

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

REGION III

Report No. 50-301/79-20

Docket No. 50-301

License No. DPR-27

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

Facility Name: Point Beach Nuclear Power Plant, Unit 2

Inspection At: Point Beach Site, Two Creeks, WI

Inspection Conducted: November 27-30, 1979

Inspector: *E. T. Chow*
E. T. Chow

12/19/79

Approved By: *RFWarnick for*
W. S. Little, Acting Chief
Nuclear Support Section 1

12-20-79

Inspection Summary

Inspection on November 27-30, 1979 (Report No. 50-301/79-20)

Areas Inspected: Routine, unannounced inspection of power distribution limits; core thermal power evaluation; power distribution; reactivity measurement; determination of reactivity anomalies; core/exterior calibration; rod drop time test. The inspection involved 20 inspector-hours onsite by one NRC inspector. Results: Of the areas inspected, no items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

- *G. Reed, Manager-Nuclear Operations
- J. Greenwood, Assistant to Manager
- *J. Zach, Superintendent-Technical Services
- *J. Bauer, Technical Assistant Reactor Engineer
- P. Kurtz, Nuclear Plant Engineer
- N. Pitterle, Nuclear Plant Engineer
- *F. Zeman, Office Supervisor

*Denotes those present during the exit interview.

2. Verification of Conduct of Startup Physics Testing

The inspector reviewed the startup physics testing and verified that the licensee conducted the following:

- a. Rod Drive and Rod Position Indication Checks
- b. Core Power Distribution Limits
- c. Incore/Excore Calibration
- d. Core Thermal Power Evaluation
- e. Determination of Shutdown Margin
- f. Isothermal Temperature Coefficient
- g. Power Coefficient of Reactivity Measurement
- h. Control Rod Worth Measurement
- i. Target Axial Flux Difference Calculation
- j. Determination of Reactivity Anomalies

3. Core Power Distribution Limits

The inspector examined the printouts of the periodic and the on-demand programs for Cycle 6. The inspector determined that all prerequisites were met, the process computer and the off-site computer were using input values from the actual plant conditions, all thermal margins satisfied Technical Specification requirements, and the calculated values by the computers were within the acceptance criteria established by the licensee. The inspector determined that the licensee had satisfied the Technical Specification requirement to determine hot channel factors every effective full power month.

No items of noncompliance or deviations were identified.

4. Core Thermal Power Evaluation

The inspector reviewed information relating to Cycle 6 core thermal power evaluation as described in Procedure REI 1.0, "Power Level Determination," dated September 25, 1979. The inspector noted that

the operators obtained core thermal powers from the process computer P-250 and from converting the readings of ΔT . The inspector noted that an acceptance criterion of 5% was established for the difference between the core thermal power values calculated by the two methods.

The inspector noted that the time-sharing program CAL was used by reactor engineering personnel for core thermal power evaluation. The inspector reviewed the printout of CAL, dated November 26, 1979, and verified all the input parameters for the calculation.

The inspector performed an independent determination of the core thermal power and verified the value determined by the licensee.

5. Power Coefficient of Reactivity Measurement

The inspector reviewed information relating to Cycle 6 determination of power coefficient of reactivity as described in Procedure WMTP9.7, "Power Coefficient Measurement," dated April 21, 1979. The inspector noted that the reactor was near 90% of rated power and equilibrium xenon was established prior to the test.

The licensee's acceptance criterion was that the measured power coefficient should be within $\pm 10\%$ of the predicted value. The inspector noted that the measured power coefficient was -11.1 pcm/% of power and the predicted power coefficient was -11.5 pcm/% of power. The licensee's measurements showed that the acceptance criterion was met.

No items of noncompliance or deviations were identified.

6. Reactivity Anomaly Determination

The inspector reviewed information relating to Cycle 6 determination of reactivity anomaly. The Technical Specifications require that the reactivity anomaly be less than 1% of reactivity.

The inspector noted that the computer code (FOLLOW) was used to infer the measured boron concentration to critical boron concentration at ARO (all rods out) and equilibrium xenon condition, and the inferred boron concentration values were compared with the Westinghouse predicted values. The inspector noted that the Westinghouse critical boron concentration values were slightly higher, and the differences between the Westinghouse and the inferred values were within 1% of reactivity.

The inspector concluded that the determination of reactivity anomaly satisfied Technical Specification requirements.

No items of noncompliance or deviations were identified.

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7. Incore/Excore Calibraton

The inspector reviewed information relating to incore/excore monitor calibration as described in Procedure WMTP 9.2, "Power Range Calibration Quarterly Axial Offset Test," dated November 15, 1979. The inspector reviewed the graphs of incore axial offset versus excore axial offsets for the four power range channels and noted that the calibration currents were properly obtained for the upper and the lower excore detectors. The inspector determined that the licensee had satisfied the Technical Specification requirement to calibrate the nuclear power range channels quarterly.

No items of noncompliance or deviations were identified.

8. Rod Drop Time Test

The inspector reviewed information relating to Cycle 6 determination of rod drop time test. The inspector noted that the Technical Specifications required that the rod drop time be no greater than 1.8 seconds from the loss of stationary gripper coil voltage to the dashpot entry.

The inspector noted that the average rod drop time in cold full flow condition was 1.29 seconds and the average rod drop time in hot full flow condition was 1.32 seconds. The licensee stated that he could not explain the speeding up of the rod drop time in cold full flow condition and would consult with Westinghouse technical personnel in the coming meeting.

No items of noncompliance or deviations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on November 30, 1979. The inspector summarized the purpose and the scope of the inspection and the findings.