

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-266/85010(DRP); 50-301/85010(DRP)

Docket No. 50-266; 50-301

License Nos. DPR-24; DPR-27

Licensee: Wisconsin Electric Company  
231 West Michigan  
Milwaukee, Wisconsin 53203

Facility Name: Point Beach Unit 1 and 2

Inspection At: Two Creeks, Wisconsin

Inspection Conducted: June 6, 1985 - July 31, 1985

Inspectors: R. L. Hague  
R. J. Leemon

Approved By: *[Signature]*  
I. N. Jackiw, Chief  
Reactor Projects Section 2B

8-14-85  
Date

Inspection Summary

Inspection on June 6, 1985 - July 31, 1985 (Report Nos. 50-266/85010(DRP); 50-301/85010 (DRP))

Areas Inspected: Routine, unannounced inspection by resident inspectors of licensee action on previous inspection findings; operational safety; maintenance; surveillance; start-up testing - refueling; plant trips; spent fuel pit activities; licensee event report follow-up; and TMI status update. The inspection involved a total of 348 inspector-hours onsite by two inspectors including 52 inspector-hours on off-shifts.

Results: No violations or deviations were identified.

## DETAILS

### 1. Persons Contacted

\*J. J. Zach, Manager, PBNP  
T. J. Koehler, General Superintendent  
G. J. Maxfield, Superintendent - Operation  
\*J. C. Reisenbuechler, Superintendent - EQR  
W. J. Herrman, Superintendent - Maintenance & Construction  
R. S. Bredvad, Health Physicist  
R. Krukowski, Security Supervisor  
\*F. A. Flentje, Staff Services Supervisor  
\*J. E. Knorr, Regulatory Engineer

The inspector also talked with and interviewed members of the Operation, Maintenance, Health Physics, and Instrument and Control Sections.

\*Denotes personnel attending exit interviews.

### 2. Licensee Action on Previous Inspection Findings

(CLOSED) Open Item (266/85004-03 [DRP]):

Items to be completed prior to Unit 1 startup from refueling. All items were completed.

### 3. Operational Safety Verification and Engineered Safety Features System Walkdown

The inspectors observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the months of June and July, 1985. During these discussions and observations, the inspectors ascertained that the operators were alert, cognizant of plant conditions, attentive to changes in those conditions, and took prompt action when appropriate. The inspectors verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the Unit 1 Containment, the Auxiliary and Turbine Buildings were conducted to observe plant equipment conditions, including potential fire hazards, fluid leaks, and excessive vibrations and to verify that maintenance requests had been initiated for equipment in need of maintenance.

The inspectors, by observation and direct interview, verified that the physical security plant was being implemented in accordance with the station security plan.

The inspectors observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the months of June and July, 1985, the inspectors walked down the accessible portions of the Auxiliary Feedwater, Vital Electrical, Diesel Generating, Component Cooling, and ECC systems to verify operability.

These reviews and observations were conducted to verify that facility operations were in conformance with the requirements established under Technical Specifications, 10 CFR and administrative procedures.

At 7:23 A.M. on June 26, 1985, Unit 1 experienced a turbine runback followed by a reactor trip from 88% power due to low steam generator level coincident with a steam flow - feed flow mismatch. These signals were the result of the loss of the white instrument bus due to a failure in an integrated circuit which caused a blown fuse. Loss of the white instrument bus caused several instrumentation signals to fail to zero. Among those was first stage pressure which is an input to the feedwater control system causing feedwater flow to decrease, and another was steam generator level. The combination of these two caused the indicated reactor protection system action. All systems functioned as designed. The white instrument bus was powered up from its alternate power source, and Unit 1 returned to power operation at 2:35 P.M. on June 26, 1985.

On July 3, 1985, while switching the white instrument bus back to its normal power supply which had been repaired and tested a brief, two second, runback occurred. This runback was caused by a downward spike on power range channel 42. This spike was caused by a design feature of the inverter which limits current and voltage during surges. Reference LER 266/85-003, Reactor Trip After Loss of Instrument Bus Inverter.

During a post implementation review of the new emergency operating procedures, the licensee discovered that a failure of a single power supply in the control circuits for air operated valves SI-897A or SI-897B, Safety Injection Pump Discharge Recirculation Valves, would cause the valves to fail shut and could cause damage to both safety injection pumps through overheating if no other flow path was available. The recirculation valves provide a flow path to the refueling water storage tank (RWST) of 70 gallons per minute per pump and are normally open valves. The safety injection pumps start automatically at a primary system pressure of 1715 psig. However, the discharge pressure of the safety injection pumps is only 1470 psi; therefore, during a small break loss of coolant accident, the safety injection pumps may be required to run for some time before primary system pressure decays to less than the discharge pressure of the pumps. If the recirculation flow path to the RWST was not available during this period, both safety injection pumps could overheat and fail in a matter of a few minutes. Because of the importance of these valves remaining open the operator has three methods of determining valve position; open and shut indication at the valve operator switch, a status light associated with these valves, and an annunciator indicating that the recirculation flow path is not available.

These valves also have an automatic closing feature which functions whenever valves SI-851A or SI-851B, Containment Sump Suction Valves, open off their closed seats. The purpose of this feature is to prevent contaminated reactor coolant from being pumped to the RWST if the accident were to require high head primary coolant recirculation. The licensee determined that if the power supply to the control circuits of either SI-897A or B were lost, the valve would fail shut and all three of

the remote indications would be lost as well. Therefore, the operator would not have positive indication that one or both of the valves were shut. The licensee submitted a Part 21 Report to the Region and has notified Westinghouse of the possible generic implications. The licensee's short term fix was to manually override SI-897A and B open and place red locks and an administrative instruction plaque on the valve operator. The plaque, indicates that SI-897A and B must be shut prior to opening the containment sump valves, was in place on July 26, 1985. Long term corrective actions are being evaluated.

At 6:04 A.M. on July 25, 1985, a sudden pressure trip of the 1X04, 13.8KV/4.16KV, Auxiliary Transformer caused a loss of power to the Unit 1 safeguards busses. The emergency diesel generators started and supplied power to the busses as designed. During the voltage transient a rod bottom bystable tripped and the reactor protection system initiated a runback to 80% power based on the apparent dropped rod.

The sudden pressure trip is designed to protect the transformer in the event of insulation breakdown which is evidenced by a build up of carbon dioxide gas inside the transformer. The licensee entered their emergency plan and declared an unusual event at 6:25 A.M. based on loss of off-site power for greater than 15 minutes. The licensee also commenced a load reduction to hot shutdown as required by Technical Specification 15.3.7.B.1.C.

An investigation of the cause of the transformer trip included drawing a gas sample from the transformer and analyzing for carbon dioxide buildup. This analysis was negative. Further inspection of the transformer revealed that the pressure relief valve had not actuated which would be expected in an actual sudden pressure trip. Inspection of the relay cabinet revealed several loose relay connections and water intrusion into the cabinet. The event took place during an extremely heavy rain. The cabinet was dried-out, the loose connections tightened and sealed, and the sudden pressure trip was reset. The 1X04 transformer was reenergized at 8:45 A.M. July 25, 1985, and the licensee secured from the unusual event at 9:10 A.M.

The licensee reported this event to the NRC as well as local and state governments using their approved emergency plan reporting procedures. The NRC was notified of the unusual event declaration at 6:37 A.M. Although this notification was timely, the individual making the notification could not provide the duty officer with the information he needed to complete his event notification form. The licensee has committed to review the notification procedures and make whatever changes are necessary to ensure that the duty officer gets the required information. The licensee plans to apprise the NRC of these changes in the body of the licensee event report covering this event. This is considered an Open Item (266/85010-01).

#### 4. Monthly Surveillance Observation

The inspector observed technical specifications required surveillance testing on the Reactor Protection and Safeguards Analog Channels and



Nuclear Instrumentation and verified that testing was performed in accordance with adequate procedures, the 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.

The inspector also witnessed or reviewed portions of the following test activities:

- Diesel Generator, 3D Bi-weekly
- Inservice Testing of Turbine Driven Auxiliary Feedwater Pump
- Inservice Testing of Electric Fire Pump

5. Monthly Maintenance Observation

Station maintenance activities on 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.

The following maintenance activities were observed/reviewed:

- Repair Charging Pump 2P2A Discharge Relief Valve
- Overhaul Service Water Pump and Motor - P32A
- Replace Auxiliary Building Crane
- Overhaul Electric Driven Fire Pump - P35A
- Repair Inverter 1DY03

6. Refueling Activities

After the initial investigation of the two stuck control rods (IE Inspection Report 50-266/85004 [DRP]; 50-301/85004 [DRP], paragraph 7), the licensee placed the upper internals package on its stand and did a

complete visual inspection of all of the guide tube internals. The flexure pin and piece of flexureless insert were removed and no other debris was found. All flexureless inserts were removed and inspected. Three were found to have bent tabs. These three and the one from location J-4 with the broken tab were replaced from spares. It is believed that the cause of the damaged flexureless inserts was due to the installation procedure. This procedure was revised and all flexureless inserts were reinstalled with no problems. The control rods from positions F-12 and J-4 were replaced and the control rod drive shaft from position F-12 was replaced due to damage noted during visual inspections.

On June 14, 1985, control rod exercises were performed with no problems encountered. On June 16, 1985, cold rod drops were performed and on June 18, 1985, hot rod drops were performed. Again, no problems were encountered. At 3:05 P.M. on June 18, 1985, Unit 1 went critical, ending the refueling outage.

#### 7. Startup Testing - Refueling

The inspector observed the tests listed below and verified that the Unit 1 refueling outage startup testing was conducted in accordance with technically adequate procedures and that the facility was being operated within license limits.

- WMTP 3.2 Primary Systems Tests - Hot
- WMTP 9.1 Rod Control Mechanism Testing, Rod Drop Testing
- WMTP 9.4 Initial Criticality for a Cycle
- WMTP 4.4 Physics Testing During Boration to All Rods Out.
- WMTP 5.1 Reactor Engineering Tests at 25% Power
- WMTP 3.1 Cold Rod Drop Testing

#### 8. Plant Trips

Following the Unit 1 trip at 7:23 A.M. on June 26, 1985, the inspector ascertained the status of the reactor and safety systems by observation of control room indicators and discussions with licensee personnel concerning plant parameters, emergency system status and reactor coolant chemistry. The inspector verified the establishment of proper communications and reviewed the corrective actions taken by the licensee.

All systems responded as expected, and the plant was returned to operation at 2:35 P.M. on June 26, 1985.

Details of the trip are in Paragraph 3.

#### 9. Spent Fuel Pit Activities

During an audit of spent fuel and their storage locations, the licensee determined that 3 spent fuel assemblies which were removed from Unit 2 in October of 1983 had been placed adjacent to the spent fuel pit wall in February of 1984. Technical Specification 15.5.4.4 requires that except for the two locations adjacent to the designated slot for neutron

absorbing material specimens, all assemblies located adjacent to the spent fuel pit walls must have been subcritical for greater than one year. The licensee will be submitting a licensee event report detailing this event and corrective actions to prevent recurrence.

10. Licensee Event Reports Followup

Through direct observations, discussions with licensee personnel, and review of records, the following event reports were reviewed to determine that reportability requirements were fulfilled, immediate corrective action was accomplished, and corrective action to prevent recurrence had been accomplished in accordance with technical specifications.

266/85-002 Failed Fuel Assembly H9, Position D-12, Cycle 12  
266/85-003 Reactor Trip After Loss of Instrument Bus Inverter  
301/85-001 Nuclear Instrumentation Runback

11. TMI Action Plan Status Update

As of July 1, 1985, with the implementation of the revised emergency operating procedures, the following TMI action items are considered closed for both units:

I.C.1.2.B, Inadequate Core Cooling - Revise Procedures  
I.C.1.3.B, Transients and Accidents - Revise Procedures  
II.B.1.3, Reactor Coolant System Vents - Procedures  
II.K.3.5.B, Auto Trip of Reactor Coolant Pumps - Modify

12. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. One open item was disclosed during the inspection as discussed in Paragraph 3.

13. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) throughout the inspection period and at the conclusion of the inspection period to summarize the scope and findings of the inspection activities. The licensee acknowledged the inspectors' comments. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary.