

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-155/89018(DRP)

Docket No. 50-155

License No. DPR-6

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, MI 49201

Facility Name: Big Rock Point Nuclear Plant

Inspection At: Charlevoix, Michigan

Inspection Conducted: October 18 through November 28, 1989

Inspectors: E. A. Plettner
N. R. Williamsen

Approved By: *RW DeFayette*
R. W. DeFayette, Chief
Reactor Projects Section 2B

12/8/89
Date

Inspection Summary

Inspection on October 18 through November 28, 1989 (Report No 50-155/89018(DRP))

Areas Inspected: The inspection was routine, unannounced, and conducted by the senior resident inspector and the resident inspector. The functional areas inspected consisted of the following: management meetings; evaluation of licensee self-assessment capability; surveillance activities; maintenance activities on various components; operational safety verification which included, the containment isolation system; cold weather preparations; and the emergency preparedness program.

Results: The licensee has responded in a timely manner to NRC issues and concerns. The licensee continues to improve in the area of self-assessment. One area of particular note was the recent change from the semi-annual meetings of the former Nuclear Safety Board to the continuous review of plant activities by the new Nuclear Safety Services Department. The surveillance, maintenance, and operational safety programs continue to improve as more procedures are upgraded and new procedures written. The cold weather preparations and emergency preparedness programs appeared to be performed in a manner to ensure public health and safety.

Problems were identified with packing material No. 938 manufactured by Garlock. No significant safety items were identified in this report.

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DETAILS

1. Persons Contacted

D. Hoffman, Vice-President Nuclear Operations Department
*T. Elward, Plant Manager
*R. Abel, Production and Performance Superintendent
*H. Hoffman, Maintenance Superintendent
*W. Trubilowicz, Operations Supervisor
*G. Withrow, Plant Engineering Superintendent
R. Alexander, Technical Engineer
*E. Zienert, Director Human Resources
*P. Donnelly, Nuclear Assurance Administrator
*D. LaCroix, Nuclear Training Administrator
*R. Krchmar, Acting Quality Assurance Superintendent
*R. Burdette, Acting Chemistry/Health Physics Superintendent
W. Beckius, Executive Engineer
R. English, Corporate Health Physicist
J. Rang, Director Nuclear Services Support
B. Marathe, Project Engineering Manager
J. Freneau, Director Nuclear Safety
D. Hughes, Director Quality Assurance
J. Eddy, Plant Licensing Engineer, Big Rock Point
**D. Fugele, Nuclear Emergency Planner
**M. Hobe, Emergency Planning Coordinator
**E. Muma, Charlevoix County Emergency Services Director
**L. Schomberger, Emmet County Emergency Services Director
**R. May, Radiological Defense Officer, Charlevoix County
**D. Sibo, Planning Specialist, Michigan State Police

Nuclear Regulatory Commission (NRC)

R. Pulsifer, Project Manager, NRR
I. Jackiw, Section Chief, Division of Reactor Projects, Branch 2B

The inspectors also contacted other licensee personnel in the Operations, Maintenance, Engineering, Radiation Protection, and Technical Departments.

*Denotes those present at the exit interview on November 27, 1989.

**Denotes those present at the annual State/County Emergency Preparedness Review Meeting, October 24, 1989.

2. Management (30703)

The senior resident inspector and the project manager met with D. Hoffman, Vice-president Nuclear Operations, on October 20 to discuss plant issues, in particular the simulator facility plan. On November 7 the senior resident inspector met with D. Hoffman to discuss Technical Specification

changes and the effect of the recently planned early retirement program, announced by CMS Energy Chairman William McCormick on November 3 on the Big Rock Point plant operations. The discussions were positive with commitments to complete the simulator facility plan and the Technical Specification changes. The effect that the early retirement program may have on the Big Rock Point plant will be provided after December 6 when employee responses have been submitted to the company.

The Institute for Nuclear Power Operations (INPO) completed a two week evaluation of the licensee on November 17.

3. Evaluation of Licensee Self-Assessment Capability (40500)

The objective of this inspection was to evaluate the effectiveness of the licensee's self-assessment programs. The inspection focused on determining whether the licensee's self-assessment programs contributed to the prevention of problems by monitoring and evaluating plant performance, providing assessments and findings, and communicating and following up on corrective action recommendations.

The Big Rock Point Plant has five groups that focus on the licensee's self-assessment programs. Two of these groups are required by Technical Specifications (TS), the Plant Review Committee and the Nuclear Safety Services Department. The three other plant review groups are: the Operating Experience Review Group, the Corrective Action Review Board, and the Technical Review Committee.

a. Plant Review Committee (PRC)

The inspector reviewed the TS requirements for the Plant Review Committee (PRC) which included its composition, alternate members, meeting frequency, and quorum requirements. The review revealed that the PRC was fulfilling all of its responsibilities. Special PRC meetings were held when required by plant conditions. The senior resident inspector attended the PRC meeting held on November 15. The licensee has a formal system for ensuring that all persons participating in the PRC meet the qualifications of the American National Standards Institute criteria for participation. There were no changes in committee membership since the previous inspection conducted in November and December of 1988. Discussions during the meeting were adequate to address the concerns of the members present.

The review packages distributed prior to monthly PRC meetings were found to be well assembled, with sufficient background material for review of the issues prior to the meeting. The cover sheet listed items not completed during previous meetings and new items for discussion. A detailed review of the PRC meeting minutes indicates that the licensee had been adequate in initiating investigations and ensuring follow-up of corrective actions for previously identified

violations, reportable events, and areas of weakness. The licensee's tracking system was used to track open items, and plant personnel reviewed the list periodically to ensure that open items were closed on schedule.

b. Nuclear Safety Services Department (NSSD)

The NSSD formally met for the first time on October 20 with the NRC project manager and senior resident inspector in attendance. The NSSD replaced the Nuclear Safety Board (NSB) when Technical Specification Amendment No. 100 was approved by the NRC on August 16, 1989. This change was made to increase the total resources committed to reviewing safety concerns and to complete the reviews in a more expeditious manner. Incomplete items from the NSB were carried over to the NSSD and assigned to the appropriate individuals for action. The items were typed into a new tracking system similar to the tracking system used by the NSB. The NSSD appeared to be effective in performing independent reviews of plant activities, which included; maintenance, modifications, operational problems, and operational analyses.

c. Operating Experience Review Group

The Operating Experience Review Group provided timely and adequate reviews to the PRC for discussion and disposition during monthly meetings. The topics reviewed included the following: NRC Notices, Bulletins, Generic Letters, 10 CFR Part 21 Notifications, Service Information Letters, and Service Event Reports.

d. Corrective Action Review Board (CARB)

The senior resident inspector attended two CARB meetings during this inspection period and reviewed completed reports to evaluate program effectiveness on issues identified by the licensee's Corrective Action (tracking) System. The CARB was usually made up of individuals having multi-disciplinary training or skills. The licensee implemented a temporary root cause analysis program in 1988 for use during CARB meetings to assist the individuals in the evaluation process. The program has not been formally approved by the PRC, resulting in some poor root cause analyses and corrective/predictive actions. The licensee has committed to implement an approved program by April 1990.

e. Technical Review Committee

The review of Technical Review Committee will be completed during the next resident inspection report period and documented in the next report.

4. Monthly Surveillance Observation (61726)

Station surveillance activities listed below were observed to verify that the activities were conducted in accordance with the Technical Specifications and surveillance procedures. The applicable procedures were reviewed for adequacy, test and process instrumentation was verified to be in their current cycle of calibration, personnel performing the tests appeared to be qualified, and test data was reviewed for accuracy and completeness. The NRC inspectors ascertained that any deficiencies identified were reviewed and resolved. The NRC inspectors observed the licensee's performance of the following surveillance tests on the indicated dates:

October 24: IPR0-14, "Main Gate Microwave Test," Revision 2, May 26, 1988.

October 26: T1-02, "Primary System Leakage Test," Revision 16, May 16, 1988.

November 1: T30-26, "Electric and Diesel Fire Pump L2 Module Test," Revision 17, February 2, 1989, with Procedure Change Form dated November 1, 1989.

November 9: T7-28, "Emergency Diesel Generator Auto Test Start," Revision 8, October 24, 1988. Vibration readings were taken during the surveillance to trend machine performance.

November 12: T7-03, "Control Rod Coupling Integrity Test at Power," Revision 16, October 20, 1989.

November 13: T7-21, "Standby Diesel Generator Start and Run Test," Revision 16, March 13, 1988, with Procedure Change Form dated September 15, 1989.

November 13: T7-20, "Diesel Fire Pump Auto Start," Revision 20, October 4, 1988.

November 16: T15-01/CIP-26, "Semi-Monthly Source Check of Radwaste to Canal Process Monitor," Revision 1, September 7, 1989.

November 16: T30-50/CIP-25, "Monthly Source Check of Circulating Water Discharge Process Monitor," Revision 2, September 6, 1989.

November 16: T30-49/CIP-24, "Monthly Source and Response Check of Off Gas Monitors," Revision 2, November 15, 1989.

November 21: T7-25, "Emergency Diesel Battery Voltage and Electrolyte Level Inspection," Revision 4, December 23, 1987.

November 22: T30-29, "Reactor Depressurization System Cabinet Test (Sensor Cabinet B/Actuation Cabinet 2)," Revision 25, August 29, 1989.

November 28: T7-04, "Weekly Reactor Protection Logic System Test,"
Revision 11, September 19, 1989.

November 28: T7-18, "Bypass Valve Test," Revision 11, October 3, 1989,
with a procedure change form dated October 24, 1989.

No violations or deviations were identified in this area.

5. Monthly Maintenance Observation (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 certified; and radiological and fire prevention controls were implemented. Work requests were reviewed to determine status of outstanding jobs and to assure that priority was assigned to safety related equipment maintenance which may affect system performance.

As discussed in Paragraph No. 6, "Operational Safety Verification," the licensee determined that the main turbine bypass valve was determined inoperable on October 27. The licensee initiated an orderly shutdown of the reactor the same day to facilitate repairs. The root cause was binding of the valve stem from a new packing material identified as Garlock No. 938. The material had been installed during the 1989 refueling maintenance outage to improve valve stem sealing. The licensee investigated other uses of Garlock No. 938 in the plant and found five other valves, three with motor actuators and two manual valves, containing the same packing material. The motor actuated valves were tested, with one of the valves failing the test. The licensee took prudent actions to replace the packing, Garlock No. 938, in all the motor actuated valves with original type packing material. Repairs and post-maintenance testing were successfully completed and the reactor was returned to operation on November 3. The two manual valves were scheduled for repacking during the 1990 refueling/maintenance outage. Representatives from Garlock were on-site and stated that the licensee's use of No. 938 packing material was appropriate and consistent with Garlock specifications. The Garlock Company is continuing its investigation of the problem. The licensee submitted a report on Garlock No. 938 to the Institute for Nuclear Power Operations (INPO) for distribution to other nuclear utilities. The licensee is reviewing the information for a possible report in accordance with 10 CFR Part 21, "Reporting of Defects and Noncompliance."

The NRC inspectors observed the licensee's performance of the following maintenance work orders on the indicated dates:

October 21-24: No. 89-TGS-0188, -0189 and -0197 for repairing specific small steam leaks on the main turbine including: a horizontal joint on the high pressure turbine casing, a sample-line pipe, and an expansion joint on the moisture separator.

October 28: No. 89-TGS-0212, dated October 28, 1989, to replace a leaking pipe union on a small turbine drain line.

October 28 to November 3: No. 89-MSS-0053, dated October 27, 1989, for removing the Garlock No. 938 packing/spacer in the main turbine bypass valve, and repacking with original type material.

November 2, 3: No. 89-PIS-0094, -0095, dated November 1, 1989, for removing the Garlock No. 938 packing/spacer in backup core spray valves MOV-7070 and -7071 and repacking with original type material.

November 13: No. 89-EPS-0283, dated October 12, 1989, for repairing the throttle control of the portable, one cylinder diesel fire pump.

November 15: No. 89-RVG-0027, dated November 13, 1989, for cleaning instrument air nozzles and testing the instrument in conjunction with Procedure IRVG-4, "Cleaning Nozzle on E/P-1A79C (Reactor Core)," Revision 4, October 13, 1988.

November 15: No. 89-PCS-0041, dated November 13, 1989, for cleaning instrument air nozzles and testing the instrument in conjunction with Procedure IPCS-1, "Cleaning Nozzles on E/P-1A79B (No. 2 Reactor Recirc Pump) and E/P-1A79A (No. 1 Reactor Recirc Pump)," Revision 5, December 13, 1988.

November 15: No. 89-FWS-0070, dated November 14, 1989 for cleaning feedwater control system nozzles in conjunction with Procedure 1FWS-1, "Cleaning Nozzles on Pneumatic Feedwater Control System," Revision 13, November 10, 1989.

November 16: No. 89-EPS-0292, dated November 16, 1989, for cleaning the cooling water suction screen for the emergency diesel generator.

November 20, 21: No. 89-FHS-0013, dated October 27, 1989, for working on Facility Change FC-465 B-01, for the installation of an approved spent fuel rack into the spent fuel pool.

November 21: No. 89-SWS-0022, dated November 1, 1989, for removing the present motor and installing a rebuilt motor on the No. 2 House Service Water Pump.

November 27: No. 89-CRD-0221, dated November 27, 1989, for changing the Control Rod Drive hydraulic filter "B," in accordance with procedure MCRD-6, "Control Rod Drive Filter Change," Revision 15, May 19, 1989.

No violations or deviations were identified in this area.

6. Operational Safety Verification (71707)

The NRC inspectors observed control room operations, reviewed applicable logs, and conducted discussions with control room operators during the inspection period. Instrumentation and recorder traces were examined for abnormalities and discussed with the control room operators, as were the status of control room annunciators. Reviews were conducted to confirm that the required leak rate calculations were performed and were within Technical Specification limits. It was observed that the Plant Manager, the Production and Performance Superintendent, and the Operations Supervisor were well informed on the overall status of the plant, making visits to the control room and touring the plant. A system walkdown was performed to verify the operability of the Containment Isolation System. Tours of the containment sphere and turbine building 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. Radiation protection controls were inspected, including Radiation Work Permits, calibration of radiation detectors, and proper posting and observance of radiation and/or contaminated areas. The inspectors observed site security measures including access control of personnel and vehicles, proper display of identification badges for personnel within the protected area, and compensatory measures when security equipment had a failure or impairment.

On October 26 and on November 24, 1989, the NRC inspector accompanied an Auxiliary Operator on his tour to observe him in the performance of his duties. The Operator appeared to be knowledgeable and competent.

On October 25, 1989, the licensee reduced power to repair a small steam leak on an expansion joint between the high pressure turbine and the moisture separator. Repairs were completed and power ascension commenced on October 26. During the power ascension, operations personnel observed that the turbine bypass valve failed to respond. Power ascension was stopped and maintenance actions commenced to correct the problem. On October 27 at 6:03 p.m. (EDT) the licensee began a controlled shutdown to repair the bypass valve. The reactor shutdown was completed at 9:30 p.m. The inspectors interviewed licensee operators and performed a review of the logs and shutdown portions of Procedure O-TGS-1, "Master Check-Off Sheet," to verify compliance. No items of noncompliance were identified by the inspectors. Maintenance was successfully completed on the main turbine bypass valve, the bypass isolation valve, and the two backup core spray valves, all of which had contained Garlock No. 938 packing material.

Maintenance was successfully performed on numerous other pieces of equipment as scheduled by the outage coordinator. The reactor was critical on November 3 at 11:56 p.m. On November 4, the generator was synchronized to the grid. Full power operation was achieved on November 5. The inspectors interviewed licensee operators and performed a review of the logs and start-up portions of Procedure O-TGS-1, "Master Check-Off Sheet," to verify compliance. No items of noncompliance were identified by the inspectors.

On November 9, the Plant Manager went on a tour of the plant with the senior resident inspector. Minor discrepancies were noted and given to the appropriate people for corrective action. Material condition of the plant continues to improve with many of the outage areas being returned to normal. Plant personnel have continued to diligently pursue excellence in plant cleanliness and in the material condition of their assigned areas.

During the inspection period several new and updated procedures were approved and issued by the licensee.

No violations or deviations were identified in this area.

7. Cold Weather Preparations (71714)

This inspection was performed to determine whether the licensee had maintained effective implementation of the program of protective measures for extreme cold weather to which the licensee committed in response to IE Bulletin 79-24. The inspector, using Procedure O-VAS-1, "Cold/Warm Weather Checklists," Revision 1, dated July 19, 1989, performed a walkdown of the items in the cold weather portion of the procedure. One discrepancy involving valve labeling was noted and brought to the licensee's attention. Corrective action was taken and completed during the inspection period. The licensee has experienced no problems with freezing in safety related systems for several years. The program appears adequate in addressing cold weather protective measures.

No violations or deviations were identified in this area.

8. Operational Status of the Emergency Preparedness Program (82701)

The purpose of the inspection was to determine whether the licensee's emergency preparedness program was maintained in a state of operational readiness.

On October 24 the senior resident inspector attended the annual state/county meeting for review of the Emergency Action Levels. Personnel present were: D. Fugele, Nuclear Emergency Planner; E. Muma, Charlevoix County Emergency Services Director; M. Hobe, Emergency Planning Coordinator; L. Schomberger, Emmet County Emergency Services

Director; R. May, Radiological Defense Officer, Charlevoix County; D. Sibo, Planning Specialist, Michigan State Police. The meeting was informative and allowed for many discussions between the senior resident inspector and the state and county officials. The topics discussed included exercise participation scheduled to occur in 1990 when Region III will be participating. Many discussions on the topic of NRC duties and responsibilities and the Federal Emergency Management Agency (FEMA) were also discussed. The interaction was well received by all who attended.

The senior resident inspector observed the performance of the Semiannual Augmentation drill conducted on October 24, 1989, at 7:05 p.m. Drill objectives were well defined and used to critique the drill. Precautions and initial conditions were discussed with the Security Lieutenants prior to the drill by the drill coordinator. The drill was performed in a professional manner using the site Emergency Plan Implementing Procedure (EPIP) 6F, "Emergency Notifications," Revision 111, July 17, 1989.

Discrepancies, most of which were wrong telephone numbers, were documented and corrected during the inspection period. No recalls were made to unanswered phones. The drill objectives were accomplished and acceptable.

No violations or deviations were identified in this area.

9. Exit Interview

The inspectors 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. 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 or processes as proprietary.