U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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Licensee:	Wisconsin Electric Power Company
Facility:	Point Beach Nuclear Plant, Units 1 & 2
Location:	6612 Nuclear Road Two Rivers, WI 54241-9516
Dates:	July 7, 1998, through August 17, 1998
Inspectors:	P. Louden, Resident Inspector P. Simpson, Resident Inspector
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EXECUTIVE SUMMARY

Point Beach Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-266/98014(DRP); 50-301/98014(DRP)

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

Operations

- Auxiliary feedwater system material condition and housekeeping were generally acceptable. Procedures were adequate to ensure proper system operation under accident conditions. Several minor inspector-identified discrepancies were brought to the licensee's attention and were corrected or placed into the station's corrective action program. Some problems were also noted by the inspectors with regard to controls for ensuring that changes to operator rounds logs did not invalidate NRC commitments and actions taken by the licensee in response to industry lessons-learned. (Section O2.1)

- The licensee identified a condition where one train of the Unit 2 safety injection system and the opposite train of the Unit 2 residual heat removal system (low pressure safety injection) were inoperable simultaneously. Even though allowed by Technical Specifications, the licensee determined that the configuration was undesirable and established administrative controls and guidance on addressing unplanned configurations of this type in the future. (Section O3.1)

- During plant walkdowns, the inspectors observed conditions with plant equipment, such as packing leaks and missing pipe insulation, that had not been documented via work order requests or condition reports, indicating that plant operators were not thorough in identifying equipment problems during their operator rounds. (Section O4)

- Members of the Off-Site Safety Committee posed challenging and probing questions to station department managers during a recent meeting. This was a noted improvement in committee performance from that observed previously by the inspectors. (Section O7.1)

Maintenance

- Overall, plant operators performed a Technical Specification-required rod exercise test with an appropriate level of supervisory oversight and followed operating standards for the conduct of such tests. The inspectors identified that the test contained weak controls for ensuring that the operator selected the correct control rod bank prior to moving a rod bank, creating the potential for the incorrect rod bank to be moved. (Section M1.2)

- The licensee had effectively implemented a 12-week work planning and scheduling process, which was an improvement over past practices. Even though problems were encountered, no safety-related equipment remained out-of-service for an unacceptable duration as a result. The types of problems encountered were typical for a new program in the initial implementation stage. Many past program problems observed by the inspectors were not evident during this review. (Section M1.3)

- The maintenance organization effectively replaced the "C" service water pump in accordance with station procedures. The work was planned and scheduled appropriately and limiting conditions for operation durations were closely monitored throughout the evolution. Previous inspector-identified concerns with other service water pump work conducted earlier this year were not evident. (Section M2.1)

Engineering

- During the review of the auxiliary feedwater system, the inspectors noted that the cognizant system engineer was knowledgeable of system operational concerns and outstanding maintenance work requests. The engineer displayed a clear sense of ownership for the system and was effectively involved in the work control process. (Section E4.1)

- The initial training material for engineering support personnel appeared to be sufficient in depth and scope. The training instructors were knowledgeable, well prepared, and presented the material effectively. (Section E5.1)

Plant Support

- The licensee conducted a drill of the emergency response organization. The performance of the organization during the drill, as observed by the licensee and the inspectors, was poor. The licensee's emergency response organization undertook several improvement initiatives to address the problems. (Section P5.1)

Report Details

Summary of Plant Status

During the inspection period, both Units operated at approximately 100 percent power.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (Inspection Procedure (IP) 71707)

The inspectors conducted frequent reviews of ongoing plant operations. The inspectors observed Unit 1 and Unit 2 control room shift turnovers and daily control room operations. In general, the shift briefings and turnovers were conducted in an effective manner. However, the inspectors observed several occasions where changes in plant equipment status caused by repair and troubleshooting activities were not effectively communicated to the cognizant unit reactor operator.

O2 Operational Status of Facilities and Equipment

O2.1 Engineered Safety Feature System Inspection

a. Inspection Scope (IP 71707)

The inspectors performed a semi-annual inspection and walkdown of the Unit 1 and Unit 2 auxiliary feedwater (AFW) systems. The inspectors selected the AFW system because it had the highest importance-to-safety ranking in the licensee's probabilistic safety assessment.

b. Observations and Findings

Review of Design and Current Licensing Basis

The inspectors reviewed the AFW-applicable Final Safety Analysis Report (FSAR) sections and the licensee's AFW-related design basis documents, Design Basis Document 01, "Auxiliary Feedwater," Revision 0, and Design Basis Document T-35, "Accident Analysis Basis Documents," Module 11, Revision 1. The inspectors verified that the licensee had appropriately translated the AFW design basis operational requirements and limitations into the AFW system operating instructions, abnormal operating procedures, and emergency operating procedures.

Earthquake accident analysis scenarios for either a loss of normal feedwater or a loss of all offsite power assumed operator actions to realign the AFW water supply to the emergency service water (SW) source within 5 minutes of event initiation. The inspectors review identified that the required operator actions were not proceduralized. The licensee credited an AFW pump low suction pressure trip alarm to alert operators to realign the AFW supply. The inspectors discussed this observation with the operations manager, who stated that an abnormal operating procedure for natural events was being developed

and was scheduled for issuance in late 1998. The inspectors concluded that the licensee's planned actions would address operators meeting the analytical 5-minute time limit for aligning the SW supply.

System Walkdowns

The inspectors made the following observations based on in-plant AFW system walkdowns. Each of the AFW pumps have suction line relief valves located in the overhead area above each pump motor. The inspectors observed that the relief valves were installed with no discharge line to direct the relief valve spray. The orientation of the relief valve discharges were such that discharge would spray directly into the area above the AFW pumps and associated equipment. The inspectors noted that the valves' set points were 100 pounds per square inch gauge (psig)(± 3 percent). The normal suction pressure of the pumps was 15 psig when aligned to the condensate storage tanks. A much higher suction pressure would be experienced by the pumps if aligned to the SW supply header. The inspectors observed that the AFW system was typically tested with the system aligned to the condensate storage tanks.

In response to the inspectors' questions, design engineering personnel calculated a SW pressure at the relief valves as high as 99.7 psig. Taking into account the 3 percent uncertainty for the relief valve set points, the capability of the AFW system to meet its design basis function came into question. The licensee generated Condition Report (CR) 98-3093 to document this issue. As discussed in that document, the licensee concluded that no operability concerns existed due to the orientation of the relief valve discharge openings because the discharge flowrate from the relief valves would be small and the flowrate would not appreciably affect either the flowrate to the steam generators or result in excessive wetting of equipment in the AFW pump cubicles. The inspectors concluded that no risk significant concerns remained related to this issue.

System Drawing Reviews

During a walkdown of the AFW flowpath using Operations Checklist (CL) 13E Part 2, "Auxiliary Feedwater Valve Lineup Motor Driven," Revision 30 and Piping and Instrumentation Drawing (P&ID) M-217, "Auxiliary Feedwater System," Revision 8, the inspectors identified several discrepancies between the valve positions indicated on the P&ID and the actual in-plant valve positions. The valves in question were not in the AFW major flowpath and, therefore, AFW operability was not a concern. The licensee determined the in-plant valve positions were correct and the P&ID was incorrect. Condition Report 98-3041 was initiated to correct the P&ID.

The inspectors also identified that the as-built configuration of the steam supply drains for the turbine-driven AFW pumps did not match P&IDs M-201 "Main and Reheat Steam System Unit 1," Revision 43, and M-2201 "Main and Reheat Steam System Unit 2," Revision 35. The inspectors presented the errors to the licensee and CR 98-3062 was written to address the discrepancy. The inspectors also observed that the P&ID configuration shown for the 4-inch diameter "B" CST drain line downstream of valve AF-14 on P&ID M-217 did not match the actual plant configuration. The inspectors determined that the drain line had been temporarily modified sometime prior to February 2, 1998, but had not been restored to the original configuration. The AFW system engineer indicated that a CR was written to address the condition.

Each of these inspector observations were not safety significant of themselves in terms of the ability of the AFW system to fulfill its safety functions, but were further illustrations of the configuration control and drawing problems being addressed by the licensee.

Individual Plant Examination (IPE) Considerations

The inspectors reviewed the licensee's IPE which recommended that the direction the doors to the AFW pump heating, ventilation, and air conditioning (HVAC) room opened be reversed to help mitigate the effects of a SW pipe break in the room. This change would allow water from a SW pipe break to flow out of the AFW pump HVAC room into the turbine building. Inspector walkdowns of the area confirmed that the licensee had implemented the recommendations in the IPE.

Operational Requirements During a Station Blackout

In the event of a dual unit station blackout, the AFW system would be used to provide feedwater to the steam generators; however, the normal SW cooling supply for the turbine-driven AFW pump seals would not be available. Instead, the fire header supply water would be used to cool the seals via the diesel fire pump. Technical Specifications (T/Ss) did not address this AFW/firewater system relationship. The inspectors discussed the support system nature of the fire system with operations department management, who agreed that the relationship went beyond T/S operability requirements, but that further review into the AFW/fire system inter-relationships was warranted.

Open Work Requests

The inspectors reviewed a list of all open work requests related to the AFW system. The outstanding work requests did not individually or collectively bring into question AFW system operability. A total of 34 work requests (26 percent of the total for AFW) were corrective maintenance items. The ages of the work requests varied from 1996 to present. Most of the work requests were scheduled to be completed during the next AFW system work week.

The inspectors concluded that the AFW system material condition and related area housekeeping were generally acceptable. The inspectors observed several minor equipment deficiencies and brought them to the licensee's attention. The deficiencies consisted of missing insulation on numerous pipes, an uninstalled junction box cover on the "A" motor-driven AFW pump discharge valve (AF-4012) controller, and excessive corrosion on the AF-4012 valve stem. The licensee initiated CRs 98-2789, 98-2954, 98-2998, and Work Order 129824 to address the inspectors' concerns.

Use of Operating Experience

The routine operator rounds log used for the AFW system, Point Beach Form 2032, "Turbine Building Shift Log Unit 1," Revision 41, contained a step to check each of the AFW pumps discharge piping temperatures once per shift. The discharge line temperature was acceptable if it was at or less than ambient room temperature; thereby, indicating no leakage back through the feedwater line check valves. This leakage could result in steam binding of the AFW pump. In a February 25, 1986, response to Bulletin 85-01, "Steam Binding of Auxiliary Feedwater Pumps," the licensee committed to

perform once per shift checks of the discharge lines for the AFW pumps for excessive temperature.

From discussions with licensee personnel and a review of procedures, the inspectors identified that the licensee had no existing controls to track commitments implemented through the use of operator rounds. In addition, the licensee did not track the basis for an item being in the operator rounds log forms. The inspectors concluded that these shortcomings created the potential for improperly evaluated changes to be made to the operator rounds which could invalidate previous NRC commitments and actions in response to industry lessons-learned. A recent similar problem was discussed in Section E3.1 of Inspection Report (IR) 50-266/98011(DRP); 50-301/98011(DRP).

c. Conclusions

The inspectors concluded that the AFW system was capable of performing required design and licensing basis safety functions. Overall, the AFW system material condition and housekeeping were acceptable. Procedures were adequate to ensure proper AFW operation under accident conditions. Several minor inspector-identified discrepancies were brought to the licensee's attention and were corrected or placed into the licensee's corrective action program. Some problems were also noted by the inspectors with regard to controls for ensuring that changes to operator rounds logs did not invalidate NRC commitments and actions taken by the licensee in response to industry lessons-learned.

O3 Operations Procedures and Documentation

O3.1 Cross Train Out-of-Services for Safety Injection (SI) Systems

a. Inspection Scope (IPs 71707 and 92901)

The inspectors reviewed the reportability of the simultaneous inoperability of the Unit 2 Train "B" residual heat removal system (RHR) and the Train "A" SI system. This condition occurred on May 31, 1998, and lasted for approximately 4 hours.

b. Observations and Findings

On May 31, 1998, the Unit 2 Train "B" RHR system injection flow transmitter (2FT-928) was isolated and declared out-of-service because of observed leakage. Condition Report 98-2192 was written to address the question of whether or not removing the transmitter from service rendered the entire RHR system (low pressure SI) train inoperable.

Upon further review of CR-98-2192, system engineers determined that placing the flow transmitter out-of-service rendered the entire train of low pressure SI inoperable. Therefore, it was concluded that the Train "B" low pressure SI system was inoperable from 3:51 p.m. on May 31, 1998, until it was repaired on June 1, 1998, at 5:05 p.m.

During the engineering review, a duty technical advisor noted that the Unit 2 Train "A" high pressure SI system was taken out-of-service for surveillance testing from 1:43 p.m. until 5:20 p.m. on May 31, 1998, resulting in both the Unit 2 Train "A" high pressure SI and the Train "B" low pressure SI systems being simultaneously inoperable for about

1½ hours. Station management initially determined that the configuration was allowed by T/Ss and was not reportable to the NRC. Condition Report 98-2254 was written to prompt an evaluation of the operability decision.

In the response to CR 98-2254, the licensee concluded that the RHR and SI systems were designed for unit cross connecting of the low and high pressure SI systems. Furthermore, T/Ss 15.3.3.A.2 and 15.3.3.A.3 allowed one train of each system to be simultaneously out-of-service.

Upon reviewing the resolution of CR 98-2254, the inspectors asked further design basis questions involving the configuration of having opposite trains of low and high pressure SI out-of-service. These questions prompted design engineering personnel to review the matter further. In response to the inspectors' questions, the licensee concluded that the plant was designed in such a manner to physically allow for cross tying unit SI flow paths. However, this capability was not discussed in the FSAR or any other license-based documentation. The licensee determined that the lack of discussion in the FSAR regarding this cross train alignment did not necessarily mean that the plant was outside its design basis. However, regardless of the documentation aspects of the cross tie capabilities for the low and high pressure SI systems, the licensee identified that no procedures existed to perform the cross tying if required. Based on this information, the licensee reported the condition for the time the Unit 2 Train "A" high pressure SI and the Train "B" low pressure SI were simultaneously out-of-service, pursuant to 10 CFR Part 50.73(a)(2)(vi). Licensee Event Report 50-266/98-022 was submitted on August 13, 1998, detailing this issue.

Corrective actions taken in response to this problem included the establishment of a Duty and Call Superintendent Handbook procedure which provided guidance to operators as to what actions were to be taken if inoperable cross train SI configurations were discovered in the future. The guidance states that even though allowed by T/S, the cross tied SI flow path configuration was undesirable and T/S 15.3.0.B would be entered. Technical Specification 15.3.0.B states that in the event a limiting condition for operation cannot be satisfied, action shall be initiated within one hour to place the affected unit in hot shutdown within seven hours of entering the specification. Long term corrective actions involve the plant's conversion to improved standard T/S which would prohibit the cross train out-of-service for all the SI systems.

The inspectors had no further questions regarding the cross train alignments of the low and high pressure SI systems.

c. Conclusions

The licensee identified a condition where one train of the Unit 2 SI system and the opposite train of the Unit 2 RHR system (low pressure SI) were inoperable simultaneously. Even though allowed by T/Ss, the licensee determined that the configuration was undesirable and established administrative controls and guidance on addressing unplanned configurations of this type in the future.

O4 Operator Knowledge and Performance

During routine walkdowns of the plant, the inspectors frequently identified conditions of equipment that had not been documented via work order requests or CRs. The observed conditions included miscellaneous valve packing leaks, missing piping insulation, a "sealed in" remote control panel alarm, and general housekeeping issues. These observations were forwarded to the responsible organization or operations department shift management for dispositioning. In response to the inspectors' observations, the licensee generated work orders and/or CRs, but none of the observed conditions involved any immediate operability concerns. However, the number of items identified by the inspectors brought into question the thoroughness of the routine plant walkdowns by operators. Plant management stated that the expectations established for walkdowns would be reviewed and reinforced, as necessary.

O7 Quality Assurance in Operations

O7.1 Off-Site Review Committee (OSRC)

The inspectors attended portions of the OSRC meeting held on August 5, 1998. The meeting was conducted in accordance with the requirements of T/S 15.6.5.2, "Off-Site Review Committee." At the meeting, the OSRC operations subcommittee reported its observations of the operations department. The subcommittee concluded that the operations department had many ongoing improvement initiatives and struggled to make progress because of a lack of qualified operators and other perceived higher priority activities. Plant management concurred with the subcommittee's observations. In general, the questions posed to department managers by committee members were challenging and probing. This was a noted improvement from previous OSRC performance (Section O7.1 of IR 50-266/97003(DRP); 50-301/97003(DRP)).

O8 Miscellaneous Operations Issues

O8.1 (Closed) Licensee Event Report (LER) 50-266/98-022; 50-301/98-022: Technical Specification Limiting Conditions for Operation (LCOs) for SI and Residual Heat Removal Operation. The circumstances surrounding this event and the licensee's subsequent corrective actions are discussed in Section O3.1 of this report. No further action on this item is necessary.

O8.2 (Closed) LER 50-266/98-019; 50-301/98-019: Containment Hydrogen Monitor Inoperability. This event was dispositioned in accordance with the NRC Enforcement Policy as discussed in Section M3.1 of IR 50-266/98011(DRP); 50-301/98011(DRP). The corrective actions discussed in the LER appeared to be appropriate for preventing recurrence.

O8.3 (Closed) LER 50-266/98-014: Emergency Safety Features Actuation Automatic Start of Service Water Pumps. On April 17, 1998, with Unit 1 defueled and Unit 2 at 100 percent rated thermal power, an automatic start of the "A" and "B" SW pumps occurred. The licensee was performing post-maintenance testing of the G01 emergency diesel generator output breaker to the Unit 1 safeguards bus, an activity affecting quality, when closure of the breaker caused the unplanned start of the two SW pumps. Operators promptly stopped the two SW pumps and restored the SW system to the pre-test

configuration. The installation work plan (95-048-01) which was controlling the post-maintenance testing did not specify that the two SW pumps would start as a result of the breaker closure. The installation work plan was subsequently revised and the testing was completed without further problem. The failure of the licensee to provide an adequate post-maintenance testing procedure (to prevent the inadvertent start of the engineered safety features SW pumps) is a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," which requires that activities affecting quality be prescribed by documented instructions, procedures, or drawings of a type appropriate to the circumstances and be accomplished in accordance with those instructions, procedures, or drawings. However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation (NCV) consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-266/98014-01(DRP)).

O8.4 (Closed) Violation (VIO) 50-266/96012-04(DRP); 50-301/96012-04(DRP): This violation was issued for a failure to follow a temperature monitoring requirement of Operating Instruction (OI)-115, "SFP [Spent Fuel Pool] Service Water Cooling Isolation for Maintenance," and the lack of instruction in OI-115 to ensure that SFP water flow and SW flow were restored to the proper heat exchanger following completion of maintenance and testing activities. The individuals who originally did not follow the temperature monitoring requirement were counseled on the need for procedure adherence. The inspectors reviewed the current revision (Revision 2) of OI-115 and verified that it directed operators to ensure that SFP and SW flows were restored to the proper heat exchanger following maintenance and testing activities.

O8.5 (Closed) LER 50-301/98001: Steam Generator Vent Mispositioned During Plant Heatup Unit 2. While Unit 2 was heating up from 200 degrees Fahrenheit (°F) to 350°F on February 2, 1998, plant operators discovered the "A" steam generator vent valve in the open position emitting a steam plume. The operators reported the condition to the control room and the valve was immediately closed. The condition was reported under the requirements of 10 CFR Part 50.73(a)(2)(v), "any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident." Specifically, the open vent valve would have created an unisolated radiological release pathway in the event of a steam generator tube rupture. The root cause of the valve being left open was inadequacies in the configuration control process. Operating instructions and valve position checklists were used to ensure that valves were in the appropriate position for reactor startup. However, conflicts in the scheduling of certain valve positioning activities led to the failure to ensure that the steam generator vent valve was placed in the plant checklist-required closed position. This event was included in the station's significant issues trending program as another example of configuration management problems being addressed by the station. The failure to follow the checklist to ensure that the valve was in the proper position was a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation (NCV) consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-301/98014-02(DRP)).

O8.6 (Closed) LER 50-266/98-013; 50-301/98-013: Containment Spray System Discharge Pressure Indicators Not Isolated. On April 16, 1998, with Unit 1 in a refueling outage and Unit 2 at 100 percent rated thermal power, the licensee identified that the pressure indicator root valves for the containment spray pumps (both units) were not closed as

required to provide a closed system boundary outside containment. Although these systems are routinely tested as a closed system outside containment with the root valves open, the 3/8-inch tubing and the discharge pressure indicators downstream of the root valves were not seismically qualified to perform a containment isolation function. The Unit 1 and Unit 2 containment spray systems were immediately declared inoperable and T/S 15.3.0.B was entered. Approximately 30 minutes later, the valves were closed and the T/S was exited. The root cause of the valve mispositionings involved a failure to maintain configuration control over the containment spray system. The valve position checklists did not identify the valves as needing to be closed. Corrective actions were taken to ensure that the appropriate checklists would contain steps and notations to ensure that the valves would be closed when the system was required to be operable. The failure to provide adequate checklists is a violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings." However, this non-repetitive, licensee-identified and corrected violation is being treated as a Non-Cited Violation (NCV) consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-266/98014-03(DRP); 50-301/98014-03(DRP)).

II. Maintenance

M1 Conduct of Maintenance

M1.1 Tests and Surveillances (IP 61726)

The inspectors observed the conduct of the following tests and surveillances during this inspection period:

- Technical Specification Test (TS) 5, "Bi-Weekly Rod Exercise Test Unit 1," Revision 20
- Quarterly Inservice Test (IST) of Fuel Oil Transfer System Pumps and Valves for Emergency Diesel Generators (IT 14), Revision 12
- High Head Safety Injection Pumps and Valve Quarterly (Unit 2) (IT 02), Revision 41
- Safety Injection Valves Quarterly (Unit 2) (IT 45), Revision 32
- Control Room Heating and Ventilation System Monthly Checks (TS 9), Revision 19

In general, the inspectors observed that the personnel performing the tests or surveillances were referencing appropriate procedures and good oversight was provided by shift supervisors. Inspector observations of the biweekly control rod drive exercise surveillance test (TS 5) are discussed in Section M1.2 of this report.

M1.2 Biweekly Control Rod Exercise Test for Unit 1

a. Inspection Scope (IP 61726)

The inspectors observed performance of TS 5, "Bi-Weekly Rod Exercise Test Unit 1," Revision 20.

b. Observations and Findings

Plant operators performed TS 5 on July 17, 1998. A senior reactor operator (SRO) with no concurrent duties was assigned to directly supervise the reactor operator (RO) performing the reactivity manipulations. The SRO assigned a second RO to monitor and respond to the other Unit 1 control boards while the other RO focused on performing TS 5. The SRO conducted a pre-job brief including a discussion on previous TS 5 performance errors and expected reactor response given the new Unit 1 core reload. The RO appropriately exercised self-checking techniques, independent verification and procedural adherence during the surveillance testing. The inspectors observed that the RO used multiple control board indications to monitor for any reactivity abnormalities.

The inspectors identified, during a review of the TS 5 procedure, that the procedure contained insufficient controls for ensuring that the correct control rod bank had been selected prior to moving a rod bank. This created the potential for the incorrect rod bank to be moved.

c. Conclusions

Overall, plant operators performed T/S-required test TS-5 with an appropriate level of supervisory oversight and followed operating standards for the conduct of such tests. The inspectors identified that the test contained weak controls for ensuring that the operator selected the correct control rod bank prior to moving a rod bank, creating the potential for the incorrect rod bank to be moved.

M1.3 Implementation of 12-Week Work Planning and Scheduling Process

a. Inspection Scope (IP 61707)

The inspectors performed a review of the licensee's effectiveness in implementing a 12-week work planning and scheduling process.

b. Observations and Findings

In an effort to address long-standing work planning and scheduling problems, the licensee created a production planning organization to implement a 12-week work planning and scheduling process, which was based on a work week manager concept. The process was implemented to better address maintenance backlog items, more effectively manage LCO durations, and accommodate risk-based considerations when establishing work priorities.

The inspectors monitored the implementation of the work week management program and evaluated the planned activities versus completed work. This evaluation focused on safety-related equipment, risk significant systems and subsystems, and any other work that required entry into T/S LCOs.

Overall, the inspectors noted that while work week managers encountered some problems during their respective work weeks, the problems were not significant. No safety-related equipment remained out-of-service significantly longer than anticipated because of work control problems. For example, recent work on the "C" SW pump was planned and scheduled accurately to ensure no unnecessary LCO extensions were needed.

The production planning organization instituted a post-work week critique process to evaluate the past week's accomplishments and problems. These critiques were used to develop lessons-learned for future work weeks. The critiques revealed that many of the problems encountered during the implementation work week involved resource availability, parts readiness, and balancing planned versus emergent work. However, a reasonable percentage of planned work was accomplished (approximately 80 percent of planned).

c. Conclusions

The inspectors concluded that the licensee effectively implemented a 12-week work planning and scheduling process, which was an improvement compared to past practices. Even though problems were encountered, no safety-related equipment remained out-of-service for an unacceptable duration because of program problems. The types of problems encountered were typical for a new program in its initial implementation stage. Past program problems observed by the inspectors (IR 50-266/97006(DRP); 50-301/97006(DRP)) were not evident during this review.

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 SW Pump Replacement

a. Inspection Scope (IP 61707)

The inspectors observed the conduct of maintenance during the replacement of the "C" SW pump from July 13 to July 18, 1998. The following procedures were referenced during the course of this inspection:

- Routine Maintenance Procedure 9216-1, "Service Water Motor Removal and Installation," Revision 1
- Routine Maintenance Procedure 9216-2, "Service Water Pump Removal, Installation, and Maintenance," Revision 1
- Routine Maintenance Procedure 9216-3, "Service Water Pump Vibration Testing and Balancing for Post Maintenance Testing," Revision 1
- Work Order 9811089 A and B, "Service Water Pump "C" Replacement"

b. Observations and Findings

The inspectors observed the "C" SW pump replacement activities conducted between July 13 and July 18, 1998. The inspectors verified that the work activity was appropriately evaluated from a risk perspective relative to other ongoing safety-related system maintenance activities. The work was also effectively planned to minimize LCO durations.

During performance of the work, the inspectors observed that the procedures were being followed as required. Quality assurance parts and storage areas were also appropriately designated and controlled in accordance with station procedures. This represented improved performance from that observed during "A" SW pump repairs earlier this year (Section M2.2 of IR 50-266/98003(DRP); 50-301/98003(DRP)).

The inspectors also noted that maintenance supervision was frequently at the work site monitoring the progress of the job and that the work was completed as scheduled by the production planning organization.

c. Conclusions

The inspectors concluded that the maintenance organization effectively replaced the "C" SW pump in accordance with station procedures. The work was planned and scheduled appropriately and LCO time was closely monitored throughout the evolution. Previous inspector-identified concerns with other SW pump work conducted earlier this year were not evident.

M8 Miscellaneous Maintenance Issues

M8.1 (Closed) VIO 50-266/98003-06; 50-305/98003-06: Inadequate maintenance procedures for repair of SW pump P-32A. Several procedure and personnel performance problems were observed by the inspectors during the replacement of the "A" SW pump. During the conduct of similar replacement work on the "C" SW pump (Section M2.1), the previously observed problems were effectively corrected and did not recur.

M8.2 (Closed) LER 50-266/98-021: Missed T/S Surveillance for Unit 1 Low Pressure SI Core Deluge Isolation Valves (1SI-852A and 1SI-852B). On July 2, 1998, during the startup of Unit 1, the licensee determined that the Unit 1 low pressure SI core deluge isolation valves had not been stroke timed as required by the American Society of Mechanical Engineers (ASME) Section XI Code. Stroke testing of the valves is required each refueling outage; however, the testing had not been performed prior to restarting Unit 1. Procedures were modified to perform the testing with the reactor critical and the valves were stroke timed with satisfactory results on July 3, 1998. Adequate procedures were in place to ensure that the stroke timing was accomplished prior to startup; however, a misunderstanding of the specific contents of two similar IST procedures led to operations personnel canceling one of the ISTs (which performed the stroke timing). The failure to stroke time the 1SI-852A and 1SI-852B valves is a violation of T/S 15.4.2.B, which requires the valves be tested as specified by ASME Section XI. However, this non-repetitive, licensee-identified and corrected violation is being treated as an NCV, consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-266/98014-04(DRP)).

M8.3 (Closed) VIO 50-301/96012-02(DRP): This violation was issued for an inadequate reactor coolant pump maintenance procedure. The inadequacy involved an improperly sequenced valve manipulation that resulted in the inadvertent lowering of reactor vessel level by 0.5 inches. During the current inspection, the inspectors reviewed the routine maintenance procedures 9002-1 through 9002-9 and verified that the procedures had been revised, as necessary, to specify the proper valve manipulation sequence.

M8.4 (Closed) LER 50-266/98-001; 50-301/98-001: Missed Surveillances Required By The Section XI Pressure Test Program Constituted An Operation Prohibited By T/Ss. On January 2, 1998, the licensee determined that five previously identified ASME Section XI pressure tests which had not been performed during the current test interval were missed surveillances as described in T/S 15.4.0. The five pressure tests included:

- functional testing of the Unit 1 Train "A" emergency diesel generator
- functional testing of the Unit 2 Train "A" emergency diesel generator
- IST of the waste gas system
- IST of the Unit 1 boric acid tanks and transfer piping
- functional testing of the Unit 2 refueling water storage tank and associated piping.

The first three tests were conducted on January 3, 1998. The remaining two were completed prior to returning the affected systems to operable status. The root cause of the failure to perform the tests within the required frequency was due to procedural inadequacy. The corrective actions for this problem were described in the LER and included the revision of the procedures to address the inadequacy. The failure to perform these tests constituted a violation of T/S 15.4.2.B, which required that the valves be tested as specified by the ASME Section XI Code. However, this non-repetitive, licensee-identified and corrected violation is being treated as an NCV in accordance with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-266/98014-05(DRP); 50 301/98014-05(DRP)).

M8.5 (Closed) LER 50-266/98-018; 50-301/98-018: Missed Surveillances for Appendix J Testing of Containment Electrical Penetrations. On May 28, 1998, the licensee identified during a review of the ASME Section XI, Subsection IWE containment boundary inspection program for electrical penetrations, that certain vent valves attached to some of the penetration weld rings inside containment may have been serving a containment pressure boundary function. A CR (98-1877) was written to prompt an evaluation of the concern, and the licensee subsequently identified that vent valves in two of the electrical penetrations in Unit 1 did serve a containment pressure boundary function. The identified vent valves had not been subject to local leak rate testing, in violation of T/S 15.6.12 which requires that testing programs be in accordance with Regulatory Guide 1.163, "Performance Based Containment Leak-Rate Program." However, this non-repetitive, licensee-identified and corrected violation is being treated as an NCV in accordance with Section VII.B.1 of the NRC Enforcement Policy (NCV 50-266/98014-06(DRP); 50-301/98014-06(DRP)). The status of Unit 2 electrical penetration vent valves will be further evaluated during the scheduled refueling outage currently planned to begin on December 4, 1998. An operability determination was performed for the Unit 2

penetrations and the licensee determined that the penetrations were operable based on containment full pressure test data taken during 1997. The corrective actions taken to address the Unit 1 concerns will be applied to the applicable penetrations in Unit 2 following the inspections during the next refueling outage.

M8.6 (Closed) Inspection Follow-up Item 50-301/96012-03(DRP): Inspectors to review methodology for periodic surveillance of SI and RHR system leakage. Since the inspectors had identified a concern with this surveillance, the licensee significantly enhanced its safety-system leakage reduction program. For Unit 1, the two complicated and difficult-to-use governing procedures were broken down into five procedures. These new procedures were developed to enhance overall performance of the surveillance activities; to allow for more flexibility as to the reactor mode in which the surveillance activities were conducted, thus reducing LCO duration; and to reduce the size of the portion of the systems that were tested at any one time to enhance identification of problems. A similar revision of the Unit 2 procedures was scheduled for completion in late 1998.

III. Engineering

E4 Engineering Knowledge and Performance

E4.1 System Engineering for the AFW System

During the review of the AFW system, the inspectors noted that the system engineer was knowledgeable of system operational concerns and outstanding maintenance work requests. The engineer displayed a clear sense of ownership for the system and was effectively involved in the work control process.

E5 Engineering Staff Training and Qualification

E5.1 Engineering Staff Training

a. Inspection Scope (IPs 37550 & 37551)

The inspectors observed the July 20, 1998, training given on print reading to engineering support personnel seeking initial qualification.

b. Observations and Findings

The engineering support personnel initial training for print reading consisted of several lesson plans covering plant specific logic, electrical, piping, and instrumentation drawings. The instructors thoroughly explained each type of drawing in terms of its characteristics, symbols, and usage. The instructors then guided the students through exercises using actual plant drawings of each type to reinforce the material presented. Instructors readily answered questions whenever a student appeared unclear over some aspect of the presentation. In addition, the instructors made numerous job specific illustrations of how a particular type of drawing could be used by the engineering support personnel in performance of their duties. The inspectors noted the students were professional and appeared receptive to the training.

c. Conclusions

The engineering support personnel initial training material appeared to be sufficient in depth and scope. The training instructors were knowledgeable, well prepared and presented the material effectively.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) LER 50-266/98017: Deficient Welds On "B" Loop RTD [resistance temperature detector] Piping Pipe Whip Restraint. On May 12, 1998, the licensee identified deficiencies in welds on a portion of a support for the "B" loop resistance temperature detector bypass piping. The deficiencies involved welds on the knee brace and a structural butt weld for a pipe whip restraint associated with the support. This support had been removed and reinstalled during a modification (MR 84-284) which was completed in 1987. During a review of the installed modification, a design engineer questioned the potential for the welds to fail, affecting emergency core cooling system piping located in the vicinity of the piping restraint. The deficient welds were reworked and repaired to appropriate standards. The failure to include adequate weld specifications in the initial modification installation procedure was a violation of 10 CFR Part 50 Appendix B, Criterion V, "Instructions, Procedures, and Drawings." However, this non-repetitive, licensee-identified and corrected violation is being treated as an NCV consistent with Section VII.B.1 of the NRC Enforcement Policy (NCV 50 266/98014-07(DRP)).

E8.2 (Closed) Inspection Follow-up Item 50-266/96012-06(DRP); 50-301/96012-06(DRP): Inspectors to review the failure analysis for the P-32A SW pump motor. The report for the failure analysis stated that the motor failed because of failed windings. A vendor conducted an analysis and concluded that the windings were dirty, but did not attribute the failure to that condition. Notwithstanding the inconclusive failure analysis, the licensee reevaluated the motor starting duties and revised several surveillance procedures to ensure that the manufacturer's recommended starting duties were not exceeded.

IV. Plant Support

P5 Staff Training and Qualifications in Emergency Preparedness

P5.1 Emergency Response Drill

a. Inspection Scope (IPs 71750 & 82301)

The licensee conducted an emergency response training drill on July 8, 1998. The inspectors observed portions of the drill from the control room simulator, the technical support center, and the site boundary control building. The inspectors also attended the licensee's drill evaluation meeting held on July 9, 1998.

b. Observations and Findings

An announced drill of the site's emergency response organization was conducted during off-hours on July 8, 1998, from 3:45 a.m. until 10:00 a.m. The drill included activation of all on-site and off-site emergency response facilities and a site evacuation. This was the first drill conducted by the licensee in 1998 which involved activation of all the station emergency response facilities.

The inspectors had the following observations regarding the drill:

- The operators in the simulator control room took actions to hold open a containment isolation valve which was outside the scope of approved procedures. This action was decided upon and directed without appropriate consideration or invoking of 10 CFR 50.54(x) and (y).

- During a security intruder mini-drill scenario, plant operators were not aware of expectations and actions in the event of an intruder entering the facility. After further review, the inspectors determined that training for the operators regarding expectations and actions during this situation was not effective.

- The drill scenario included a loss of offsite power along with the inability to power the Unit 1 safety-related electrical busses, including the safety-related battery chargers. The total time in this condition was about 4 hours. However, the inspectors noted that the control room simulator battery output voltage indicators remained stable at 125 volts direct current throughout the 4 hours; whereas, the station batteries were rated at 125 volts for one hour at which point the voltage would drop down to 108 volts. The inspectors questioned the simulator training personnel about the validity of the simulator modeling for a loss of battery charger event. Training personnel explained that the simulator model does not automatically lower battery output voltage as a function of time but that the instructor must do that manually if he desires that to be an aspect of the simulator scenario. The inspectors noted the potential for negative operator training if battery voltages were not lowered during a loss of battery charger scenario.

- During the site evacuation portion of the drill, security officers did not allow personnel responding to the simulated event access to the site. This resulted in the in-plant emergency response facilities not being adequately staffed and fully operational until approximately 1.5 hours after the initial notifications.

- Clear lines of communications and decision making authority were not established between the simulator control room, the technical support center, and the operations support center, once these became operational.

- Command and control in the technical support center was poor. Facility update briefings were not consistently provided and many facility staff members were not certain of the plant conditions at various times during the drill.

The inspectors attended licensee critiques following the drill and a management briefing held on July 9, 1998. In general, the critiques addressed many of the inspectors observations and contained candid comments and relevant improvement

recommendations. The licensee essentially concluded that the emergency response organization performed very poorly during the drill. The Chief Nuclear Officer echoed this conclusion based on his personal observations of the drill.

Several CRs were generated as a result of the drill. The licensee's critique report contained five deficiencies, four weaknesses, and numerous improvement items. In response to the poor drill performance, the licensee planned to conduct several tabletop training exercises and subsequent facility activation drills in the next several months. The inspectors concluded that the licensee properly identified areas for improvement through the drill critique process, and licensee senior management sufficiently supported the need for improvement.

The inspectors discussed the licensee's poor drill performance with region-based emergency preparedness specialists. The licensee's emergency response manager subsequently met with Region III personnel to discuss the drill performance and corrective actions. The next NRC evaluated exercise is currently scheduled for November 1998.

c. Conclusions

The licensee conducted a drill of the emergency response organization. The performance of the organization during the drill, as observed by the licensee and the inspectors, was poor. Several improvement initiatives have been undertaken by the licensee's emergency response organization to address the problems.

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 August 21, 1998. 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

Wisconsin Electric Power Company

M. E. Reddemann, Site Vice President
R. G. Mende, Plant Manager
C. R. Peterson, Director of Engineering
J. R. Anderson, Operations Manager
D. P. McCloskey, Maintenance Manager
J. G. Schweitzer, Site Engineering Manager
T. P. Kirwin, Production Planning Manager
R. P. Farrell, Health Physics Manager
V. M. Kaminskas, Regulatory Services and Licensing Manager

INSPECTION PROCEDURES USED

IP 37550:	Engineering
IP 37551:	Onsite Engineering
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726:	Surveillance Observations
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support Activities
IP 82301:	Evaluation of Exercises for Power Reactors
IP 92901:	Follow-up - Operations
IP 92902:	Follow-up - Maintenance
IP 92903:	Follow-up - Engineering
IP 92904:	Follow-up - Plant Support

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-266/98014-01(DRP)	NCV	Emergency safety features actuation automatic start of service water pumps
50-301/98014-02(DRP)	NCV	Steam generator vent mispositioned during plant heatup
50-266/98014-03(DRP) 50-301/98014-03(DRP)	NCV	Containment spray system discharge pressure indicators not isolated
50-266/98014-04(DRP)	NCV	Missed T/S surveillance for Unit 1 low pressure safety injection core deluge isolation valves
50-266/98014-05(DRP) 50-301/98014-05(DRP)	NCV	Missed surveillances required by the Section XI pressure test program constituted an operation prohibited by T/Ss
50-266/98014-06(DRP) 50-301/98014-06(DRP)	NCV	Missed surveillances for Appendix J testing of containment electrical penetrations
50-266/98014-07(DRP) 50-301/98014-07(DRP)	NCV	Deficient welds on "B" loop RTD piping pipe whip restraint

Closed

50-266/98022 50-301/98022	LER	Technical Specification LCOs for safety injection and residual heat removal operation

50-266/98019 50-301/98019	LER	Containment hydrogen monitor inoperability
50-266/98014	LER	Emergency safety features actuation automatic start of service water pumps
50-266/98014-01(DRP)	NCV	Emergency safety features actuation automatic start of service water pumps
50-266/96012-04(DRP) 50-301/96012-04(DRP)	VIO	Improper spent fuel pool heat exchanger line-up
50-301/98001	LER	Steam generator vent mispositioned during plant heatup
50-301/98014-02(DRP)	NCV	Steam generator vent mispositioned during plant heatup
50-266/98013 50-301/98013	LER	Containment spray system discharge pressure indicators not isolated
50-266/98014-03(DRP) 50-301/98014-03(DRP)	NCV	Containment spray system discharge pressure indicators not isolated
50-266/98003-06(DRP) 50-301/98003-06(DRP)	VIO	Inadequate maintenance procedures for repair of service water pump P-32A
50-266/98021	LER	Missed T/S surveillance for Unit 1 low pressure safety injection core deluge isolation valves
50-266/98014-04(DRP)	NCV	Missed T/S surveillance for Unit 1 low pressure safety injection core deluge isolation valves
50-301/96012-02(DRP)	VIO	Unplanned lowering of reactor vessel level during reactor coolant pump maintenance
50-266/98001 50-301/98001	LER	Missed surveillances required by the Section XI pressure test program
50-266/98014-05(DRP) 50-301/98014-05(DRP)	NCV	Missed surveillances required by the Section XI pressure test program constituted an operation prohibited by T/Ss
50-266/98018 50-301/98018	LER	Missed surveillances for Appendix J testing of containment electrical penetrations
50-266/98014-06(DRP) 50-301/98014-06(DRP)	NCV	Missed surveillances for Appendix J testing of containment electrical penetrations

50-301/96012-03(DRP)	IFI	Safety injection and residual heat removal system leakage test performance
50-266/98017	LER	Deficient welds on "B" loop RTD piping pipe whip restraint
50-266/98014-07(DRP)	NCV	Deficient welds on "B" loop RTD piping pipe whip restraint
50-266/96012-06(DRP) 50-301/96012-06(DRP)	IFI	Service water pump P-32A motor replacement post maintenance test

LIST OF ACRONYMS USED IN POINT BEACH REPORTS

AC	Alternating Current
AFW	Auxiliary Feedwater
ASME	American Society of Mechanical Engineers
CFR	Code of Federal Regulations
CL	Operations Checklist
CLB	Current Licensing Basis
CR	Condition Report
CSTs	Condensate Storage Tanks
°F	Degrees Fahrenheit
DRP	Division of Reactor Projects
ESF	Engineered Safety Feature
EP	Emergency Planning
FSAR	Final Safety Analysis Report
IFI	Inspection Follow-up Item
IP	Inspection Procedure
IPE	Individual Plant Examination
IR	Inspection Report
ILRT	Integrated Leak Rate Test
IST	Inservice Test
IT	Inservice Test Procedure
HVAC	Heating, Ventilation, and Air Conditioning
LCO	Limiting Condition for Operation
LER	Licensee Event Report
NCV	Non-Cited Violation
NP	Nuclear Power Department Procedure
NRC	Nuclear Regulatory Commission
OI	Operating Instruction
OM	Operations Manual
OOS	Out-of-Service
OP	Operating Procedure
OSRC	Off-Site Review Committee
P&ID	Piping and Instrumentation Drawing
psig	Pounds Per Square Inch Gauge
RHR	Residual Heat Removal
RO	Reactor Operator
RP	[illegible]on Protection
RWST	Re[illegible]g Water Storage Tank
SFP	Spent Fuel Pool
SI	Safety Injection
SRO	Senior Reactor Operator
SW	Service Water
TDAFW	Turbine Driven Auxiliary Feedwater
T/S	Technical Specification
TS	Technical Specification Test
URI	Unresolved Item
VIO	Violation