the HIC was the inability of the radwaste dewatering pump to maintain the same flow rate of the slurry pumped from the holding tank. No resin or water was spilled because the shutoff valve operated as designed. The licensee wrote a condition report for this event to evaluate the adequacy of existing transfer procedures and to determine if they can safely transfer resin to the HIC while controlling the slurry level in the HIC below the high level alarm setpoint. The inspectors also noted during their pre-job briefing for the transfer evolution, that specific contingencies concerning actions to be taken if significant problems arose during the transfer were not discussed.

The inspectors toured all radwaste demineralizer and processing radwaste tank cubicles. The cubicles were accessible as the spent resins had been transferred to a holding tank (controlled as HRA). The inspectors verified that the integrity and material condition of the tanks were good and that there were no visible indications of resin leakage from the tanks. The licensee had recently initiated a program to periodically inspect infrequently accessed cubicles and rooms to access system integrity.

c. Conclusions

The inspectors concluded that the solid radwaste program was being implemented as described in the PCP. The material condition of tanks and equipment in demineralizer and processing radwaste tank cubicles was good.

R2 Status of RP&C Facilities and Equipment

R2.1 General Tours of Primary Auxiliary Building (83750)

The inspectors performed several inspections of activities in the PAB, including several demineralizer cubicles (Discussed in Section R1.3 above), and observed radiation worker practices. Radiological posting and boundaries in the PAB were generally well maintained and housekeeping was good. Observed workers demonstrated knowledge of radiological conditions. Personnel were wearing the appropriate dosimetry.

The licensee reconfigured access to the RCA, so that individuals pass by the HP station to inform a HPT greeter where they are going and the type of work to be performed. From discussion with workers and HPT greeters, it appeared that this change has had a positive impact with increased communication between HP and workers.

R5 Staff Training and Qualification in RP&C

R5.1 Technician Training

a. Inspection Scope (83750)

The inspectors reviewed training programs for licensee technicians and contract technicians. This included a review of training records, and discussions with technicians.

b. Observations and Findings

The licensee has not hired any HPTs for approximately 6 years. The licensee has a program in place to provide continuing training to the HP staff. A review of training records indicated that the continuing training program for licensee HPTs was effectively implemented. However, the licensee identified, through a self assessment, that contractor technicians initial qualification cards were not completely signed-off. The licensee's review indicated that while the cards were not signed-off, the technicians have performed the duties competently. The licensee intends to complete the qualification cards after the technicians adequately perform the tasks in question. Until the sign-offs are complete, technicians will be prohibited from independently performing those tasks not signed-off.

c. Conclusions

The technician training program was effectively implemented except for the documentation of contractor qualification cards. This had been identified by the licensee and corrective actions were implemented.

R7 Quality Assurance in RP&C activities

R7.1 Health Physics Department Audit

a. Inspection Scope (83750)

The inspectors attended an exit meeting where the preliminary results of an HP department audit were presented. This was a comprehensive audit which included a program review of radiation contamination monitoring, RWP control and processing, waste disposal, dosimetry and ALARA, respiratory protection, radiological environmental program, instrument calibration, and technical specification requirements. This audit was performed by a team comprised of licensee personnel from the station and its headquarters, and individuals from outside the licensee's organization. The audit team identified several areas where improvements in the program could be made and initiated several condition reports. The HP department manager indicated that corrective actions to the condition reports and other areas will be implemented. The inspectors noted that the audit appeared comprehensive and that corrective actions in response to recommendations and condition reports should strengthen the HP program.

R8 Miscellaneous RP&C Issues

R8.1 Implementation of Revised 49 CFR Parts 100-179 and 10 CFR Part 71

a. Inspection Scope (TI 2515/133)

The inspectors reviewed the licensee's transportation program for the implementation of the revised Department of Transportation (DOT) and NRC transportation regulations for shipments of radioactive materials.

b. Observations and Findings

The inspectors verified that station procedures correctly referenced the revised Department of Transportation (DOT) requirements and, through interviews, that workers responsible for shipping were cognizant of these requirements. Overall, the procedures effectively incorporated the changes in the classification and transportation of LSA material and implemented the use of SI units as required in 49 CFR 172.203(d)(4). The inspectors reviewed selected 1996 and 1997 shipments and noted that documentation for several LSA material and SCO shipments contained required information. The licensee used a vendor computer program (RADMAN) to classify shipments and maintained current files of certificates of compliance for high integrity containers (HICs), shipping cask licenses, and burial site regulations.

The licensee's training program was comprehensive in content and effectively addressed the regulations; personnel interviewed by the inspectors had an acceptable understanding of the requirements. However, the inspectors identified that current contractor technicians who are assigned to radwaste, and are considered hazmat employees, had not been provided periodic training as required by 49 CFR Part 172. The regulation requires all DOT defined hazmat employees to receive recurrent training every three years. The last time contractor technicians were trained at the station to meet these requirements was in 1991. Failure to provide this training is a violation of 49 CFR 172.704(c)(2). (VIO 52-266/97008-02(DRS); 50-301/97008-02(DRS)).

c. Conclusions

With the exception of the violation of DOT training requirements, the licensee's transportation program was effective in meeting the revised DOT and NRC transportation regulations for shipments of radioactive materials.

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on May 9, 1997. The licensee acknowledged the findings presented.

The licensee did not identify any information discussed as being proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

A. J. Cayia, Plant Manager
E. J. Epstein, Health Physics Specialist
F. A. Flentje, Regulatory Specialist
S. P. Johnson, Training Specialist
E. J. Lange, Health Physics Supervisor
T. A. Smith, Health Physics Supervisor
S. J. Thomas, Health Physics Specialist
P. B. Tindall, Manager, Chemistry and Health Physics

INSPECTION PROCEDURES USED

IP 83750 Occupational Radiation Exposure
IP 86750 Solid Radioactive Waste Management and
Transportation of Radioactive Materials
IP 92904 Followup-Plant Support
TI 2515/133 Implementation of Revised 49 CFR Parts 100-179
and 10 CFR part 71

LIST OF ITEMS OPENED AND CLOSED

Opened

50-266(301)/97008-01	VIO	The failure to follow a Health Physics procedure and the Radiologically Controlled Area Entry Permit is a violation of Technical Specification 15.6.11
50-266(301)/97008-02	VIO	The failure to provide hazmat training to contractor HPTs working in radwaste once every three years is a violation of 49 CFR 172.704(c)(2).

LIST OF DOCUMENTS REVIEWED

Condition Report No. 97-1132

Condition Report No. 97-1525

Condition Report No. 97-1540

Health Physics Implementing Procedure, HPIP 1.51, Revision 6, "SRD-TLD Comparison"

Health Physics Implementing Procedure, HPIP 1.60, Revision 7, "Calculating Shallow and Deep Dose Rates Due to Skin Contamination"

Health Physics Implementing Procedure, HPIP 1.70, Revision 3, "Completion of Forms NRC-4 and NRC-5"

Health Physics Manual, HP 2.15, Revision 3, "Control of Personnel Exposure to High Level Contamination, Hot Particles, and Activated or Fission Product Debris"

Health Physics Manual, HP 2.15.1, Revision 3, "Implementation of Control Program for High Level Contamination, Hot Particles, and Activated or Fission Product Debris"

Health Physics Manual, HP 2.15.2, Revision 3, "Action Levels for Response to Incidents Involving High Levels of Contamination, Hot Particles and Activated or Fission Product Debris"

Health Physics Manual, HP 2.5.6, Revision 3, "Radiologically Controlled Area Entry Permit"

Health Physics Radiologically Controlled Area Orientation Checklist

Nuclear Procedures Manual, NP 4.2.19, Revision 1, "General Rules for Work in a Radiologically Controlled Area"

Personnel Dosimetry Records

Process Control Program Manual

Radioactive Material Handling Manual, RDW 17.3, Revision 50, "Processing Bead Resin by Dewatering"

Radioactive Material Handling Manual, RDW 18.1.1, Revision 1, "10 CFR 61 Sampling Program"

Radioactive Material Handling Manual, RDW 18.2, Revision 1, "Radwaste Classification, Shipment Type and Waste Stability Determination"

Radiologically Controlled Area Entry Permit, January 1 - December 31, 1997

Technical Specification 15.6.11, "Radiation Protection Program"

Updated Safety Analysis Report, June 1992, Section 11, "Waste Disposal and Radiation Protection System"