

March 21, 2000

Mr. M. Reddemann
Site Vice President
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: NRC RADIATION PROTECTION INSPECTION REPORT
50-266/2000005(DRS); 50-301/2000005(DRS)

Dear Mr. Reddemann:

On February 25, 2000, the NRC completed a routine inspection of the radiation protection program at your Point Beach Nuclear Plant. The results of this inspection were discussed on that date with Mr. Mende and other members of your staff. The enclosed report presents the results of this inspection. Based on this inspection, no violations of NRC requirements were identified.

The inspection was an examination of activities conducted under your license as they relate to radiation safety, to compliance with the Commission's rules and regulations, and with the conditions of your license. The inspection consisted of a review of the solid radioactive waste processing and control program and the radioactive material transportation program. The inspection also included a review of the work activities conducted during the Unit 1 'A' steam generator forced outage. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities, independent measurements, and interviews with personnel.

We concluded that programs for solid radioactive waste processing and waste control, and for radioactive material transportation were effectively implemented. In particular, licensee personnel were knowledgeable regarding radioactive waste processing and transportation requirements due to an effective training program, and efforts to reduce the generation of radioactive waste were successful. We also concluded that the planning and pre-job briefing for the steam generator manway removal and bowel inspection were effective, resulting in workers who were knowledgeable regarding radiological hazards.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

M. Reddemann

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

Sincerely,

/RA/

Wayne Slawinski, Acting Chief
Plant Support Branch

Docket Nos. 50-266; 50-301
License Nos. DPR-24; DPR-27

Enclosure: Inspection Report 50-266/2000005(DRS);
50-301/2000005(DRS)

cc w/encl: R. Grigg, President and Chief
Operating Officer, WEPCo
M. Sellman, Senior Vice President,
Chief Nuclear Officer
R. Mende, Plant Manager
J. O'Neill, Jr., Shaw, Pittman,
Potts & Trowbridge
K. Duveneck, Town Chairman
Town of Two Creeks
B. Burks, P.E., Director
Bureau of Field Operations
J. Mettner, Chairman, Wisconsin
Public Service Commission
S. Jenkins, Electric Division
Wisconsin Public Service Commission
State Liaison Officer

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-266; 50-301
License Nos: DPR-24; DPR-27

Reports No: 50-266/2000005(DRS); 50-301/2000005(DRS)

Licensee: Wisconsin Electric Power Company

Facility: Point Beach Nuclear Plant, Units 1 and 2

Location: 6610 Nuclear Road
Two Rivers, WI 54241

Dates: February 22-25, 2000

Inspector: K. Lambert, Radiation Specialist

Approved by: Wayne Slawinski, Acting Chief, Plant Support Branch
Division of Reactor Safety

EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-266/2000005(DRS), 50-301/2000005(DRS)

This was an announced routine radiation protection inspection to review the solid radioactive waste processing and control program, the radioactive material transportation program, and the Unit 1 'A' steam generator inspection activities. The inspection included a review of waste processing, Title 10 of the Code of Federal Regulations (CFR) Part 61 sampling analysis, shipping activities, hazardous material worker training, quality assurance audits, radiological planning for steam generator work and observations of spent resin transfer activities. This inspection covered a 4-day period concluding on February 25, 2000, and was performed by a radiation specialist. No violations of regulatory requirements were identified.

- The solid radioactive waste processing program was technically sound and effectively implemented in accordance with station procedures and regulatory requirements. The radioactive waste staff was knowledgeable regarding regulations, station procedures and industry standards (Section R1.1).
- The documented Process Control Program was not consistent with current station waste disposal and waste processing practices (Section R1.1).
- The radioactive material transportation program was technically sound and implemented in accordance with regulatory requirements. Required shipping documentation was complete, accessible, and properly maintained (Section R1.2).
- Radiological postings and container labeling were well maintained and appropriately informed workers of radiological conditions. Overall, radiological housekeeping and material condition of radiation protection equipment were good (Section R2.1).
- The licensee effectively evaluated planned work and developed ALARA reviews that incorporated lessons learned from previous evolutions. Pre-job briefings effectively provided radiological and other information resulting in workers who were knowledgeable of radiological conditions, hold points, and special instructions (Section R4.1).
- The training program provided effective hazardous material worker training to those individuals involved with the transportation of radioactive materials (Section R5.1).
- The licensee completed audits and task observations of the radwaste and transportation programs that were of sufficient scope and depth to identify deficiencies (Section R7.1).

Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Solid Radioactive Waste Management

a. Inspection Scope

The inspector reviewed the station's solid radioactive waste (radwaste) processing program as described in the Final Safety Analysis Report and the Process Control Program. The inspector's review included the generation, processing and storage of solid radwaste, 10 CFR Part 61 waste classification, discussions with cognizant individuals, and walk downs of solid radwaste storage and processing areas.

b. Observations and Findings

Solid radwaste generated at the station included process wastes from operations and dry active waste (DAW). Operations waste included spent resins from the demineralizers, filter cartridges and evaporator concentrates. DAW included paper, plastic, wood, metals, and waste materials removed from the radiologically controlled area (RCA). In addition, the station generated used oil that required processing and disposal.

DAW generation was minimized through a variety of radiation protection initiatives that included the use of reusable bags, limiting the materials brought into the RCA, and expanding the survey program to identify items for unrestricted release. In addition, the station implemented a "green is clean" program, where waste items in the RCA that were not likely contaminated were placed into containers separate from waste that was potentially contaminated. The "green is clean" waste was sent to an intermediary processor to be surveyed for unrestricted release.

DAW including filters with dose rates less than one roentgen per hour were processed by offsite contractors to reduce the volume of waste buried. Resins were dewatered onsite and sent to an intermediary processor for volume reduction by incineration. Incineration reduced the volume of resin disposed by about 90 percent. High activity waste and filters with dose rates greater than one roentgen per hour were placed into a high integrity container (HIC) and sent directly to a licensed disposal site without volume reduction. Offsite processing reduced the volume of waste buried in 1997 and 1999 by about 50 percent compared with 1996. However, the volume of waste buried in 1998 was about 30 percent greater than 1996, with the increase attributed to the solidification of evaporator concentrates (830 cubic feet) and additional waste generated during the extended outage in 1998.

The inspector's review of waste processing procedures indicated that the procedures were technically sound and consistent with regulatory requirements. Discussions with cognizant radwaste staff revealed that the individuals were knowledgeable regarding

waste operations, procedures, regulatory requirements, and industry standards. The inspector reviewed the station's Process Control Program (PCP) and noted that while the program indicated that radwaste was to be sent offsite for disposal, the station was sending radwaste to intermediary processors for volume reduction. The inspector noted that the PCP had not been updated since 1990. The inspector discussed the issue with station management, who agreed that the PCP was inconsistent with station practices and indicated that its revision would be added to radiation protection's improvement plan.

Waste stream sampling and analysis to determine scaling factors were conducted in accordance with 10 CFR Part 61 and station procedures. Samples from process operations waste streams were composited and analyzed annually, and every two years for DAW. The inspector's review concluded that the scaling factors were determined consistent with the guidance contained in the NRC Branch Technical Positions on Waste Classification and Waste Form and station procedures. Procedures reviewed were clear and technically sound, and the radioactive waste staff was knowledgeable of regulations, station procedures and industry standards. The scaling factors for 1999 were statistically different from previous scaling factors, which the licensee determined was due to the increase of cobalt-60 activity in samples used for scaling. The increased concentration of cobalt-60 resulted from the inspection and replacement of the Unit 2 core barrel baffle bolts during refueling outage U2R24. The licensee intended to collect and analyze samples from all waste streams in 2000 including DAW, to continue to assess the impact of the core barrel bolt replacement on the scaling factors.

Inspector walk downs revealed that the radioactive waste processing and storage areas were properly posted and controlled, and that containers were labeled in accordance with NRC requirements and station procedures. Material condition and integrity of drums and containers were good, as was storage and processing area housekeeping.

The inspector observed the loading of demineralizer spent resins into the shielded storage tank on the 8-foot elevation of the primary auxiliary building (PAB) and the transfer of the tank to the 66-foot elevation of the PAB. During the resin loading, radiation protection adequately controlled the area surrounding the tank as a high radiation area. Operations loaded the tank in accordance with station procedures, and good communication was observed between the operations and radiation protection staffs. Once the tank was transferred, appropriate surveys were performed and the tank drain connection shielded enclosure was controlled and posted as a locked high radiation area in accordance with station procedures and Technical Specifications.

c. Conclusions

The solid radioactive waste processing program was technically sound and effectively implemented in accordance with station procedures and regulatory requirements. The radioactive waste staff was knowledgeable regarding regulations, station procedures and industry standards. However, the documented Process Control Program was not consistent with current station waste disposal and processing practices, which the licensee planned to address in a future revision.

R1.2 Radioactive Material Transportation Program

a. Inspection Scope

The inspector reviewed the radioactive material transportation program for compliance with NRC and Department of Transportation (DOT) requirements. The review included applicable procedures, shipment records, discussions with personnel, and observations of shipping activities.

b. Observations and Findings

The inspector verified that plant procedures correctly referenced DOT and NRC transportation regulations. The procedures were generally well written and provided an appropriate amount of detail, thus providing individuals adequate guidance to perform assigned tasks. The licensee maintained current files for transportation records, high integrity container Certificates of Compliance, and burial site requirements. The licensee also maintained a file with current licenses for facilities that received radioactive material from the station.

Radioactive material shipped offsite included DAW, resins, filters, and contaminated equipment and oil, and miscellaneous radioactive samples. The station made the following radioactive material shipments in 1998, 1999 and 2000 through the date of the inspection:

<u>Shipment Type</u>	<u>Number of Shipments</u>		
	<u>1998</u>	<u>1999</u>	<u>2000</u>
Volume Reduction Shipments	6	14	2
Direct Disposal	4	2	0
Radioactive Material Shipments	104	91	8

The inspector reviewed selected shipping documents for shipments made in 1999 and 2000. Shipping documents were complete and contained the proper information regarding waste classification, physical and chemical form, volume, weight, total activity, proper shipping name, transportation index, and indicated if a reportable quantity of radioactive material was contained in the shipment. The licensee used a vendor computer program (i.e., RADMAN) to classify waste, determine if any reportable quantity limits were present, and to generate shipping papers. Shipping procedures required that information pertinent to the hazards of the materials being shipped be brought to the control room, where it would be immediately available to offsite authorities in the event an emergency involving the material occurred. The control room telephone was manned continuously in accordance with DOT regulations for an emergency response telephone number. The inspector verified that the control room had the appropriate information for a shipment that was en route during the inspection.

c. Conclusions

The radioactive material transportation program was technically sound and implemented in accordance with regulatory requirements. Required shipping documentation was complete, accessible, and maintained in accordance with regulatory requirements.

R2 Status of Radiological Protection and Chemistry Facilities and Equipment

R2.1 Radiological Posting, Labeling, and Housekeeping

a. Inspection Scope

The inspector reviewed radiological postings and labeling of containers during several walk downs of the PAB and satellite RCAs. In addition, housekeeping and material condition of radiation protection equipment was reviewed.

b. Observations and Findings

The inspector observed that radiological postings and boundaries in the PAB and satellite RCAs were well maintained, and in accordance with station procedures and regulatory requirements. The inspector determined through independent measurements that radiological postings reflected the actual area radiological conditions. Containers were observed to be labeled in accordance with station procedures and regulatory requirements.

Overall, housekeeping and material condition of radiation protection equipment in use was good. The inspector noted that the licensee was implementing housekeeping initiatives to relocate items stored on the 46-foot elevation of the PAB, but also noted minor housekeeping deficiencies in the radwaste storage area next to the PAB truck bay. Radiation protection management acknowledged the inspector's findings and indicated that the issue would be evaluated and corrective actions implemented, as warranted.

c. Conclusions

Radiological postings and container labeling were well maintained and appropriately informed workers of radiological conditions. Overall, radiological housekeeping and material condition of radiation protection equipment were good.

R4 Staff Knowledge and Performance in Radiological Protection and Chemistry

R4.1 Unit 1 Forced Outage Steam Generator Work Activities

a. Inspection Scope

The inspector reviewed the radiological planning for the Unit 1 'A' steam generator work activities to inspect the bowl for loose parts or foreign material. The evaluation included the as-low-as-is-reasonably-achievable (ALARA) review, the total effective dose

equivalent (TEDE) ALARA review, and the radiation work permit (RWP). The inspector also attended the pre-job briefing.

b. Observations and Findings

The inspector determined that the ALARA reviews and RWP were detailed and adequate for the work to be performed, and included appropriate radiological hold points. Specifically, the RWP included hold points for the detection of greater than 5000 millirem per hour on the outer surface of the diaphragm or on any loose material identified in the steam generator. The licensee reasonably estimated a total dose for the work activities of 1.5 rem, based on previous evolutions for opening manways and performing inspection activities.

The inspector attended the pre-job briefing for manway removal and inspections, tasks two and three of the RWP. During the observed briefings, the work group leaders clearly described the work to be performed, and radiation protections staff effectively communicated radiological conditions, protective clothing requirements and radiological hold points. Good communication was observed between the work groups and radiation protection staff.

c. Conclusions

The licensee effectively evaluated planned work and developed ALARA reviews that incorporated lessons learned from previous evolutions, and developed reasonable dose goals and appropriate radiological instructions. Pre-job briefings effectively provided radiological and other information resulting in workers who were knowledgeable of radiological conditions, hold points, and special instructions.

R5 Staff Training and Qualification in Radiological Protection and Chemistry

R5.1 Department of Transportation Hazardous Worker Training

a. Inspection Scope

The inspector reviewed the hazardous material worker training provided to those radiation protection technicians and shippers involved with transportation activities. This included a review of the training outline, selected individual training records, and discussions with training personnel.

b. Observations and Findings

The training department employed a contractor to provide hazardous material worker training, since the station's program had not been updated to reflect current transportation requirements. The inspector reviewed the contractor's lesson plan and noted that it was comprehensive in content and effectively addressed DOT requirements. Successful completion of training was accomplished through written examinations. The radiation protection trainer maintained a matrix of those individuals who had current training and the functions they could perform (i.e., shipper, radiation

protection technician duties, and inspect packages). The matrix also included the date training was conducted and the due date. The inspector reviewed the training matrix and noted that those individuals listed as qualified had received training in accordance with the DOT requirements every three years, as required.

c. Conclusions

The training program provided effective hazardous material worker training to those individuals involved with the transportation of radioactive materials.

R7 Quality Assurance in Radiological Protection and Chemistry Activities

R7.1 Solid Radioactive Waste and Transportation Assessments

a. Inspection Scope

The inspector reviewed the results of several assessments performed in 1998 and 1999 of the radwaste and transportation programs. The assessments included a quality assurance audit, and several work monitoring reports.

b. Observations and Findings

A quality assurance audit performed in 1998, reviewed the radiation protection program including the solid radwaste program. Specifically, the audit reviewed the following portions of the waste program: the Offsite Dose Calculation Manual (ODCM); 10 CFR Part 61 waste classification; selected implementing procedures; and shipping records. The audit concluded that the solid radwaste program was effectively implemented. No problems were identified with waste classification and shipping records. However, deficiencies between the ODCM and implementing procedures were identified that resulted in the initiation of a quality condition report. The radiation protection staff implemented corrective actions for the identified discrepancies.

Quality Verification staff observed several radwaste tasks during 1999, including radwaste shipments, transportation paperwork, radiological postings in radwaste areas, and classification of waste. The observations were documented in work monitoring reports and identified minor discrepancies with shipping papers that included incorrect information, the lack of documentation on how long a HIC has been exposed to sun light, and minor radiological posting deficiencies in the steam generator storage area. Radiation protection staff implemented corrective actions for the identified discrepancies.

c. Conclusions

The licensee completed audits and task observations of the radwaste and transportation programs that were of sufficient scope and depth to identify deficiencies.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on February 25, 2000.

The licensee did not identify any items discussed as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. W. Adams, Engineer, Organizational Assessment
S. F. Baker, General Supervisor, Radiation Protection
E. J. Epstein, Specialist-Radiation Protection
F. A. Flentje, Sr. Regulation & Compliance Specialist
J. E. Knorr, Manager, Regulation & Compliance
G. F. LeClair, Supervisor, Radiation Protection - Radwaste
J. D. Lindsay, General Supervisor, Radiation Protection
R. G. Mende, Plant Manager
L. R. Pepple, Supervisor, Radiation Protection
A. T. Rief, Training Coordinator, Radiation Protection
S. L. Scott, Radiological Engineer, Nuclear Safety Analysis

INSPECTION PROCEDURES USED

IP 83750: Occupational Radiation Exposure
IP 86750: Solid Radioactive Waste Management and Transportation of Radioactive Materials

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
CFR	Code of Federal Regulations
DAW	Dry Active Waste
DOT	Department of Transportation
DRS	Division of Radiation Safety
HIC	High Integrity Container
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PAB	Primary Auxiliary Building
PCP	Process Control Program
PDR	Public Document Room
radwaste	Radioactive Waste
RCA	Radiologically Controlled Area
RWP	Radiation Work Permit
TEDE	Total Effective Dose Equivalent

LIST OF DOCUMENTS REVIEWED

Procedures

NP 7.5.1, Revision 2, Contractor Procedures
RDW 14.3, Revision 1, Steam Generator Storage Facility Low-Level Radioactive Waste Storage Requirements
RDW 14.4, Revision 1, Requirements for the Storage of Containers in Outside Areas
RDW 15.0, Revision 4, Radioactive Material Shipping
RDW 17.3, Revision 5, Processing Bead Resin By Dewatering
RDW 18.1.1, Revision 2, 10 CFR 61 Sampling Program
RDW 18.2, Revision 1, Radwaste Classification, Shipment Type and Waste Stability Determination

Audits

Quality Assurance Audit Report A-P-98-03, Radiation Protection Program, March 24-April 3, 1998

Work Monitoring Reports Nos. 99-002, 99-012, 99-064, 99-066, 99-106, 99-153, and 99-183

Radioactive Material Shipments

99-011, 99-019, 99-026, 99-097, 99-059, 00-001, 00-005, 00008

Miscellaneous

Bill of Lading Assignment and Radioactive Material Shipment Record
Contractor Procedure Control, Chem-Nuclear Systems, Procedure FO-AD-002, Revision 22
Contractor Procedure Control, Chem-Nuclear Systems, Procedure TR-OP-034, Revision 6
PBNP Radwaste Training Status
Pre-Job ALARA Review, 2000-0002, "U-1 `A' S/G primary manway strongback removal, diaphragm cleaning, FOSAR and manway strongback replacement"
Process Control Program
Resin and Cask Transfer Checklist
RWP 00-1-1016, "U-1 forced outage Steam Generator Work"
Semi-Annual Summary of Radioactive Waste Burial Data, 1999