

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report No. 50-266/81-10; 50-301/81-11

Docket No. 50-266; 50-301

License No. DPR-24; DPR-27

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

Facility Name: Point Beach Nuclear Power Plant, Units 1 and 2

Inspection At: Point Beach Site, Two Creeks, Wisconsin

Inspection Conducted: May 1-29, 1981

Inspectors: *J. E. Konklin*
W. G. Guldemond

6/15/81

J. E. Konklin
R. L. Hagde

6/15/81

Approved By: *J. E. Konklin*
J. E. Konklin, Acting Chief
Reactor Projects Section 2A

6/15/81

Inspection Summary

Inspection on May 1-29, 1981 (Report No. 50-266/81-10; 50-301/81-11)

Areas Inspected: Routine resident inspection of Operational Safety Verification, Monthly Surveillance Observation, Followup on Licensee Event Reports, IE Bulletin and Circular Followup, TMI Action Plan Implementation Review, Plant Trips, Independent Inspection Effort, Followup on Headquarters Requests, TMI Action Plan Items Followup, Startup Testing-Refueling, Refueling Maintenance. The inspection involved a total of 248 inspector-hours onsite by two inspectors including 44 inspector-hours onsite during off-shifts.

Results: The licensee was found to be in compliance with NRC requirements within the 11 areas examined during this inspection except for the following two items: 1. Reporting failure to make a required ENS notification; 2. Training - failure to conduct operator training as specified in an order for modification of license.

DETAILS

1. Persons Contacted

- *G. A. Reed, Manager, Nuclear Power Division
- *J. J. Zach, Superintendent Technical Services
 - T. J. Koehler, Operations Superintendent
 - J. C. Reisenbuechler, I&C Engineer
 - W. J. Herrman, Maintenance Superintendent
 - R. S. Bredvad, Health Physicist
- *R. E. Link, Assistant to the Manager
- *F. A. Zeman, Office Supervisor

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

*Denotes personnel attending exit interviews.

2. Operational Safety Verification

The inspector observed control room operations, reviewed applicable logs and conducted discussions with control room operators during the month of May, 1981. The inspector verified the operability of selected emergency systems, reviewed tagout records and verified proper return to service of affected components. Tours of the Unit 1 and 2 reactor buildings, the auxiliary building, 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 inspector by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan.

The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls. During the month of May, 1981, the inspector walked down the accessible portions of the safety injection, containment spray, emergency diesel generating, and auxiliary feedwater systems to verify operability. The inspector also witnessed portions of the radioactive waste system controls associated with radwaste shipments and barreling.

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.

No items of noncompliance or deviations were identified.

3. Review of Plant Operations

During the Unit 2 refueling outage the inspector reviewed administrative control procedures and checklists for returning systems to operating

status and startup procedures for technical adequacy and conformance to technical specification requirements. During this review it was noted that there exists no explicit requirement to review the Jumper and Bypass Log prior to startup to verify that startup restoration has been completed. This was pointed out to the licensee who agreed to investigate the matter.

Prior to Unit 2 startup, the inspector verified the operability of the emergency core cooling systems, nuclear instrumentation/incore monitoring system, and the control rod drive system. No discrepancies were identified.

The inspector monitored the initial critical approach following the Unit 2 refueling. It was verified that all applicable procedures were adhered to.

No items of noncompliance or deviations were identified.

4. Monthly Surveillance Observation

The inspector observed the required surveillance testing on the Unit 2 power range instruments and the 3D diesel generator, 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 to technical specification 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 portions of the Unit 1 power range checks.

No items of noncompliance or deviations were identified.

5. Licensee Event Reports Follow-up

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.

50-301 81-002/01T-0 Degraded Steam Generator Tubes - Unit 2

No items of noncompliance or deviations were identified.

6. IE Bulletin Followup

For the IE Bulletins listed below the inspector verified that the written response was within the time period stated in the bulletin, that the written response included the information required to be reported, that the written response included adequate corrective action commitments based on information presented in the bulletin and the licensee's response, that licensee management forwarded copies of the written response to the appropriate onsite management representatives, that information discussed in the licensee's written response was accurate, and that corrective action taken by the licensee was as described in the written response.

81-02 Failure of Gate Type Valves to Close Against Differential Pressure.

81-03 Flow Blockage of Cooling Water Systems by Clams and Mussels.

No items of noncompliance or deviations were observed.

7. IE Circular Followup

For the IE Circulars listed below, the inspector verified that the Circular was received by the licensee management, that a review for applicability was performed, and that if the circular were applicable to the facility, appropriate corrective actions were taken or were scheduled to be taken.

81-03 Inoperable Seismic Monitoring Instrumentation

81-06 Potential Deficiency Affecting Certain Foxboro 10-50 Milliampere Transmitters.

8. Plant Trips

Following the Unit 2 reactor trip at 0029 hours on May 21, 1981, the inspector ascertained the status of the reactor and safety systems by discussions with licensee personnel concerning plant parameters, emergency system status and reactor coolant chemistry. The inspector reviewed the corrective actions taken by the licensee.

All systems responded as expected, and the plant was returned to criticality at 1:08 a.m. May 21, 1981, in order to continue zero power physics testing. At the time of the trip reactor engineering was performing Procedure WTP2-4.3, "Rod Swap Test." The reactor coolant temperature was being maintained at 540 F by use of the atmospheric steam dump on "A" steam generator. Steam generator level was being maintained by intermittent feeding using the auxiliary feed system. The reactor trip was initiated by a low-low level in the "A" steam generator.

The licensee failed to make an ENS notification of the event as required by 10 CFR 50.72. This is an item of noncompliance.

9. TMI Action Plan Items Followup

In Inspection Reports 50-266/81-05 and 50-301/81-04 it was erroneously reported that the licensee had committed to install a containment isolation valve on the auxiliary charging line in response to Item II.E.4.2. The licensee has, in fact, committed to install a containment isolation valve on the letdown line per a December 23, 1980 letter from C. W. Fay (WE) to H. R. Denton (NRC).

10. TMI Action Plan Post-Implementation Review

Three specific TMI Action Plan items for pressurized water reactors have been identified for which the Office of Inspection and Enforcement (IE) has responsibility for review and evaluation of licensee proposed programs. These Action Plan items include I.A.1.3(1) Shift Manning (Limit Overtime), I.C.5 Feedback of Operating Experience, and I.C.6 Correct Performance of Operating Activities. IE has also been assigned the responsibility for preparing Safety Evaluation Reports for the identified Action Plan Items.

The inspectors reviewed the licensee's programs for implementing the referenced Task Action Plan items. The following paragraphs present the results of the reviews as an input to the required Safety Evaluation Reports.

1.A.1.3(1) SHIFT MANNING (LIMIT OVERTIME)

Position

Nureg-0737 clarification item I.A.1.3(1), IE Circular 80-02, and a letter from D. G. Eisenhut to all power reactor licensees dated July 31, 1980 establish overtime restrictions for members of the plant staff who perform safety related functions. The restrictions to be applied during periods other than extended shutdown for refueling, major maintenance, or major modifications are as follows:

- (1) An individual should not be permitted to work more than 12 hours straight (not including shift turnover time).
- (2) There should be a break of at least 12 hours (which can include shift turnover time) between all work periods.
- (3) An individual should not be required to work more than 14 consecutive days without having two consecutive days off.
- (4) An individual should not work more than 72 hours in any 7-day period.

- (5) Deviations may be authorized by the plant manager or his deputy, or higher levels of management in accordance with approved procedures and with appropriate documentation of the cause.
- (6) If a reactor operator or senior reactor operator has been working away from the control board for more than 12 hours, he shall not be assigned shift duty in the control room without at least a 12-hour break preceding such an assignment.
- (7) If a reactor operator is required to work in excess of eight continuous hours, he shall be periodically relieved of primary duties at the control board, such that periods of duty at the board do not exceed about four hours at a time.

Discussion and Conclusion

The licensee has implemented the above guidance in Section 4.3.3 of the Operating Point Beach Nuclear Plant Administrative Control Policies and Procedures Manual. This section reads, "To comply with NRC overtime requirements, the scheduling of personnel will be modified as necessary to ensure the following.

- 3.3.1 An individual should not be permitted to work more than 12 hours straight (not including shift turnover time).
- 3.3.2 There should be at least a 12-hour break between all work periods (shift turnover time is included in this 12-hour break).
- 3.3.3 An individual should not work more than 72 hours in any seven day period.
- 3.3.4 An individual should not work more than 14 consecutive days without having two consecutive days off.

If circumstances arise requiring deviation from the above restrictions, such deviation may be authorized by the Manager-Nuclear Operations Section or higher authority in accordance with appropriate procedures and documentation of the cause."

The licensee's procedures quoted above adequately cover the first six restrictions contained in the NRC position. The seventh item concerning no more than four hours at the control board at a time has not been implemented at Point Beach due to insufficient licensed reactor operators. However, the Operating Supervisor is available and does provide periodic short-term relief of control operators. Based on the published procedures and tempered by the present manning situation, the licensee is considered to have satisfied the requirements of this action item.

I.C.5 PROCEDURES FOR FEEDBACK OF OPERATING EXPERIENCE TO PLANT STAFF

Position

In accordance with Task Action Plan I.C.5, Procedures for Feedback of Operating Experience to Plant Staff (NUREG-0660), each applicant for an operating license shall prepare procedures to assure that operating information pertinent to plant safety originating both within and outside the utility organization is continually supplied to operators and other personnel and is incorporated into training and retraining programs. NUREG-0737 expands the applicability of this requirement to operating reactors. These procedures shall:

- (1) Clearly identify organizational responsibilities for review of operating experience, the feedback of pertinent information to operators and other personnel, and the incorporation of such information into training and retraining programs;
- (2) Identify the administrative and technical review steps necessary in translating recommendations by the operating experience assessment group into plant actions (e.g., changes to procedures; operating orders);
- (3) Identify the recipients of various categories of information from operating experience (i.e., supervisory personnel, shift technical advisors, operators, maintenance personnel, health physics technicians) or otherwise provide means through which such information can be readily related to the job functions of the recipients;
- (4) Provide means to assure that affected personnel become aware of and understand information of sufficient importance that should not wait for emphasis through routine training and retraining programs;
- (5) Assure that plant personnel do not routinely receive extraneous and unimportant information on operating experience in such volume that it would obscure priority information or otherwise detract from overall job performance and proficiency.
- (6) Provide suitable checks to assure that conflicting or contradictory information is not conveyed to operators and other personnel until resolution is reached; and,
- (7) Provide periodic internal audit to assure that the feedback program functions effectively at all levels.

Discussion and Conclusion

The licensee has implemented feedback procedures in Section 3.15.7 of the Operating Point Beach Nuclear Plant Administrative Control Policies and Procedures Manual. These procedures satisfy the requirements of clarification item I.C.5.

I.C.6 GUIDANCE ON PROCEDURES FOR VERIFYING CORRECT PERFORMANCE OF OPERATING ACTIVITIES

Position

It is required (from NUREG-0660) that licensees' procedures be reviewed and revised, as necessary, to assure that an effective system of verifying the correct performance of operating activities is provided as a means of reducing human errors and improving the quality of normal operations. This will reduce the frequency of occurrence of situations that could result in or contribute to accidents. Such a verification system may include automatic system status monitoring, human verification of operations and maintenance activities independent of the people performing the activity (see NUREG-0585, Recommendation 5), or both.

NUREG-0737 provides additional clarification of the above requirements by referencing draft Regulatory Guide 1.33 which, in turn, endorses ANS 3.2 with the following provisions:

- (1) Applicability of the guidance of section 5.2.6 should be extended to cover surveillance testing in addition to maintenance.
- (2) In lieu of any designated senior reactor operator (SRO), the authority to release systems and equipment for maintenance or surveillance testing or return-to-service may be delegated to an on-shift SRO, provided provisions are made to ensure that the Shift Supervisor is kept fully informed of system status.
- (3) Except in cases of significant radiation exposure, a second qualified person should verify correct implementation of equipment control measures such as tagging of equipment.
- (4) Equipment control procedures should include assurance that control room operators are informed of changes in equipment status and the effects of such changes.
- (5) For the return-to-service of equipment important to safety, a second qualified operator should verify proper system alignment unless functional testing can be performed without compromising plant safety, and can prove that all equipment, valves, and switches involved in the activity are correctly aligned.

NOTE: A licensed operator possessing knowledge of the systems involved and the relationship of the systems to plant safety would be a "qualified" person. The staff is investigating the level of qualification necessary for other operators to perform these functions.

Discussion and Conclusion

Section 4.13 of the Operating Point Beach Nuclear Plant Administrative Control Policies and Procedures Manual is the licensee's procedure for verifying correct performance of operating activities. This procedure is to be used whenever equipment is to be removed from service. It states the shift supervisor, "is the only person who can authorize a change in the status of plant equipment on his assigned shift." As either the shift supervisor or operating supervisor must evaluate a request to remove equipment from service, the control operators are necessarily appraised of changes in plant status. The procedure explicitly states that a second check of system/equipment lineup is required whenever equipment is removed from service. On return to service, the shift supervisor is required to have tags removed and equipment lineup returned to normal by a qualified person. Additionally, the shift supervisor is to have all valves and controls associated with the equipment checked to ensure that all components are in their normal position. Finally, the procedure requires that, "Red tags may only be installed or removed by plant personnel who have been qualified to do so by the Superintendent-Operations."

Based on the above, the licensee's procedure is deemed to satisfy the requirements for verifying correct performance of operating activities.

11. Independent Inspection Effort

- a. In response to a 1980 letter from the NRC to all licensees concerning potential weld deficiencies in tanks supplied by the Graver Tank Company, the licensee committed to perform ultrasonic inspections of welds in Unit 1 and Unit 2 refueling water storage tanks (RWST). These inspections were to be performed during the next refueling outage scheduled for each unit. The Unit 1 RWST was inspected during the May 1981 refueling outage. The inspections verified that all welds were full penetration welds as required, as opposed to fillet welds. The inspector reviewed the procedures, personnel certifications, and inspection data for the Unit 2 RWST.

No items of noncompliance or deviations were identified.

- b. On April 20, 1981, the NRC issued to the licensee an order for modification of license concerning primary coolant system pressure isolation valves. The order and enclosed technical specifications established testing and acceptance criteria for first and second off primary system check valves whose failure could result in an inter-system loss-of-coolant accident outside containment. The order required that if the integrity of each of the so-called Event V check valves had not been demonstrated within the past 12 months, upstream MOV's were to be shut and tagged if a safety evaluation could support this action and otherwise, cold shutdown would be required.

At the time of receipt of the order, Unit 1 was operating normally, and Unit 2 was in cold shutdown for refueling. Based on a review of testing history it was determined that only two of the affected 12 check valves in Unit 1 and none of the affected check valves in Unit 2 had been tested. The licensee determined that a safety evaluation would support closure of upstream isolation valves in all but two cases. The two cases were the crossover lines from the high head safety injection system cold leg injection lines to the core deluge injection lines. These crossover lines each contained a manual valve inside containment at the interface between high and low pressure piping. Cold shutdown and check valve testing were indicated for Unit 1.

In order to eliminate the need for a cold shutdown of Unit 1, the licensee proposed an alternate testing program as an interim measure for continued operation until the scheduled time June, 1981 steam generator inspection outage. The test would demonstrate that the aggregate leakage of the second off check valves from the cold leg injection lines was less than required by the Technical Specification acceptance criteria. This was to be done utilizing the cold leg accumulators as a pressure source and determining leakage rates by recording accumulator levels hourly for eight hours. Satisfactory completion of the test combined with the test results from the two check valves previously tested and the safety evaluations performed would allow continued operation.

On May 7, 1981, the inspector presented the licensee's proposal to the Licensing Project Manager in the Office of Nuclear Reactor Regulation and the Region III Projects Section Chief responsible for Point Beach. It was determined that the proposal would satisfy the intent of the order to verify valve integrity and was acceptable to support continued operation of Unit 1 until the June 1981 steam generator inspection outage.

On May 21, 1981, the inspector reviewed the licensee's actions in response to the order. The results of the Unit 1 test were reviewed and determined to be acceptable. The procedure for testing individual check valves for Unit 2 was reviewed and determined to be acceptable. The data from the tests performed on the Unit 2 check valves was reviewed and determined to be acceptable. The inspector verified that the MOV's required by the order to be tagged shut for Unit 1 were in fact tagged, and that supporting safety evaluations had been performed.

Section III, Paragraph 2, of the order requires in part, that "Prior to closing the MOV, procedures shall be implemented and operators trained to assure that the MOV remains closed." In order to satisfy this requirement the licensee issued a special order requiring that the affected valves not be opened during operation. The special order was put into routing on May 19, 1981. On May 21, 1981, the date after

the NRC order was to have been fully implemented, the inspector reviewed the licensee's special order and determined that the control operators were not on routing for the order and that two of four crews that had been on shift with the MOV's tagged shut had not initialed the order to indicate review. This is an item of noncompliance (50-266/81-10-01).

- c. The inspector investigated SI accumulator level transmitter problems identified during recovery of Unit 2 from its refueling outage. Each accumulator has two level transmitters. During restoration of level at the end of the outage, one transmitter on each accumulator failed to respond to the level increase. On investigation, i&C discovered that a cover plate on each transmitter was interfering with the internal movements. After resolving this problem, the two transmitters were recalibrated and found to have a slightly nonlinear response. As a result, a comparison of indicated levels for the same accumulator can show a difference of up to 8%.

While there is no Technical Specification requirement for operability or redundancy for these transmitters, there is a requirement that the accumulators each contain between 1100 and 1136 cubic feet of water. These volumes correspond to indicated levels of approximately 5% and 44% (high and low alarms are set at 40% and 8% respectively). Because of the narrow range nature of the level indication (8% corresponds to approximately five cubic feet of water in the accumulator), the inspectors determined that the level discrepancy was not a serious concern provided that it did not increase. However, because of this possibility, several control operators were questioned concerning their actions if the discrepancy in level indication caused them to approach a limiting condition. All responded by saying that their actions would be dictated by the most limiting indication.

12. Followup on Headquarters Requests

On May 26, 1981, Headquarters requested that the inspector verify the locations of ENS telephones associated with Point Beach. This was done with the following results: one telephone in the control room; one telephone in the Technical Support Center; one telephone in the Site Boundary Control Center; three telephones in the NRC Resident Inspector Trailer.

13. Startup Testing - Refueling

The inspectors observed the following tests after reviewing the associated procedures to verify that the tests were conducted in accordance with the procedures.

- a. Rod Drive and Rod Position Indication Checks
- b. Reactor Thermocouple/RTD Cross Calibration

- c. Incore/Excore Calibration
- d. Isothermal Temperature Coefficient
- e. Power Coefficient of Reactivity Measurement
- f. Control Rod Worth Measurement

In all cases the tests were conducted in accordance with the associated procedures. During the rod drive and rod position indication checks two rod position indicators were found to be malfunctioning. Investigation revealed that both circuits had blown fuses. With the fuses replaced, the rod position indicators functioned satisfactorily.

Analysis of the control rod worth measurement data showed that the total rod worth exceeded the design value by 14% based on the reactivity computer. This is in excess of the review criteria value of 10%. Additionally, the data showed that all banks exceeded their design worths by as much as 20%. As required, the onsite safety review committee evaluated the condition before the reactor reached 100% equilibrium xenon. The committee reached the conclusion that the excessive worths were acceptable and attributed the cause of the discrepancy to the reactivity computer. This conclusion was based on the fact that the predicted boron concentration for initial criticality agreed well with the predicted value, the actual endpoint concentration of boron for the reference bank of rods agreed well with the predicted value, and the actual reference bank heights with each of the other banks fully inserted agreed well with the predicted heights.

No items of noncompliance or deviations were identified.

14. Maintenance

The inspectors monitored steam generator leak testing and repair during the Unit 2 refueling outage to verify that the activities were conducted in accordance with approved procedures by qualified personnel, that proper administrative controls were established for isolating and returning the system to service, that housekeeping was adequate, and that certifiable materials were used.

Initial hydrostatic testing revealed only one dripping tube. The leak rate was approximately two drops per minute from an explosively plugged tube. Eddy current testing resulted in the mechanical plugging of 24 tubes in the "A" steam generator and 16 tubes in the "B" steam generator. A 25th pluggable tube from the "A" steam generator was removed for detailed analysis and the hole was weld plugged. Visual inspection of the automatic weld revealed deficiencies which required manual repair welding.

A degraded tube in the B steam generator had an interference which prevented full insertion of the mechanical plug. The tube entrance area was rolled and the mechanical plug successfully inserted.

No items of noncompliance or deviations were identified.

15. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout the month and at the conclusion of the inspection period and summarized the scope and findings of the inspection activities. The licensee acknowledged these findings.