U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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| Docket Nos: | 50-266; 50-301 |
| License Nos: | DPR-24; DPR-27 |
| Report No: | 50-266/99009(DRP); 50-301/99009(DRP) |
| Licensee: | Wisconsin Electric Power Company |
| Facility: | Point Beach Nuclear Plant, Units 1 & 2 |
| Location: | 6610 Nuclear Road<br>Two Rivers, WI 54241 |
| Dates: | May 28 through July 13, 1999 |
| Inspectors: | F. Brown, Senior Resident Inspector<br>P. Louden, Resident Inspector<br>C. Brown, Reactor Engineer<br>D. Chyu, Reactor Engineer<br>M. Kunowski, Project Engineer |
| Approved by: | R. Lanksbury, Chief<br>Reactor Projects Branch 5<br>Division of Reactor Projects |

## EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-266/99009(DRP); 50-301/99009(DRP)

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week inspection period by the resident inspectors.

### Operations

- Operations department personnel were actively and effectively using the on-line Safety Monitor, a computer-based system that provided advanced and real-time risk insights for proposed and current plant equipment configurations. (Section O4.1)

### Maintenance

- Through effective work control and interdepartmental coordination, the licensee completed repairs to the "E" service water pump motor in a timely manner; thereby, limiting the amount of time in a limiting condition for operation. (Section M1.1)

- With a single nonsafety-significant exception, selected functional failures were documented in the 1998 annual maintenance rule report, were accurately classified and counted, and were appropriately dispositioned. (Section M2.1)

### Engineering

- The design, installation, and testing guidance for replacement components of the facade freeze protection system was consistent with industry recommendations and vendor documents. (Section E2.1)

### Plant Support

There were no significant plant support issues this report period.

## Report Details

Unit 2 power was reduced to approximately 60 percent on June 24, 1999, in response to the loss of an offsite 345-kilovolt line. Power was returned to 100 percent later that day. Both units remained at full power for the rest of the period with minor short-term exceptions for tests and system load control.

## I. Operations

### O1 Conduct of Operations

O1.1 Control Room and In-plant Observations of Activities (71707)

Operations were conducted well during this reporting period. The inspectors did not observe any cases of inappropriate or inadequate performance. The inspectors did not observe any examples of exceptionally good performance during this period.

### O2 Operational Status of Facilities and Equipment

O2.1 Safety System Walkdowns (71707)

The inspectors performed a safety system walkdown of the Unit 1 and Unit 2 Containment Spray systems following licensee surveillance testing. No discrepancies were observed. The inspectors performed a safety system walkdown of the "B" train emergency diesel generators. No significant discrepancies were noted. One inconsistency in the application of "red" locks was noted and is included in the licensee's corrective action program as Condition Report 99-1739.

### O4 Operator Knowledge and Performance

O4.1 Use of the On-line Safety Monitor

a. Inspection Scope (71707, 62707)

The inspectors monitored the operations department's use of the Safety Monitor system. This computer-based system provided advanced and real-time risk insights for proposed and current plant equipment configurations.

b. Observations and Findings

The inspectors observed the shift technical advisors regularly using the Safety Monitor. Insights gained from the monitor were provided to the duty shift superintendent. Significant increases in risk, or the need to sequence planned work so as to avoid significant increases in risk, were discussed at shift turnover meetings.

c. Conclusions

Operations department personnel were actively and effectively utilizing the on-line Safety Monitor.

## O5 Operator Training and Qualifications

O5.1 Simulator Training (71707)

The inspectors observed a licensee-administered simulator evaluation. This evaluation was part of the licensed operator continuing training program. The inspectors considered the scenario to be an effective learning and evaluatory tool. The training and operations department personnel present provided critical and objective feedback to the operators. Based on the observed performance, it was apparent that some operators were not yet comfortable with the licensee's new use and adherence policy for emergency operating procedures. Specifically, there was some confusion over the difference between using the procedures as written or changed via an approved process (as required by regulation) and "verbatim compliance" (a poor practice). The licensee recognized the need to address this discomfort and confusion.

## O6 Operations Organization and Administration

O6.1 Reduction in Control Room Staffing (71707)

The inspectors observed a decrease in the minimum number of licensed operators present in the control room. During shift turnovers, during meal hours, and on other occasions, there were as few as two licensed reactor operators and one senior reactor operator in the control room. This staffing level satisfied the plant's Technical Specification (T/S) minimum manning requirements, but was one fewer licensed individual than had previously been required by plant administrative procedure. The licensee had adopted the previous manning standard following performance problems for which violations were documented in Inspection Report 50-266/96018(DRS); 50-301/96018(DRS). The licensee relaxed the minimum control room staffing requirement because the previous performance problems had been corrected, a shortage of licensed operators, and because of labor-management issues. The inspectors verified that the administrative procedure revision that relaxed the minimum staffing required had the necessary reviews and approvals.

## O8 Miscellaneous Operations Issues (92700)

O8.1 (Closed) Licensee Event Report (LER) 50-266/99005-00: Steam Leak From Low Pressure Feedwater Heater. The issues associated with this event were discussed in Inspection Report 50-266/99008(DRP); 50-301/99008(DRP). The LER was complete and accurate.

O8.2 (Closed) LER 50-301/99003-00: Missed T/S Surveillance Test of Emergency DC [direct current] Lighting. The inspectors performed an independent review of the missed test and concluded that there was minimal safety significance associated with this issue. Specifically, new battery-powered lighting systems had been installed that were redundant to the direct current lighting system in all the areas of coverage. Additionally, other tests of the system performed within the required frequency had verified operation of the lighting circuit with the exception of a single contact. The licensee had been in the process of removing the missed surveillance test from the T/S because of the lack of safety significance associated with a failure to perform the test. The violation for failure to perform the test specified in T/S 15.4.6.A.3 was therefore of minor safety significance and, consistent with Section IV of the Enforcement Policy, is not being cited.

## II. Maintenance

### M1 Conduct of Maintenance

M1.1 Service Water (SW) Pump Motor Repairs

a. Inspection Scope (62707)

The inspectors reviewed the conduct of maintenance activities associated with the repairs to the "E" SW pump motor which failed on June 24, 1999. The SW system was the second highest ranking safety significant system in the licensee's probabilistic safety analysis.

b. Observations and Findings

On June 24, 1999, in response to a control room alarm indicating a potential ground fault on the Unit 2 Train "A" safety-related 480-volt bus, operators attempted to start the "E" SW pump in accordance with alarm response procedures. The pump failed to start, was declared out-of-service, and a 7-day limiting condition for operation was entered.

Troubleshooting identified that the "E" SW pump motor had a phase "A" ground fault. Actions were immediately initiated to remove the damaged motor and obtain a spare, which was being rebuilt at an offsite vendor. Maintenance personnel installed the spare motor and the pump was returned to service following surveillance testing on June 27, 1999.

The inspectors observed that coordination activities between the maintenance, nuclear supply services, and operations staff, and other involved work groups were both effective and efficiently performed. The spare motor was received on the weekend, during off-hours, and was released for installation in a timely manner. Likewise, maintenance personnel installed the motor efficiently and in accordance with routine maintenance procedures. These efforts resulted in limiting the out-of-service time for the "E" SW pump to 3½ days of the 7-day limit.

c. Conclusions

Through effective work control and interdepartmental coordination, the licensee completed repairs to the "E" SW pump motor in a timely manner; thereby, limiting the amount of time in a limiting condition for operation.

### M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Review of the Annual Maintenance Rule Report

a. Inspection Scope (62707)

The inspectors reviewed the licensee's 1998 annual maintenance rule report to ensure that the requirements of 10 CFR 50.65, "Monitoring the Effectiveness of Maintenance," were satisfied. The inspectors focused the review on ensuring that functional failures (FF) and maintenance preventable functional failures (MPFF) were identified, accurately classified and counted, and appropriately dispositioned.

b. Observations and Findings

The inspectors developed a list of 15 equipment failures or malfunctions of risk significant equipment that had occurred in 1998, and appeared to be FFs or MPFFs under the licensee's program. The inspectors then reviewed the licensee's 1998 annual maintenance rule report to determine whether the failures or malfunctions had been counted against system performance criteria. The inspectors found that all 15 items had been appropriately included in the annual monitoring report except in cases where the system engineering staff could provide reasonable explanations why the failure or malfunction did not satisfy the definition of an FF or MPFF.

The inspectors reviewed the annual report to ensure that documented FFs and MPFFs for risk significant systems were accurately classified and counted. With two exceptions, all items reviewed appeared to be accurately classified and counted. The only inappropriate classification of documented failures involved repetitive Vari-drive failures for the charging pumps. Licensee staff had not recognized that repetitive functional failures satisfied the program definition of an MPFF. Licensee staff informed the inspectors that the involved failure mode had been recognized as a repetitive MPFF in early 1999. In addition to this failure to correctly classify an MPFF, the inspectors also identified that repetitive malfunctions of the instrument air compressors were classified as FFs but not as MPFFs. The licensee demonstrated to the inspectors that the FF classification had been a conservative error (the malfunctions should not have been classified as functional failures), and that an MPFF had not occurred. These two issues were considered to be of minimal safety significance.

The inspectors verified that all identified FFs and MPFFs for risk significant systems had been appropriately dispositioned, with the exception of the charging system repetitive MPFF discussed above. The charging system had been moved to (a)(1) in early 1999 after one additional Vari-drive failure, and the inspectors considered this to be a minor issue. The inspectors noted several cases where systems had conservatively been moved from (a)(2) status to (a)(1) status prior to performance criteria being exceeded. One example was the condensate and feed system for both units.

c. Conclusions

With a single nonsafety-significant exception, selected functional failures were documented in the 1998 annual maintenance rule report, were accurately classified and counted, and were appropriately dispositioned.

## III. Engineering

### E2 Engineering Support of Facilities and Equipment

E2.1 Facade Freeze Protection Heat Tracing Installation Inspection (37551)

The inspectors observed maintenance personnel installing some of the replacement heat tracing elements on piping for the Unit 1 refueling water storage tank located in the Unit 1 facade. The specific piping inspected was the same length of pipe that was discovered to be frozen in January 1999, and was the subject of a recent escalated enforcement action (see Inspection Report 50-266/99004).

The inspectors also reviewed design and installation documentation associated with the heat tracing elements and power supplies. The design, installation, and testing guidance was consistent with recommendations in Electric Power Research Institute, Institute of Electrical and Electronics Engineers, and vendor documents.

The inspectors noted that the administrative controls being used for the installation of the heat tracing elements and electrical circuitry were the spare parts equivalency evaluation documentation (SPEED) and the plant modification processes. The inspectors had no concerns with this approach for the facade freeze protection improvement project. However, the inspectors noted that governing procedures for SPEEDs and plant modifications did not contain definitive criteria for ensuring that SPEEDs would not be used in place of plant modifications.

**E8 Miscellaneous Engineering Issues (92700, 92903)**

E8.1 (Closed) LER 50-301/98003-00: Missed ASME [American Society of Mechanical Engineers] Section XI Pressure Test Program Surveillance. An increased-frequency surveillance test was not performed because scheduling personnel missed the notification of the surveillance test frequency change. The valve passed subsequent testing. The failure to perform the increased-frequency test was a violation of T/S 15.4.2.B.3. This Severity Level IV violation is being treated as a Non-Cited Violation (NCV) consistent with Appendix C of the NRC Enforcement Policy (NCV 50-301/99009-01(DRS)).

E8.2 (Closed) Inspection Followup Item 50-266/96018-19(DRS); 50-301/96018-19(DRS): The Chemical and Volume Control System May Not be a Closed System. The inservice testing program was revised (Revision 6) on September 30, 1998. This revision included new component classification and test requirements to ensure that the chemical and volume control system satisfied applicable code requirements for a closed system.

E8.3 (Closed) LER 50-266/98003-00: Containment Accident Fan Motor Cooler Exchanger Flow Rates Found to be Outside the Design Basis of the Plant. The licensee identified that the design basis cooling flow to the fan motor coolers had not been appropriately translated into the procedures for establishing the flow rates. The problem was caused by inappropriate translation of system pressure drops into indicated flow rates on installed gauges. The failure to appropriately translate design basis requirements into required procedures was a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." This Severity Level IV violation is being treated as an NCV, consistent with Appendix C of the NRC Enforcement Policy (NCV 50-266/99009-02(DRS); 50-301/99009-02(DRS)).

E8.4 (Closed) LER 50-266/98003-01: Containment Accident Ran Motor Cooler Exchanger Flow Rates Found to be Outside the Design Basis of the Plant. This supplement appropriately revised the licensee's corrective actions for the LER discussed in Section E8.3.

E8.5 (Closed) Unresolved Item 50-266/99005-01(DRS); 50-301/99005-01(DRS): Operability of Emergency Diesel Generator Room Fire Dampers. The licensee removed the components necessary for the manual trip function of the emergency diesel generator ventilation and fire dampers to prevent unintended closure of fire dampers. During

subsequent review, the licensee identified that the fire dampers could not automatically close due to the differential pressure created by the ventilation system. The licensee had since included instructions in Fire Emergency Plan (FEP) 4.13, "Emergency Diesel Generator (G-01/G-02) and Compressor Rooms," Revision 7, to shut down the ventilation system so the fire dampers could automatically close upon melting of the fusible links. The inspectors considered this operator action to secure the ventilation system to be acceptable and in accordance with Information Notice 89-52, "Potential Fire Damper Operational Problems."

Upon detection of a fire or heat source in the emergency diesel generator room, the ventilation system would automatically start due to a rise in temperature. If the ventilation system was capable of removing heat and maintaining the room temperature below 160 degrees Fahrenheit, no equipment in the immediate area would be affected by temperature. If operators had secured the ventilation system per FEP 4.13, the fusible links would melt and the fire dampers would close automatically. The inspectors considered the use of fusible links with a rating of 160 degrees Fahrenheit to be acceptable. The licensee was planning to install higher temperature rated fusible links to address a high-energy line break analysis. The inspectors did not review the associated safety evaluation and therefore could not reach a conclusion concerning the higher rated fusible links.

The licensee had concluded that the manual trip function was not needed to meet the requirement of 10 CFR Part 50, Appendix R. The NRC had previously concluded that the loss of the cables associated with the manual trip function of the ventilation system would have no effect on safe shutdown capability following the fire. Therefore, it was insignificant when this function was eliminated.

E8.6 Review of Year 2000 (Y2K) Readiness

(Closed) Temporary Inspection (TI) 2515/141: Review of Y2K Readiness of Computer Systems at Nuclear Power Plants.

The inspectors conducted an abbreviated review of Y2K activities and documentation using TI 2515/141. The review addressed aspects of Y2K management planning, documentation, implementation planning, initial assessment, detailed assessment, remediation activities, Y2K testing and validation, notification activities, and contingency planning. The inspectors used NEI/NUSMG [Nuclear Energy Institute/ Nuclear Utilities Software Management Group] 97-07, "Nuclear Utility Year 2000 Readiness," and NEI/NUSMG 98-07, "Nuclear Utility Year 2000 Readiness Contingency Planning," as the primary references for this review. The results of this review will be combined with the results of other reviews in a summary report to be issued by July 31, 1999.

## IV. Plant Support

### R1 Radiological Protection and Chemistry (RP&C) Controls

No significant discrepancies were observed during routine tours of the radiologically controlled area.

## V. Management Meetings

### X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on July 13, 1999. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

## PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. R. Anderson, Operations Manger
A. J. Cayia, Regulatory Services and Licensing Manager
R. P. Farrell, Radiation Protection Manger
V. M. Kaminskas, Maintenance Manager
R. G. Mende, Plant Manager
C. R. Peterson, Director of Engineering
M. E. Reddemann, Site Vice President
J. G. Schweitzer, System Engineering Manager

## INSPECTION PROCEDURES USED

| | |
|---|---|
| IP 37551: | Onsite Engineering |
| IP 62707: | Maintenance Observations |
| IP 71707: | Plant Operations |
| IP 92700: | Onsite Follow-up of Written Reports of Nonroutine Events at Power Reactor Facilities |
| IP 92903: | Follow up - Engineering |
| TI 2515/141: | Review of Y2K Readiness of Computer Systems at Nuclear Power Plants |

## ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

| | | |
|---|---|---|
| 50-301/99009-01(DRS) | NCV | Technical Specification violation - LER 50-301/98003-00 |
| 50-266/99009-02(DRS)<br>50-301/99009-02(DRS) | NCV | Design basis violation - LER 50-266/98003-00 |

Closed

| | | |
|---|---|---|
| 50-266/99005-00 | LER | Steam leak from low pressure feedwater heater |
| 50-301/99003-00 | LER | Missed T/S surveillance test of direct current lighting |
| 50-301/98003-00 | LER | Missed ASME Section XI pressure test |
| 50-301/99009-01(DRS) | NCV | Technical Specification violation - LER 50-301/98003-00 |
| 50-266/96018-19(DRS)<br>50-301/96018-19(DRS) | IFI | The chemical and volume control system may not be a closed system |
| 50-266/98003-00 | LER | Containment accident fan motor cooler exchanger flow rates found to be outside the design basis of the plant |
| 50-266/99009-02(DRS)<br>50-301/99009-02(DRS) | NCV | Design basis violation - LER 50-266/98003-00 |
| 50-266/98003-01 | LER | Containment accident fan motor cooler exchanger flow rates found to be outside the design basis of the plant |
| 50-266/99005-01(DRS)<br>50-301/99005-01(DRS) | URI | Operability of emergency diesel generator room fire dampers |
| TI2515/141 | | Review of Y2K Readiness of Computer Systems at Nuclear Power Plants |

## LIST OF ACRONYMS USED

| | |
|---|---|
| FEP | Fire Emergency Plan |
| FF | Functional Failures |
| LER | Licensee Event Report |
| MPFF | Maintenance Preventable Functional Failures |
| NCV | Non-Cited Violation |
| SPEED | Spare Parts Equivalency Evaluation Documentation |
| SW | Service Water |
| TI | Temporary Instruction |
| T/S | Technical Specification |
| URI | Unresolved Item |
| Y2K | Year 2000 |