

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-155/82-15(DEPOS)

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: Big Rock Point Nuclear Plant Site

Inspection Conducted: September 15-17 and 28, 1982

Inspectors: *J. P. Patterson*
J. P. Patterson

October 18, 1982

T. J. Ploski
T. J. Ploski

October 19, 1982

Approved By: *W. L. Axelsson*
W. L. Axelsson, Chief
Emergency Preparedness Section

October 25, 1982

Inspection Summary

Inspection on September 13-17 and 28, 1982 (Report No. 50-155/82-15(DEPOS))

Areas Inspected: Routine, announced followup inspection of the Big Rock Point Nuclear Plant to review action taken in response to the Confirmation of Action Letter from Mr. J. G. Keppler, Region III, to Mr. R. B. DeWitt, Consumers Power Company, dated December 14, 1981. Also addressed were the Emergency Preparedness Appraisal "Significant Deficiencies - Appendix A items," "Appraisal Improvement Items - Appendix B" and "Open Items - Appendix D," which were sent by letter dated January 28, 1982. The inspection involved 102 inspector-hours by two NRC inspectors and one NRC consultant.

Results: No item of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

- *D. Hoffman, Plant Superintendent
- *C. Axtell, Chemistry/Health Physics Superintendent - Emergency Planning Coordinator
- R. Abel, Operations and Maintenance Superintendent (Site Emergency Director)
- D. DeMoor, Technical Engineer (Site Emergency Director)
- R. Alexander, Nuclear Safety Technical Engineer (Shift Technical Adviser)
- S. Shirey, Shift Technical Adviser
- *J. Epperson, Associate Health Physicist
- *M. Schaberg, Engineer
- **D. Fugere, General Health Physicist
- **M. Weber, Senior Meteorologist
- **P. Slaughter, Senior Meteorological Technologist
 - J. McNamara, Training Supervisor
 - J. Bowman, Site Commander, Burns Security Force
 - K. Livingston, Security Clerk
- *E. Raciborski, Quality Assurance Superintendent
- *M. Parker, NRC Resident Inspector
- *G. Wright, Senior Resident Inspector
 - L. Gennett, Assistant Fire Chief, Charlevoix City Fire Department
 - O. Stroud, Founder - Charlevoix Township Fire Department

*Denotes those present at the exit interview.

**Denotes assigned to Corporate Office, Jackson, Michigan.

2. Review of Confirmation of Action Letter Items (Letter from J. G. Keppler to R. B. DeWitt, December 14, 1981)

a. (155/81-17-01) Closed - Emergency Implementation Procedures

Deficiency: Emergency Operating Procedures and Off Normal Procedures shall contain statements directing the Reactor Operator to inform the Shift Supervisor of a possible Emergency Plan classification of an event. These statements shall be conspicuous. This shall be completed by February 15, 1982.

Licensee Action: The licensee has revised both the Emergency Procedures (EMPs) and the Off Normal Procedures (OPNS) in Volume 3C entitled "Operating Procedures." These procedural revisions were reviewed by the inspector who confirmed that the following statement in bold type was included where applicable - "Notify the Shift Supervisor, When Entering this procedure, to refer to the Site Emergency Plan Volume 9A for Classification and Emergency Plan Actions as Required." The following procedures, as recommended in the Emergency Appraisal Report No. 50-155/81-17, now contain this statement:

ONP 2.4 Loss of Containment Integrity
 ONP 2.5 Abnormal Radioactive Releases in
 Containment Building and Emergency Entry
 ONP 2.10 Loss of Condenser Cooling Water System
 ONP 2.17 Abnormal Off-Gas on Stack Gas Release
 ONP 2.33 Abnormal Release of Radioactive Liquid
 ONP 2.36 Loss of Station Power
 EMP 3.1 Loss of D.C. Power System
 EMP 3.3 Loss of Reactor Coolant

Eighteen additional operating procedures have been revised by including this activating statement which provides interface with the Emergency Plan Implementing Procedures (EPIPs).

b. (155/81-17-02) Closed - Installation of Backup Meteorological System (MET)

Deficiency: A backup meteorological system will be installed, consisting of wind direction and wind speed sensors mounted on the stack at the level of the isokinetic probe and read out in the control room. Contingent on procurement, this should be completed by May 15, 1982.

Licensee Action: An onsite meteorological monitoring system, having instrumentation equivalent to a backup system as described in proposed Revision 1 to Regulatory Guide 1.23, was placed in service on May 13, 1982. Sensor location and equipment specifications are as described in the January 29, 1982, letter from Mr. T. C. Bordine to Mr. J. G. Keppler.

The following concerns about the monitoring system as documented in the NRC internal memorandum of March 9, 1982, from Mr. L. G. Hulman to Mr. F. G. Pagano were addressed by the inspector. Wind speed and wind direction are being monitored at the level of the stack's top work platform (approximately 71 meters), rather than at about the 36 meter level as was initially intended. Sigma-theta, determined from more than 180 instantaneous wind direction values, is utilized as an indicator of atmospheric stability. Emergency Plan Implementing Procedure (EPIP) 5A "Estimation of Offsite Dose" now contains the following provisions: the onsite monitoring system is the primary source of meteorological data and the Weather Services International (WSI) system is backup; a power law relationship is available for estimating wind speeds more appropriate for

releases through buildings and vents; and WSI is to be utilized to determine stability class when the propeller vane is known to be insufficiently responsive to accurately determine sigma-theta (wind speeds less than 1.5 meters/sec. or when wind flow across sensor is affected by the stack).

Instantaneous and 15 minute average readouts from the propeller vane are available on analog strip chart recorders mounted in a moveable rack located in the hallway that constitutes a portion of the TSC. While both charts are visible from the Control Room windows to the extent that operators can detect ink stoppages and traces indicating invalid data, 15 minute average values cannot be determined from the charts with the required accuracy when the charts are viewed from the Control Room. However, EPIP's 4C "Shift Technical Advisor," 4J "Plant Health Physicist," and 5A "Estimation of Offsite Dose" together indicate that the STA and/or Plant Health Physicist (HP) are required to read the 15 minute average data from the charts once the TSC has been activated. Both persons report to the TSC in an emergency. The inspector suggested that EPIP's 4B "Shift Supervisor" and 4E "Control Operator No. 2" be revised such that the STA and/or Plant HP, rather than Control Operator No. 2, are given responsibility for reading the meteorological data strip charts in an emergency.

The licensee agreed to revise EPIP's 4B and 4E to take the responsibility for reading the strip charts from the Control Operator and give it to the STA's and/or the Plant HP. If the TSC meets NRC habitability requirements per the Probabilistic Risk Assessment review, the location of the onsite meteorological system analog recorders is acceptable.

Since onsite meteorological data readouts are not directly available in the licensee's EOF, the inspector suggested that the EPIP's be revised so that responsibility for providing the EOF with timely updates of 15-minute average onsite meteorological data is clearly assigned to one or more emergency response personnel stationed in the TSC. The licensee agreed to consider this suggestion.

c. (155/81-17-03) Closed - Submission to NRC of Backup Meteorological System Description

Deficiency: A description of the above system will be submitted for NRC review by February 1, 1982.

Licensee Action: A summary description of the onsite meteorological monitoring program was submitted for NRC review as Attachment 1 to the January 29, 1982, letter from Mr. T. C. Bordine to Mr. J. G. Keppler. During the inspection, the inspector reviewed a substantially more detailed description of the program contained in the July 1982 document titled Project Implementation Plan for the Meteorological Monitoring Program - Big Rock Point Plant. The following topics are adequately addressed in this document: overview of the program; assignment of project responsibilities; equipment specifications and locations; system operation and maintenance procedures; onsite and offsite data quality review procedures; calibration procedures; safety instructions for maintenance technicians; and data processing procedures. Sample documentation forms are also provided in the July 1982 document.

The inspector toured the onsite monitoring system with three representatives from the licensee's corporate office who were knowledgeable of the meteorological system. These corporate representatives adequately answered the inspector's questions. The inspector learned from them and the Plant's Associate Health Physicist (HP) that the monitoring program logbook and maintenance and calibration records are presently filed in the licensee's corporate Environmental Division's office. However, copies of these records will eventually be maintained onsite in the plant's Document Control section. The onsite location of all meteorological monitoring program records and the title of the person responsible for maintaining these onsite files should be documented so that these records may be reviewed during future inspections.

Through review of the current Site Emergency Plan, Volume 9, the inspector observed that the current onsite meteorological monitoring program is not described. Also he recommended that reference to the Weather Services International data acquisition system as the primary source of meteorological data be deleted. Appropriate revisions should be made in Section 9.6.4.5 and Section 9.7.4.2. The licensee agreed to make these Site Plan revisions.

An additional concern contained in the March 9, 1982, internal NRC memorandum from Mr. L. G. Hulman to Mr. F. G. Pagano was the lack of available details on the system utilized to provide information on severe weather potentially affecting the plant. Through interviews with the Plant Associate HP and the Commander of the site's Security Force the inspector was informed of the notification system routinely used to provide weather information to the plant. A member of the Security Force is routinely responsible for forwarding to the Shift Supervisor (SS) the daily National Weather Service forecast and any relevant severe weather bulletins. This weather information is transmitted to the plant's security offices from the licensee's Jackson corporate office via a teletype message transmitter called a "Whisper-Writer." A Whisper Writer was used successfully in the April 6, 1982, emergency exercise at the Boyne City EOF.

This procedure regarding the receipt and forwarding of weather information should be incorporated into the appropriate EPIP and cross-referenced in the Site Emergency Plan.

d. (155/81-17-04) Closed - Review and Revision of EPIP-1 for Accident Classification

Deficiency: EPIP-1 will be reviewed and revised so that accident classifications are based on reliable and observable indications available to the control room operator. This will be completed by March 1, 1982.

Licensee Action: EPIP-1, "Activation of the Emergency Plan," has been reviewed and revised by the plant operations staff and management to reflect more specific and definitive terminology to help the Control Room Operator in accident classifications. These revisions were made in March and April 1982. This entire procedure was reviewed by the inspection team and comments were also received from the Senior NRC Resident Inspector. Consensus was that the revisions made, including action levels, format, and proper use of key words should eliminate any ambiguity in classifying accidents which might occur at Big Rock Point. Training on this and related implementing procedures is addressed separately in the next paragraph.

e. (155/81-17-05) Closed - Training

Deficiency: Personnel acting as Site Emergency Directors (SED's) and Shift Technical Advisors (STA's) will be trained in the revised EPIP's with emphasis on classification

of accidents in accordance with EPIP-1. This will be completed by May 1, 1982.

Licensee Action: Training was completed in April 1982 as determined by the inspectors' review of training records and discussion with the Site Training Supervisor. In addition, the inspectors conducted walkthroughs with two SED's and two STA's providing each with a separate emergency event with which to start proper action. Their responses in classifying the event and following the proper EPIP, including notifications as required by the accident classification, were very good. Some of them expressed satisfaction with the training sessions and felt they greatly benefitted from them. The NRC resident inspectors also attended these training sessions and both observed improvement in the application of these revised EPIP's, especially EPIP-1 concerning classification of emergency conditions.

f. (155/81-17-06) Closed - Backup Analytical Capability

Deficiency: An offsite laboratory facility at the EOF in Boyne City will be established by May 1, 1982. The purpose of such a laboratory would be for assaying elevated radioactive samples in event the plant's laboratory facilities become uninhabitable.

Licensee Action: The licensee has installed a NaI detector system in the EOF for counting environmental samples, and a GeLi system in the air compressor room onsite to act as a backup system for counting plant samples (e.g., high-level reactor coolant samples) should the main counting facility be uninhabitable.

The NaI detector system in the EOF is a RIDL-200 gamma analyzer with a NaI detector and a graphic readout on a X-Y plotter. The system was calibrated as of January 29, 1982 and routine operability checks are performed. Nine HP technicians were trained in use of the system. It appears to be adequate for counting environmental samples.

The backup system for counting plant samples is a ND-6685 gamma analysis system. This system will be tied into the ND-6685 system in the chemistry lab. All components for the backup system are located in the air compressor room. However, this system is not calibrated. Calibration will be initiated after maintenance personnel fabricate shelves to hold samples. Plant personnel estimated that calibration will be done by mid-October.

The inspector emphasized that complete calibration of this backup counting system in the air compressor room is required before it can be utilized. Also he suggested that the licensee evaluate the need for relocating the NaI detector system in the EOF to a less congested area. The licensee agreed to consider this.

g. (155/81-17-07) Closed - Survey Procedures

Deficiency: Those procedures necessary to perform plant environs and offsite radiological monitoring will be consolidated into one procedure for use by monitoring teams by March 1, 1982.

Licensee Action: The licensee's response to this consolidation was to make radiological protection procedure EP-1 "Airborne Iodine Monitoring Under Accident Conditions - Off Plant Site" an EPIP (5G). This appears to be an adequate method of consolidating, as now all procedures referring to out-of-plant sampling and surveys are found consecutively in the following EPIP's:

- . EPIP 5F - Environmental Monitoring
- . EPIP 5G - Airborne Iodine Monitoring Under Accident Conditions-Off-Plant Site
- . EPIP 5H - On-site (out-of-plant) Radiological Surveys

The following improvement items are recommended for these procedures:

- . The licensee should address methods for external gamma monitoring in EPIP-5G. EPIP-5G currently is specific for radioiodine sampling. This EPIP should include a discussion of the types of instruments and how to use them.
- . EPIP-5G should include a map indicating routine environmental surveillance locations, in case the environmental contractor is not available to service the sampling systems during an emergency.
- . All offsite emergency kits should have an adequate supply of data sheets.
- . The licensee should consider putting full face mask respirators and protective clothing in offsite emergency kits.

- . In EPIP-5F (p5 F-2 Section 4.1.1) reference to EP-1 should be changed to EPIP-5G.
- . EPIP 5-H should refer to EPIP-5G for use of KI during field work.
- . EPIP 5-F and 5-H should refer to EPIP-5G for methods and equipment for taking external gamma measurements and collecting air samples in the field.

3. Review of Appraisal Improvement Items, Appendix B - January 28, 1982, Letter

There were 14 (Appendix B) items which the Emergency Preparedness Appraisal Team felt should be considered for improvement by the licensee. The licensee took exception to three suggested improvements relating to marking evacuation routes, oral announcement for evacuation of owner controlled area, and providing visible alarms in all high noise areas for evacuation (Items No. 3, 4 and 8 respectively). The inspector, after discussion with the Site Emergency Planning Coordinator on accountability and evacuation drills conducted since the appraisal, agreed that current methods are satisfactory. The siren activation presently used is adequate in view of the size of the plant buildings and small number of personnel involved.

The licensee acted on the remaining 11 either as suggested by the appraisal team or in an alternate manner which the inspection team considers satisfactory.

4. Review of Open Items, Appendix D - January 28, 1982, Letter

- a. (155/81-17-20) Closed - Establish record system for drills to meet NUREG-0654 guidelines

Item: Licensee should establish a historical record system to demonstrate through unannounced drills, conducted during off-hours and long holiday weekends, that Table B-1 shift augmentation can be done in 30 to 60 minutes.

Licensee Action: The licensee has established a record system that contains the names and times required for key personnel to arrive on site as shift augmentation personnel needed for an emergency. This documentation utilized the results of several drills conducted since the appraisal including some telephone only call-in responses by shift augmentation personnel. These drills were confirmed by the inspector through records review plus additional discussion with the Site Emergency Planning Coordinator.

- b. (155/81-17-21) Open - Decision by NRR on Licensee's Probabilistic Risk Assessment (PRA) Regarding Control Room Habitability
- Current Status: The licensee's request for exemption to the habitability requirements for the Control Room, as stated in NUREG-0737, is based on a PRA submitted to NRR. No written decision has been forwarded to the licensee by NRR at this time.
- c. (155/81-17-22) Open - Decision by NRR on Licensee's PRA regarding TSC Habitability
- Current Status: The licensee's request for exemption to the habitability requirements for the Control Room, as stated in NUREG-0737, is based on a PRA submitted to NRR. No written decision has been forwarded to the licensee by NRR at this time.
- d. (155/81-17-12) Open - Installation of the Safety Parameter Display System (SPDS) in the EOF or TSC has not been made
- Current Status: These items remain open pending approval of SECY 82-111B, Requirements for Emergency Response Capability.
- e. (155/81-17-24) Open - Decision by NRR on licensee's PRA dated March 31, 1981, on Post-accident Containment Air Sampling Capability
- Current Status: No written decision has been forwarded to the licensee by NRR.
- f. (155/81-17-25) Open - Licensee was Scheduled to Install Stack Sampling Capability by a February 1982 Refueling Outage
- Current Status: Vendor problems elaborated on in the following correspondence (T.C. Bordine Consumers Power to D.M. Crutchfield NRC - March 19, 1982) have resulted in the installation delay. The system has been accepted by Consumers Power and is expected onsite by October 1, 1982. It is anticipated that the system can be installed while the plant is operating. During the last outage, the interim system was relocated to make room for the new system. Plant personnel estimated that installation, calibration, writing of operating procedures and training can be completed by December 1, 1982, if the system is received by October 1, 1982.

- g. (155/81-17-26) Closed - The Prompt Public Notification System for the Five mile EPZ must be installed by February 1, 1982

Current Status: A special inspection conducted by the two NRC resident inspectors on January 21 and 28, 1982, determined that the warning siren system was installed and operable prior to the required date of February 1, 1982. One test deficiency plus a planned update of the Emergency Planning Pamphlet for public distribution are addressed separately in this report.

Additional information was attached to a February 4, 1982, letter from the licensee to Region III confirming that the siren warning system was installed and operational. This information, as reviewed by the inspector, included under "System Capabilities" a listing of the secondary control point to activate the siren system. This secondary control point in the Big Rock Plant control room includes an encoder, transmitter, and status map. This equipment is onsite but has not been installed.

Installation has been delayed due to a planned expansion of the TSC space including relocating the wall space where the siren status board will be located. Also, the original status board had to be modified to include the location of a 12th siren in Charlevoix.

The inspector contacted (by telephone) the Corporate Emergency Planning Coordinator who agreed to submit a letter defining the current status of this secondary control point at the TSC for siren activation and also to define its usage. Such a secondary siren activation location is not required by NRC regulations.

5. Review of Open Items From Special Inspection, Report No. 50-155/82-01, conducted January 21 and 28, 1982, of the prompt public notification/warning system

- a. (50-155/82-01-01) Open - Update of emergency planning brochure to notify citizens of procedures to follow in event of a nuclear accident at Big Rock Point

Current Status: This informational emergency brochure was entered as an item of contention into the hearings of the Atomic Safety and Licensing Board (ASLB) on the Spent Fuel Pool Amendment. The Board issued an initial decision on August 6, 1982, that stated

the revised brochure was "a substantial improvement over the pamphlet that was originally distributed and criticized by intervenors." However, the August 6, 1982 written decision, based on hearings held from June 7 through June 12, 1982, decreed that further changes recommended and agreed upon between the licensee, the Board and the intervenors must be incorporated into a second major revision to this brochure.

On September 28, 1982, the inspector contacted (by telephone) the licensee representative most directly responsible for revising and distributing this pamphlet. The second revision is in printing and is scheduled for distribution by October 15, 1982. New additional methods for contacting transients include: a brief one page message delivered to the Boatmaster at Charlevoix to hand to boat owners; the addition of an emergency message on the public telephone booth panels near the telephone instruction message section; and an insert page in the local telephone books. A new distribution will also be made to local motels and hotels.

Until this brochure is distributed and a copy is reviewed by Region III and FEMA Region V, this item will remain open.

- b. (50-155/82-01-02) Closed - NRC resident inspector could not clearly hear one of the sirens in the City of Charlevoix. Voice messages sounded garbled at nearly all observer stations during this initial test. (Reference - Inspection Report No. 50-155/82-01)

Current Status: A new siren, increasing the total from 11 to 12, was installed in Charlevoix and was operationally tested in May 1982. Sound coverage and voice reception were considered satisfactory by the licensee's observer. NRC did not observe this test.

5. Other Items Addressed in Inspection

(50-155/82-15-02) Closed - Unusual Event

The inspector reviewed the licensee emergency information forms to determine whether any actual reportable events occurred since the December 1981 appraisal and whether the licensee followed their procedures in notification and recording of the event. One Unusual Event took place on June 11, 1982. This was an electrical fire at the main generator exciter unit. Procedure II EPIP-6F was followed. Messages were documented properly and offsite agency notification was timely.

6. Exit Interview

The inspection team met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection. Licensee management agreed to make the implementing procedural changes suggested by the inspectors relative to the newly installed backup meteorological system. Other suggested changes listed in this report will also be considered by the licensee.

All the inspection findings relating to items in Appendix A, B and D were discussed with the licensee. Also the inspector reviewed two open items resulting from the special inspection conducted by the two NRC resident inspectors of the prompt public notification system in January 1982. One of these remains open - namely the Emergency Planning brochure (Reference Section 5).