U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-266/92012(DRP); No. 50-301/92012(DRP)

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

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

Facility Name: Point Beach Units 1 and 2

Inspection At: Two Rivers, Wisconsin

Dates: May 4 through June 28, 1992

Inspectors: K. R. Jury
J. Gadzala

Accompanying Personnel: M. Streibich

Approved By: for Jon B. Hopkins 7-16-92
V. N. Jackiw, Chief Date
Reactor Projects Section 3A

Inspection Summary

Inspection from May 4 through June 28, 1992, (Reports No. 50-266/92012(DRP); No. 50-301/92012(DRP))

Areas Inspected: Routine, unannounced inspection by resident inspectors of corrective actions on previous findings; plant operations; radiological controls; maintenance and surveillance; emergency preparedness; security; engineering and technical support; safety assessment/quality verification; and Temporary Instructions (TI) 2515/112 and 2515/113.

Results: One unresolved and one inspection follow-up item were identified. An Executive Summary Follows.

Plant Operations

On June 5th Unit 1 was placed on line after a 55 day refueling outage. An extension of five days was needed to repair the main steam isolation valves (MSIVs), when one failed to close during the startup testing.

The normal boration flow path on Unit 2 was found to blocked on May 9. The cause was believed due to be an improperly set heat tracing circuit thermostat. Corrective actions for this and similar event on Unit 1 remain an unresolved item.

During maintenance related outage activities, the Unit 1 reactor coolant system was thermally cycled at a rate higher than allowed by technical specifications. For details regarding the special NRC inspection of the event, see Inspection Reports 50-266/92014; 50-301/92014.

On June 11, during a review of test results involving emergency diesel generator load sequencing, plant engineers identified that the test acceptance criteria were not consistent with the approved technical specifications and final safety analysis report (FSAR). The company verbally requested and was granted, a temporary waiver of compliance until a pending technical specification amendment was approved and the FSAR was formally changed. This issue remains an unresolved item.

Radiological Control

The plant continues to make good progress in their man-rem reduction program. Year to date exposure through May was about 123 Rem. The exposure for this same period in 1991 was 134 Rem.

Maintenance/Surveillance

The investigation into the MSIV test failure found binding between the valve shaft and packing follower. New shafts and packing rings had been installed on both MSIVs during the refueling outage. Further investigation revealed that minor undocumented procedure deviations during packing ring installation on the first valve were not performed on the second valve. The resulting excessive tightness contributed to misalignment between the shaft and packing follower. Both valves were repaired and successfully tested.

During a diesel generator surveillance test a turbocharger cover bolt broke. A different bolt had broken on the same component during the previous surveillance test, however, limited actions were taken. Discussions with the vendor prompted the replacement of all similar bolts on both diesels and the addition of these bolts to the preventative maintenance schedule.

Emergency Preparedness

The plant commenced a 30 day test of the new emergency notification system telephones in parallel with the old system.

Engineering and Technical Support

During the reconstitution of a fuel assembly due to an observed defect, the plant applied the requirements of the new "infrequent evolutions" procedure. This evolution was completed without incident.

A small spill of primary system water occurred during flow tests on a core cooling system due to a flow transmitter drain valve misposition. Corrective actions from a recent similar event could not be implemented in time to prevent this incident. Another minor coolant spill occurred while performing a leak test on a check valve. The cause was attributed to the use of an inappropriate type of plastic tubing to collect leakage during the test.

The leak test failure of an Event V check valve was attributed to rubbing between the anti-rotation nubs and valve disk. Management decided to modify this valve and four similar valves even though the other valves had already passed their leak tests. This decision and associated design process demonstrated a conservative safety conscious attitude and resulted in extending the outage by several days.

Because of extensive problems, the gas turbine was taken out of service for a major overhaul. A trailer mounted diesel generator was obtained to provide a backup power source for the alternate shutdown panel. During the interval between taking the turbine out of service and placing the temporary diesel in service, fire watches were instituted in the cable spreading and vital switch gear rooms.

Self-initiated walkdowns of equipment seismic mounting was commenced in connection with Seismic Qualification User Group (SQUG) initiatives.

Safety Assessment/Quality Verification

Although the site has no formal program to review changes to the environs around the facility, some of the related information is obtained during the plant's annual land use survey for the milk sampling program and population data review for emergency preparedness purposes. The inspector's own assessment of the surrounding area determined that there were no noteworthy changes since initial licensing.

The plant has adequate instrumentation and administrative controls to ensure reliable decay heat removal capability during plant outages. Additionally, plant management has fostered a discerning safety awareness among plant operators regarding the risks involved with reduced inventory operation. Three items identified during this inspection will be tracked as an inspection follow-up item and addressed in a future report.

DETAILS

1. Persons Contacted (71707) (30702)

*G. J. Maxfield, Plant Manager
J. C. Reisenbuechler, Manager - Operations & Technical Support
*T. J. Koehler, Manager - Maintenance & Engineering
N. L. Hoefert, Manager - Operations
J. G. Schweitzer, Manager - Maintenance
J. A. Palmer, Manager - Instrument & Controls
W. J. Herrman, Manager - Technical Services
T. L. Fredrichs, Manager - Chemistry
J. J. Bevelacqua, Manager - Health Physics
R. D. Seizert, Manager - Training
*J. F. Becka, Manager - Regulatory & Staff Services
*F. A. Flentje, Administrative Specialist

Other company employees were also contacted including members of the technical and engineering staffs, and reactor and auxiliary operators.

*Denotes the personnel attending the management exit interview for summation of preliminary findings.

2. Corrective Action on Previous Inspection Findings (92701)

a. (Closed) Open Item (266/90015-01; 301/90015-01): Spent Fuel Pool Water Sample Results to be Submitted to NRC for Comparison.

During an inspection conducted in July 1990, the plant was requested to send a sample of spent fuel pool cooling water to their contractor for analysis of gross β, H-3, Sr-89, and Sr-90. The results were to be submitted to NRC Region III for comparison with an analysis by the NRC Reference Laboratory on a split of the same sample.

The plant's sample results were received from their contractor and submitted to NRC Region III on November 14, 1990. The results were reviewed and no concerns were noted. This item is closed.

b. (Closed) Open Item (266/90015-02; 301/90015-02): Non-Conservative Disagreements Between NRC and Plant Analysis of I-132 and I-134.

During an inspection conducted in July 1990, a comparison of reactor coolant sample analysis done by NRC and the plant indicated non-conservative disagreements for I-132 and I-134. The plant has since analyzed these disagreements and determined that the small geometries previously employed (eg. 1 ml test tube), yielded lower than representative values. As a result, the plant switched to a one liter geometry for iodine analysis, which has yielded consistently higher values for both I-132 and I-134.

A new procedure, CAMP-410, "Determination of Radioactive Iodine and Iodine 131 Equivalents in Reactor Coolant", has been issued to formalize these changes. This item is closed.

c. (Closed) Unresolved Item (266/92004-01): Outside Ambient Air Temperature Monitoring.

Point Beach recently implemented an abnormal operating procedure AOP-16A, "Fuel Oil System Abnormal Operations". This procedure is entered if outside air temperature falls to less than -12° F (-24° C). The inspector had noted that the only means of alerting operators to excessively cold air temperatures is an alarm on the plant process computer. Process computer alarms, however, have had a history of not being heeded.

The plant's corrective action to this deficiency was to revise its Safeguard Shift Log, Turbine Building Shift Log, and Turbine Building Cold Shutdown Log. These revisions included setting a specification for outside air temperature as greater than -12° F (-24° C), and to provide a note for the auxiliary operator to notify the shift supervisor to recirculate the in-service fuel oil storage tank in accordance with AOP-16A when air temperature falls below this temperature. The inspector reviewed these documents and had no further concerns. This item is closed.

d. (Closed) Unresolved Item (266/90004-05): Station Battery Room Temperature.

The inspector noted that station battery D105 and D106 pilot cell temperatures were about 56° F (13° C) on January 16. The batteries are designed to provide 650 amp-hours at 77° F (25° C). Although the vendor technical manual specifies that the batteries are designed to operate at temperatures as low as 32° F (0° C), the battery's capacity decreases with the temperature drop. This fact brought the batteries' operability into question.

The plant's corrective action was to modify the battery room heating system. This modification involved removing the previously existing wall mounted space heaters, installing auxiliary building battery duct heaters HX-243A (for battery D-105) and HX-243B (for battery D-106), and replacing air flow switches in the heating system. The inspector observed that the duct heaters were sufficient to maintain the battery room temperature in the proper range of 77 ± 5° F (25 ± 3° C). No further concerns were noted and this item is closed.

3. Plant Operations (71707) (71710) (93702)

a. Control Room Observation (71707)

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the inspection period. During these discussions and observations, the inspectors ascertained that operators were alert, cognizant of current plant conditions, and generally attentive to changes in those conditions. The inspectors noted that a high degree of professionalism attended most facets of control room operation and that both unit control boards were generally in a 'black board' condition (no non-testing annunciators in alarm condition). Several shift turnovers were also observed and appeared to be handled in a thorough manner.

The inspectors performed walkdowns of the control boards to verify the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components.

The Plant Manager was observed making periodic tours of the control room and through the plant. The Vice President-Nuclear, was also observed touring the plant.

b. Facility Tours (71707)

Tours of the turbine building, primary auxiliary building, Unit 1 containment, and circulating water pumphouse were conducted to observe plant equipment conditions, including plant housekeeping and cleanliness conditions, status of fire protection equipment, fluid leaks and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance.

During facility tours, inspectors noticed very few signs of leakage and that all equipment appears to be in good operating condition. Overall, plant cleanliness has remained good.

c. Unit 1 Operational Status (93702)

The unit completed a 50 day refueling outage (number 19) and achieved criticality on May 30. A subsequent failure to close a MSIV forced a unit shutdown on May 31, extending the outage five days. The plant was cooled down to repair the faulty valve. The unit was restarted June 4, placed on line June 5 and reached 100 percent power June 9. The unit was taken back off-line June 11 due to a gasket leak that developed on the heater drain tank manway cover. The faulty gasket was replaced and the unit placed back on-line June 12. A return to 100 percent power was achieved June 14.

On June 28, the No.1 governor valve on the main turbine went shut. This caused a power reduction of about 15 percent. About 8 minutes later, this valve reopened. No immediate cause could be found for this event, although a faulty circuit was suspected. The plant investigation of this problem remained ongoing at the conclusion of this period. Power was restored to 100 percent.

d. Unit 2 Operational Status (93702)

The unit continued to operate at full power during this period with only requested load following power reductions and the following exception.

On May 9, power was reduced to about 70 percent while rerouting direct current (DC) power cables to a new distribution panel. Power was reduced to minimize the effect of any plant transient had DC power been inadvertently interrupted during the evolution. The cable rerouting was completed satisfactorily and the plant was returned to full power later that day.

e. Loss of Normal Boration Flow Path (71707)

While reducing Unit 2 reactor power on May 9, operators found that the normal boration flow path was blocked (the emergency boration flow path remained available). The blockage existed in a section of piping at the vicinity of the boric acid flow totalizer. The heat tracing circuits in that section were controlling temperature about 80° F (44° C) below the normal settings. Operators raised the setpoints of the primary and secondary heat tracing thermostats on this section of piping. The blockage cleared a few hours later and the normal boration flow path was restored. The cause was believed to have been the boric acid solidifying in the piping due to the heat tracing circuits being improperly adjusted. It was noted that some of the heat tracing controllers are moved clockwise to raise temperature, while others must be moved counter clockwise.

A similar blockage occurred on Unit 1 on January 20. Corrective actions for both events remain unresolved (266/92004-02).

f. Excessive Reactor Coolant System Cooldown Rate (93702)

On May 27, while performing a crevice flush of steam generators during a refueling outage, Unit 1 exceeded the technical specification cooldown rate limit of 100° F/hr (56° C/hr). Reactor coolant system temperature decreased from about 305° F (152° C) to 170° F (77° C) in a 1-hour period during performance of the crevice flushing procedure. This event was not identified until the following shift. The shift supervisor performing the second cycle of the crevice flush procedure noted difficulty in maintaining cooldown rates within required limits. Upon reviewing the log to determine how the previous shift had managed the first

cycle, he discovered that the technical specification limits had been exceeded.

This is the second time in recent years that the plant has performed this evolution under these conditions. Previous crevice flushes were performed either at reduced temperatures or with residual heat removal (RHR) flow secured. An analysis performed by the reactor vessel's vendor and reviewed by the NRC determined that the lowest ratio of allowable stress to stress intensity induced in the reactor vessel was 1.18. Therefore, stress limits in the reactor vessel wall were not exceeded during this cooldown incident. Details of this apparent violation are discussed in special NRC Inspection Reports No. 50-266/92014; 50-301/92014.

g. Failure of Emergency Safeguards Load Sequencing Relays (71707)

On May 15, during performance of procedure ORT 3, "Safety Injection Actuation with Loss of Engineered Safeguards AC", several emergency safeguards systems did not load onto the emergency diesel generator (EDG) within their procedurally required time intervals. These discrepancies were identified during the plant's review of test results. A condition report and maintenance work requests were initiated to document, investigate, and correct the load sequencing concern.

The loads which were identified as failing to properly load onto the EDG were a containment accident fan cooler and a service water (SW) pump. The Agastat relay for the accident fan unit was replaced to bring its time within that required by procedure. The SW pump data was later found to be erroneous because the pump actually loaded within the required interval. An evaluation by the plant on June 11, determined that the test acceptance criteria did not match that required by technical specifications and the FSAR, which were more restrictive. As a result, there were additional loads that met the test acceptance criteria but were outside of technical specifications. This condition put the plant in a limiting condition for operation on both EDGs. The company verbally requested and was granted, a temporary waiver of compliance until they could issue an FSAR change and to receive a technical specification amendment that was in process. Details of the circumstances surrounding this issue are delineated in Licensee Event Report 266/92-004. This issue remains unresolved pending completion of its review and the associated history (266/92012-01).

h. Chemical Spill (71707)

On May 21, the plant notified the NRC via the emergency notification system that about 600 gallons of sodium hydroxide at a concentration of 50 weight percent was inadvertently discharged into the site's retention pond. This condition was discover during routine sampling of the retention pond. A pH value of 12

was measured in the pond, instead of the normally expected value of 8. The retention pond contents are diluted through the plant's circulating water system prior to being discharged to Lake Michigan and no discharge limits were exceeded. The Wisconsin Department of Natural Resources was informed of this event by Wisconsin Electric.

i. Engineered Safeguards Features (ESF) System Walkdown (71707)

The inspectors performed a detailed walkdown of portions of the containment spray system in order to independently verify operability. The containment spray system walkdowns included verification of the following items:

- Inspection of system equipment conditions.
- Confirmation that the system check-off-list (COL) and operating procedures are consistent with plant drawings.
- Verification that system valves, breakers, and switches are properly aligned.
- Verification that instrumentation is properly valved in and operable.
- Verification that valves required to be locked have appropriate locking devices.
- Verification that control room switches, indications and controls are satisfactory.
- Verification that surveillance test procedures properly implement the Technical Specifications surveillance requirements.

Plastic funnels were noted under each of the spray header trains just inside containment. These were apparently intended to collect any leakage from the drain hole drilled in the bottom of each train of spray piping. The funnels, however, did not appear on any engineering drawings and were not connected to any drain tubing. As a result, a boric acid buildup had occurred on the adjacent walls and on some electrical conduit beneath the funnels. Plant management directed the funnels removed and the boric acid buildup cleaned up. Two test line flow transmitter isolation valves (664A & 664B) were shown on the engineering drawing as being normally closed, but listed on the valve lineup sheet as being normally open. Plant engineers stated that the drawing would be corrected to indicate the valve's proper position. No other significant deficiencies were noted.

These reviews and observations were conducted to verify that facility operations were conducted safely and in conformance with requirements established under technical specifications, federal regulations, and administrative procedures.

4. Radiological Controls (71707)

The inspectors routinely observed the plant's radiological controls and practices during normal plant tours and the inspection of work activities. Inspection in this area includes direct observation of the use of Radiation Work Permits (RWPs); normal work practices inside contaminated barriers; maintenance of radiological barriers and signs; and health physics (HP) activities regarding monitoring, sampling, and surveying. The inspectors also observed portions of the radioactive waste system controls associated with radwaste processing.

From a radiological standpoint the plant is in good condition, allowing access to most sections of the facility. During tours of the facility, the inspectors noted that barriers and signs also were in good condition. When minor discrepancies were identified, the HP staff quickly responded to correct any problems.

The plant continues to make good progress in their man-rem reduction program. Total exposure for the recently completed Unit 1 refueling outage was about 114 rem. The estimated dose reduction due to ALARA efforts was estimated at 10 rem. Cumulative year to date exposure through May was about 123 Rem. The comparable exposure for this same period in 1991 was 134 Rem.

All activities were conducted in a satisfactory manner during this inspection period.

5. Maintenance/Surveillance Observation (62703) (61726)

a. Maintenance (62703)

Station maintenance activities of safety-related systems and components listed below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications.

The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable; functional testing and/or calibrations were performed prior to returning components or systems to service; quality control records were maintained; activities were accomplished by qualified personnel; parts and materials used were properly certified; radiological controls were implemented; and fire prevention controls were implemented.

Work requests were reviewed to determine status of outstanding jobs and to assure that priority is assigned to safety-related equipment maintenance which may affect system performance.

Selected portions of the following maintenance activities were observed and reviewed:

- SMP 1106 (Revision 0), Safety Injection Pump P-15B Motor Connection Inspection, Unit 1

- Repair of 1MS-2018 MSIV

  Inspection of this valve following its failure to stroke shut during startup testing on May 31, revealed that the valve disk shaft had been galled by the packing follower. The galling was sufficient to bind the valve and prevent it from shutting properly. The valve shaft had been replaced during the recent refueling outage with one of a softer metal. This was in response to vendor recommendations addressing cracking concerns with the old shaft material.

  The new shaft metal was the same type as the packing follower. This fact, coupled with the geometries involved with the packing follower, allowed a minor misalignment in the packing follower to cause it to come in contact with the shaft. Subsequent operation of the valve caused the two rubbing parts to gall and bind.

  The plant's investigation also found that the packing rings installed during the outage on the 2018 MSIV were excessively tight. The maintenance crew that worked the 2017 MSIV broke several rings while attempting to install them on the shaft. They finally resorted to grinding the inside diameter slightly to obtain a proper fit. No documentation was made of this fact and no procedure update was submitted to ensure future evolutions were performed in this manner. The crew working the 2018 MSIV, however, followed the existing procedure exactly and somehow managed to fit the packing ring tightly over the shaft. This likely contributed to the misalignment of the packing follower which resulted in the shaft galling.

  Both valves' packing followers were machined to prevent contact with the valve shaft. New packing rings were also installed with the inside diameter ground to ensure a proper fit over the shaft. The valves were reassembled and tested satisfactorily.

- Overhaul of G05 gas turbine generator

  The company obtained the services of a maintenance team from one of their fossil fueled plants to assist in overhauling the gas turbine.

b. Surveillance (61726)

The inspectors observed surveillance testing and verified that testing was performed in accordance with adequate procedures; that test instrumentation was calibrated; that limiting conditions for operation were met; that removal and restoration of the affected components were accomplished; that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test; and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

Selected portions of the following test activities were observed and reviewed:

- ORT 3 (Revision 24), Safety Injection Actuation with Loss of Engineered Safeguards AC, Unit 1

  Failures of several diesel generator load sequencing relays that occurred during this test are discussed in paragraph 3.g.

- TS-2 (Revision 34), Emergency Diesel Generator G02 Biweekly

  During conduct of this test on April 28, one of the six hold down bolts for the turbocharger cover broke off. The bolt was replaced, but no other action was taken. During the next test of this diesel on May 12, another of these bolts broke. At this point, an evaluation of the problem was conducted and the diesel vendor was contacted. An operability determination made by plant management deemed the diesel to have remained operable with one of these bolts being broken. All six bolts were subsequently replaced on both the station's emergency diesels.

  The turbocharger hold down bolts on this diesel are believed to date back to initial installation. The hold down bolts on the G02 diesel turbocharger are believed by plant personnel to have been replaced about 10 years ago, but maintenance records do not record the reason for their replacement.

  The vendor informed the plant that stresses on these bolts can be expected to lead to their long term failure. As a result, the plant intends to change their annual diesel maintenance procedure (under plant tracking identifier CR 92-254) to require annual replacement of all six hold down bolts. Additionally, a modification is being considered to alter the diesel's exhaust piping to reduce

the stresses that build up on the turbocharger cover during diesel operation.

- IT-280 (Revision 11), Main Steam Stop Valves (Stroke Test), Unit 1

  On May 31, Unit 1 MSIV 1MS-2018 failed to fully shut during startup testing. The valve only went 70 percent shut. The valve required 250 ft-lbs (339 Nm) force to resume movement and 450 ft-lbs (610 Nm) force to fully seat. Galling of the valve disk shaft by the packing follower was determined to have been the cause of the binding. Details of the valve repair are contained in paragraph 5.a above. The valve was successfully tested following repairs.

- IT-01 (Revision 27), High Head Safety Injection Pumps & Valves (Monthly), Unit 1

- IT-520A (Revision 6), Leakage Reduction & Preventive Maintenance Program Test of the Safety Injection System (Annual), Unit 1

Other than noted above, no discrepancies were observed during any of the above tests.

6. Emergency Preparedness (71707)

An inspection of emergency preparedness activities was performed to assess the plant's implementation of the site emergency plan and implementing procedures. The inspection included monthly review and tour of emergency facilities and equipment, discussions with company staff, and a review of selected procedures.

The plant commenced a 30 day test of the new emergency notification system telephones in parallel with the old system. The new phones are standard push button phones utilizing the government's FTS 2000 phone network.

All activities were conducted in a satisfactory manner during this inspection period.

7. Security (71707)

The inspectors, by direct observation and interview, verified that portions of the physical security program were being implemented in accordance with the station security plan. This included checks that identification badges were properly displayed, vital areas were locked and alarmed, and personnel and packages entering the protected area were appropriately searched. The inspectors also monitored any compensatory measures that may have been enacted by the plant.

All activities were conducted in a satisfactory manner during this inspection period.

8. Engineering and Technical Support (71707)

The inspectors evaluated engineering and technical support activities to determine their involvement and support of facility operations. This was accomplished during the course of routine evaluation of facility events and concerns, through direct observation of activities, and discussions with engineering personnel.

a. Fuel Reconstitution (71707)

During an inspection of fuel being removed from the Unit 1 core, a visual defect was identified in one fuel rodlet. The assembly containing this rodlet was subsequently reconstituted by replacing the defective fuel rodlet with a stainless steel filler rodlet. Because of the nature of this evolution, the plant implemented the requirements of a new procedure, PBNP 3.4.19, "Infrequently Performed Tests or Evolutions/Special Test Procedures". The purpose of this procedure is to provide guidance on the special controls required by those tests or evolutions which have the potential to significantly degrade the plant's margin of safety. This evolution was completed without incident.

b. Reactor Coolant Spills During Testing (71707)

During the recent Unit 1 refueling outage, a full flow test line was installed on the residual heat removal (RHR) system piping. While flow testing a portion of this system on May 9, approximately 5 gallons (19 l) of reactor coolant water sprayed into the containment spray pump room due to a flow transmitter's drain valves being left open. A plant engineer had verified these valves shut during test preparations about one and a half days before the conduct of the test.

This event is an example of inadequate control of test activities, as was an April 29 spill of reactor coolant for which a Notice of Violation was issued on May 15 (266/92009-01). The recently proposed corrective action in response to the April 29 event is also applicable to this event and will be addressed in a future report.

An unrelated spill of coolant occurred while performing a leak check of Unit 1 charging system check valve 1-295 on May 27. About 28 gallons (104 l) of reactor coolant water spilled when a section of temporary plastic tubing split downstream of the vent valve where it had been connected to collect leakage during the test. The plant's initial investigation results revealed that the tubing used for this evolution has a maximum design temperature of 175° F (80° C), while the procedure directed that the leak test be performed at 175° to 190° F (80° to 88° C). The plant is

determining corrective action for this improper selection of material under their tracking identifier CR 92-317.

c. Event V Check Valve Testing (71707)

The plant conducted a leak test of the Unit 1 inter-system loss of coolant accident (Event V) check valves, procedure TS-31, on May 20. Residual heat removal check valve 853D failed the initial leak test attempt. This valve is nearest the reactor vessel on the core deluge line. Subsequent radiography of the valve determined that the valve disk was about ¼ inch (.64 cm) off its seat. A similar test failure occurred on Unit 2 during the autumn 1991 refueling outage, details of which appear in NRC Inspection Reports No. 50-266/91022; 50-301/91022.

Reactor coolant pumps were run once before the start of the test as per the procedure to assist in seating the check valves. Following the failure of valve 853D to pass its leak test, reactor coolant pumps were run again. The valve became seated during this time and passed the second leak test. Because these type valves experienced problems with back leakage during the previous outage on the other unit, plant management decided to disassemble the valve and inspect its internals. As a result of the inspection, the plant determined that anti-rotation nubs on the valve disk may have been rubbing against the valve arm. This was believed to have prevented the valve from fully shutting. Plant management decided to modify this and four other similar valves to preclude recurrence. This modification consisted of removing the anti-rotation nubs on the disc and pinning the disc to the valve arm to prevent rotation.

Plant management demonstrated a systematic approach to the resolution of this problem. A safety conscious attitude was evident in the valve modification design process, including the decision to extend the refueling outage to modify additional similar valves even though they had passed their leak tests. The reactor coolant system was required to be placed into a reduced inventory condition to effect these modifications and appropriate precautions were taken by the plant during the conduct of this evolution. All the valves were successfully leak tested following completion of this modification. Either a similar modification or valve disk replacement is being considered as corrective action for Unit 2 valves of this type.

d. Temporary Alternate AC Source Installation (71707)

During an inspection of their gas turbine generator during April, the plant discovered significant internal component degradation and wear. The gas turbine was subsequently declared out of service. Details are contained in NRC Inspection Reports No. 50-266/92009; 50-301/92009. As a result, a four month major

overhaul was started mid-May. In addition to its use as a load peaker, this 20 megawatt generator serves as the alternate AC source under the station blackout rule and is the backup source of power for the alternate shutdown panel.

When this generator was initially declared inoperable on April 6, the plant instituted compensatory actions consisting of twice per shift fire rounds in the cable spreading room and the vital switch gear room. Following discussions with the NRC, a continuous fire watch was established in the vital switch gear room on June 3, pending installation and testing of a temporary diesel generator power supply for the alternate shutdown panel. A commitment continues to exist to establish 95 percent reliability on the gas turbine generator by October 1992 to comply with the station blackout rule.

A trailer mounted diesel generator was obtained and brought onsite. On May 22, this temporary diesel generator, designated G-10, was tested using a dummy load for two hours at 1600 kilowatt. G-10 is sized to carry all alternate shutdown loads. This generator became operational June 15, after all cable connections were installed. It was declared in service on June 19 following completion of operator training on Operations Special Order 92-04, "Operation of the Temporary Diesel Generator (G-10) for Alternate Shutdown". The continuous fire watch in the vital switch gear room was secured at this time. Several Abnormal Operating Procedures were also changed to direct use of this temporary generator where use of the gas turbine generator would otherwise have been called for.

e. Seismic Mounting Inspection (71707)

The plant recently commenced a self initiated walkdown of safety related equipment seismic mounting as part of an industry wide initiative by the Seismic Qualification User's Group (SQUG). The purpose of this inspection is to verify the adequacy of various safety related systems' mountings to withstand a safe shutdown earthquake. A number of minor deficiencies have been identified in the preliminary stages of these walkdowns and corrective actions for them were initiated. The inspector will continue to follow the plant's progress in this area.

All other activities were conducted in a satisfactory manner during this inspection period.

9. Safety Assessment/Quality Verification (40500) (90712) (92700)

Wisconsin Electric's quality assurance programs were inspected to assess the implementation and effectiveness of programs associated with management control, verification, and oversight activities. Special consideration was given to issues which may be indicative of overall management involvement in quality matters such as self improvement

programs, response to regulatory and industry initiatives, the frequency of management plant tours and control room observations, and management personnel's attendance at technical and planning/scheduling meetings.

a. Licensee Event Report (LER) Review (90712)

The inspectors reviewed LERs submitted to the NRC to verify that the details were clearly reported, including accuracy of the description and corrective action taken. The inspector determined whether further information was required, whether generic implications were indicated, and whether the event warranted onsite follow up. The following LERs were reviewed and closed:

• 266/92-002 Missed Visual Examination of Reactor Vessel Interior

This report describes the plant's failure to perform a visual examination (VT-3) on the accessible portions of the Unit 1 reactor vessel interior within its required periodicity. The accessible portion only includes a 10 inch (25 cm) band around the top of the reactor vessel circumference. The missed visual examination was discovered when plant personnel conducted a review of their Inservice Inspection (ISI) Long Term Plan and associated records for examinations performed during the second 10 year interval.

The plant's investigation determined that their examination schedule for the second 10 year interval of the ISI Long Term Plan, was based on the assumption that all requests submitted for relief from certain ASME Section XI Code requirements would be approved. Two years later, the request for relief from performing the VT-3 examination was denied. However, the ISI Long Term Plan was never updated to reflect this denial.

The plant's corrective actions included: justifying the continued operation of Unit 1 for the period between the end of the second ten year interval and the 1992 Unit 1 refueling outage; satisfactorily performing the VT-3 examination during the 1992 Unit 1 refueling outage in conjunction with the examination required for the first 40 month period of the third 10 year interval; and ensuring that the VT-3 examination was performed on Unit 2 as required. The plant also reviewed their ISI Long Term Plan for the third 10 year interval for both units to ensure that all visual examination requirements would be met. The plant has since completed all reviews and no discrepancies were identified. No further concerns were noted.

*266/90-011 Low NPSH to Containment Spray Pumps with ECCS in Recirculation Mode

On August 29, 1990, an engineering evaluation performed by Wisconsin Electric determined that, under certain conditions, the

residual heat removal pumps cannot provide adequate net positive suction head (NPSH) to the containment spray pumps when the emergency core cooling system (ECCS) is in the recirculation mode. This event is discussed in detail in NRC Inspection Report Nos. 50-266/90016; 50-301/90016. A further evaluation performed by the company determined that the containment spray pumps are not needed for accident mitigation in the recirculation mode, and therefore may be secured when the plant is in this mode of operation.

The plant has updated their FSAR to reflect this evaluation and the new conditions of operation for the containment spray pumps. Emergency Operating Procedures (EOPs) were also revised to direct that containment spray pumps be secured prior to entering the containment sump recirculation mode of operation and that these pumps not be used in this mode unless certain containment pressure criteria are met. The inspector reviewed these procedure changes and discussed this issue with plant management. The company's technical analysis of this event has been reviewed by the NRC's Office of Nuclear Reactor Regulations and no further concerns were identified.

b. LER Follow Up (92700)

The LERs denoted by asterisk above were selected for additional follow up. The inspectors verified that appropriate corrective action was taken or responsibility was assigned and that continued operation of the facility was conducted in accordance with Technical Specifications and did not constitute an unreviewed safety question as defined in 10 CFR 50.59. Report accuracy, compliance with current reporting requirements and applicability to other site systems and components were also reviewed.

c. Manager's Supervisory Staff Meeting (40500)

The inspector observed sessions 92-10 and 92-11 of the Manager's Supervisory Staff. Issues discussed included inadequate auxiliary feedwater (AFW) control cable train separation, seismic adequacy of AFW control cabinets and diesel generator control cabinets, upgrade of AFW controllers, and upgrade to quality assurance status of diesel generator fuel oil. A quorum of the safety staff was present at all times. The vice president of the nuclear department was also in attendance at one of the meetings. The inspector felt that safety concerns were adequately addressed by the staff.

10. Temporary Instructions (TI)

a. (Closed) TI 2515/112 Licensee Evaluations of Changes to the Environs Around Licensed Reactor Facilities

Using the TI for guidance, information was obtained on the company's program for obtaining data on and evaluating changes in population distribution, or in industrial, military, or transportation hazards that could arise near the site. The inspectors reviewed the following associated documentation to verify the company's conformance with the TI.

Technical specification 15.7.7.D, Land Use Census, requires an annual review of the milk sampling program and a visual verification of animals grazing in the vicinity of the site to ensure milk sampling locations remain conservative. The results are documented in the semiannual monitoring report. Although this requirement is primarily concerned with the radiological environmental monitoring program, it also provides an informal means for the plant to obtain information on changes in land use.

The company is planning to construct an independent spent fuel storage installation (dry casks) in 1993. A draft environmental impact statement has been prepared for this project. This required a current analysis of the environs around the facility.

Chapter 2 of the FSAR contains population information updated to the 1980 census. No formal program exists to periodically update this chapter and the company has no plans to incorporate 1990 census data. The population of the area declined slightly from 1980 to 1990 and there have been no significant changes in population distribution.

The emergency preparedness group gathers data periodically on population and population distribution for evacuation planning purposes. The last assessment was performed in 1987 and an update is planned for this year. The current assessment will be based on analysis of fly-over maps per requests from Manitowoc County and the State of Wisconsin.

The inspection determined that the company does not have a formal program to periodically review, identify, and evaluate changes in site proximity hazards and demography to determine their effect on the safety of the plant. The company obtains some of this information during performance of the annual land use survey for evaluating the milk sampling program, and population data is occasionally evaluated for emergency preparedness purposes. The inspectors' own assessment of the local environs determined that there have been no noteworthy changes in the area surrounding Point Beach since initial licensing. This TI is closed.

b. (Closed) TI 2515/113 Reliable Decay Heat Removal During Outages

Using the TI for guidance, information was obtained on plant practices for maintaining reliable decay heat removal during outages based on evolutions observed during Unit 1 refueling outage number 19. The following procedures, which affect decay

heat removal under normal and degraded conditions, were also reviewed to verify the company's conformance with the TI:

> OP-4D, "Draining the Reactor Coolant System"; OP-4F, "Reactor Coolant System Reduced Inventory Requirements"; OP-5A, "Reactor Coolant Volume Control"; OP-7A, "Placing the Residual Heat Removal System in Operation"; and AOP-9C, "Degraded Residual Heat Removal System Capability".

These procedures ensure that forced circulation decay heat removal is maintained when required. The inspector observed operations requiring the use of these procedures to verify procedural compliance and evaluate their adequacy. Procedure OP-5A contained an ambiguous step (4.5.4) regarding verification of reactor vessel water level. Since the two trains of vessel level instrumentation do not have independent variable legs, a permanent standpipe was installed to provide an additional means of measuring level. The wording in the procedure step that directs verifying vessel level indication against the standpipe does not make it clear that this is always required after each change in level. This item was referred to the plant for correction.

The reactor vessel level indicator has selectable high and low level alarms which are required to be set in accordance with procedure. However, the alarm response book does not contain much guidance on actions to take if the high or low level alarm is received. It refers the operator to procedure AOP-9C, but this abnormal operating procedure does not contain high or low vessel level as an entry condition. This item was referred to the plant for correction.

The inspector noted improperly erected scaffolding inside the containment of the shutdown unit over a safety injection system isolation valve. A review of the plant's scaffold control procedure, PBNP 3.4.16, revealed that controls did not apply inside containment if a unit was in cold shutdown or refueling shutdown. The plant corrected the improper scaffold installation upon being informed of its existence. The applicability statement in the scaffold procedure and the other items identified above will remain an inspection follow-up item pending initiation of corrective action (266/92012-02).

Operations that have the potential for contributing significantly to a loss of capability to remove decay heat were controlled by special procedures. These procedures contained compensatory measures for certain items being out of service and contingency actions for various events that could arise during the evolution. A major rework of the safeguards busses was observed during this outage, during which time various contingency measures were taken. Examples included the affected service water pumps being aligned to their alternate power source and additional administrative controls being imposed on the operation of spent fuel pool

cooling. The nonstandard electrical lineups were analyzed to ensure they could carry sufficient load. The work was scheduled to not coincide with periods of increased vulnerability such as reduced inventory operations.

The plant has adequate bus design to power each required shutdown load from one onsite and one offsite power source even under degraded conditions. While the plant currently only had two emergency diesels, two additional diesels have been procured and are planned for installation. Four station batteries back up the DC electrical supply. One battery can be taken out of service without disrupting power to required loads. Additionally, the plant is currently installing two additional station batteries. One will back up any of the four existing station batteries while the other will provide additional power for non-safety loads.

The inspection determined that Point Beach has adequate instrumentation and administrative controls to ensure reliable decay heat removal capability during plant outages. Additionally, plant management has fostered a discerning safety awareness among plant operators regarding the risks involved with reduced inventory operation. This TI is closed.

11. Outstanding Items (92701)

Inspection Follow-up Items

Inspection follow-up items are matters which have been discussed with Wisconsin Electric management, will be reviewed further by the inspector, and involve some action on the part of the NRC, company or both. An open item disclosed during the inspection is discussed in paragraph 10.b.

Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in paragraphs 3.e and 3.g.

12. Management Meetings (30702) (94702)

Meetings were held between NRR and Wisconsin Electric management on May 7 and 14 to discuss the progress of the company's individual plant examination and the submittal of technical specification upgrades. A meeting was held June 25 to discuss the company's plan of action for complying with the station blackout rule.

A meeting was held between NRC Region III management and plant management on June 8, to discuss items of interest and foster improved communications between Wisconsin Electric and the NRC. Items of discussion included the excessive cooldown event on Unit 1, events

involving loss of the normal boration flow path, management changes at Wisconsin Electric, gas turbine generator overhaul, Event-V check valve testing, motor operated valve motor replacements, main steam isolation valve repairs and other Unit 1 outage activities.

13. Exit Interview (71707)

A verbal summary of preliminary findings was provided to the Wisconsin Electric representatives denoted in Section 1 on June 29, at the conclusion of the inspection. No written inspection material was provided to company personnel during the inspection.

The likely informational content of the inspection report with regard to documents or processes reviewed during the inspection was also discussed. Wisconsin Electric management did not identify any documents or processes that were reported on as proprietary.