UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-155/76-12

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49210

Big Rock Point Nuclear Plant
Charlevoix, Michigan

License No. DPR-6
Category: C

Type of Licensee: BWR GE 240 MWt

Type of Inspection: Special Announced

Dates of Inspection: May 29-30 and June 2-4, 1976

Principal Inspector: D. R. Hunter for [signature] 6/21/76 (Date)

Accompanying Inspector: for C. H. Brown [signature] 6/22/76 (Date)

Other Accompanying Personnel: None

Reviewed By: E. L. Jordan, Chief for [signature] 6/22/76 (Date)
Reactor Projects Section 2

8101210328

SUMMARY OF FINDINGS

Inspection Summary

Inspection on May 29-30 and June 2-4, 1976 (76-12): Headquarters requested items, reportable occurrences, facility changes, preoperational testing and outstanding inspection items were reviewed.

Enforcement Items

None.

Licensee Action on Previously Identified Enforcement Items

A review of plant modification controls indicates that the licensee's corrective actions are complete. (Paragraph 6, Part II, Report Details)

Other Significant Findings

A. Systems and Components

1. Final modification requirements on the core spray line flows are in progress. The licensee is providing a recorder and switching circuit for the core ring and nozzle spray flows. (Paragraph 3, Part II, Report Details)

2. Unresolved Item: The design review concerning the electrical power to the new Reactor Depressurization system was not complete. (Paragraph 7, Part II, Report Details)

B. Facility Items (Plans and Procedures)

1. The construction activities on the new office building is continuing.

2. The refueling outage has been extended into the week of June 14, 1976.

3. IE:III inspected Headquarters requested items concerning certain ECCS commitments made by Consumers Power Company.

4. The lifetime exemption to 10 CFR 50.46 concerning the core spray lines was issued on May 26, 1976, by the Commission and Amendment 10 to the license was subsequently issued on June 4, 1976.

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Reported Unresolved Items

1. The illegible certifications for Class I support steel and the incorrect ASTM specifications for the RDS has been corrected. These items are considered closed. (Paragraph 4.b, Part II, Report Details)

2. The licensee has taken action to clear the unresolved item concerning the authorized inspection sign off of the 1974 inservice inspection. This item will remain open pending the sign off by the authorized inspector. (Paragraph 4.a, Part II, Report Details)

Management Interview

The management interview was conducted on May 30 and June 4, 1976, by Messrs. Hunter and Brown with the following persons present:

R. B. DeWitt, Manager Production
C. J. Hartman, Station Superintendent
G. B. Szczotka, Quality Assurance Superintendent
T. W. Elward, Technical Superintendent
R. E. Schrader, I&C Supervisor
D. E. DeMoor, Technical Engineer
S. E. Martin, Project Engineer
G. H. Petitjean, Plant Engineer
E. M. Evans, Plant Test Engineer

A. The inspector stated that in the preliminary review of the facility change to fuse floodable alarm circuits it was noted that a functional test has not been planned and requested that selected circuits be functionally tested. The licensee stated that tests on selected circuits would be performed. Subsequently, the inspector noted that functional tests had been performed satisfactorily on almost all of the circuits.

The inspector stated that the inspection frequency to verify fuses had not blown was not specified. The licensee stated that the fuse check was to be added to the monthly check list.

B. During a discussion of the inspector's review of breaker evaluation and trip setting checks, the inspector questioned the non "Q-listing" of the breaker trip functions as these breakers provide protection to safety related buses (the buses are Q-listed). The licensee stated that a review would be made and bus protection included in the Q-list as determined applicable. The inspector also requested that an evaluation of the breaker data be made to verify selective tripping. (Paragraph 3, Part I, Report Details)

C. The inspector stated that IE:III position is that the emergency diesel generator is to be maintained onsite until certain items of concern are addressed and resolved. These items include: the maintenance and operability status of the diesel generator unit when not onsite, the routing of the unit between Marysville and the BRP plant; cab and trailer failures; and effects of storms, bad weather conditions and other natural disasters.

The licensee stated that the emergency diesel generator will be maintained onsite until the concerns are resolved. (Paragraph 2.c, Part II, Report Details)

D. The inspector stated that the review of the completed Marysville emergency diesel generator load test, requested by IE:III on May 30, 1976, utilizing the 2B station bus and the motor-driven fire pump appeared satisfactory. The inspector noted that the discrepancies which were found during the preparation phase and the performance phase of the testing substantiated the need for a complete preoperational test of the system prior to plant startup. The inspector stated that the Marysville diesel was considered by IE:III as the same level as the installed emergency diesel generator and noted the lack of instruction manuals on the unit.

The licensee stated that the engine was included in the manual for the controlled diesel and a generator manual had been ordered. (Paragraph 2.d, Part II, Report Details)

E. The inspector stated that IE:III had signed off on June 3, 1976, the commitments made by the licensee concerning the emergency diesel generator procedures and controls (diesel onsite), the protection of the annunciator/alarm circuits and the procedural control of the core spray valves subsequent to a LOCA. The inspector stated that IE:III will continue to review, in parallel with NRR, the additional corrective actions taken by the licensee. These actions include the final issue of Procedure D3.3 with the core spray flow recorder and switching circuit included as requested by NRR.

The licensee indicated that the procedure was being reviewed and the facility change was being processed to make the changes on the core spray flow recorder and switching circuit. (Paragraph 3, Part II, Report Details)

F. The inspector stated that the review of an unresolved item concerning the 1974 inservice inspection revealed that the licensee had eliminated five welds from those completed during the 1974 inservice inspection due to lack of test block traceability. The inspector asked the licensee if the reduction in the number of welds placed the plant outside the Technical Specifications requirements. The licensee stated that the preliminary investigation indicated that no problem existed with the required number of completed welds through the 1976 inservice inspection. The licensee stated the item would be thoroughly reviewed to establish the status of the inservice inspection program on the two involved systems. (Paragraph 4, Part II, Report Details)

G. The inspector stated that a review of the status of the Conax penetrations revealed that the gauges had been removed.

The licensee stated that the gauges had not been installed during the original design testing. (Paragraph 5, Part II, Report Details)

H. The inspector stated that a review of the offsite design review performed for facility change concerning the addition of the security load to station bus 2A in 1975 revealed no discrepancies. (Paragraph 6.a, Part II, Report Details)

I. The inspector stated that the review of the RDS facility change packages revealed that the design review concerning the power to the UPS panels was not complete. The inspector asked the licensee to review the package and the correspondence with the offsite

engineering group and complete the design review. The inspector stated that this item would be carried as an unresolved item and required resolution prior to final acceptance of the RDS system. The licensee acknowledged the statement and stated that the item would be resolved. (Paragraph 7, Part II, Report Details)

J. The inspector stated that the review of the remaining completed startup test procedures indicated that low specific gravities on numerous UPS battery cells existed in addition to the two battery cells which were scheduled to be replaced. The licensee stated that specific gravities had been taken on all the UPS battery cells and three cells may have to be replaced due to low specific gravity readings prior to plant startup. (Paragraph 8.i, Part II, Report Details)

K. The inspector asked the licensee the status of the handling of the containment vacuum instrument isolation valves.

The licensee stated that a facility change was being processed to provide solenoid valve isolation of the instruments at a specific increasing containment pressure; and if the facility change is not completed the instruments will be manually isolated prior to startup with procedural controls established to open the isolation valve when containment pressure decreases.

L. The inspector stated that a review of Technical Specifications required surveillance revealed no discrepancies. The licensee stated that the surveillance had been completed with the exception of three items, cleared through management with NRR, which included the full load test of the emergency diesel generator, the automatic transfer from the 138 KV to the 46 KV for station service, and the full load test on the station battery. The licensee stated that these tests will be performed at the next outage, which was considered within the present cycle by NRR. (Paragraph 9, Part II, Report Details)

REPORT DETAILS

Part I

Prepared By: C. H. Brown (Date) 6/22/76

Reviewed By: W. S. Little (Date) 6/22/76

1. Persons Contacted

G. B. Szczotka, Quality Assurance Superintendent
R. L. Schrader, I&C Supervisor
D. D. Herboldsheimer, Maintenance Scheduler
P. J. Santek, Senior Chemistry and Radiation Protection Technician
D. E. DeMoor, Technical Engineer
J. P. Flynn, Maintenance Superintendent
H. G. Black, Maintenance Supervisor
G. H. Petitjean, Engineer

2. Facility Changes

The inspector reviewed selected facility changes pertaining to upgrading the components to meet LOCA conditions. Several other safety related facility changes were also reviewed.

The facility changes were verified to have been made in accordance with 10 CFR 50.59, and reviewed and approved in accordance with the facility's Technical Specifications and established Administrative Procedures. For the changes selected, the acceptance test procedures were verified to have acceptance values. The completed performance tests were verified to have been reviewed and approved per the facility procedures. Applicable operating procedures were verified revised. The "as built" drawings were verified on a spot check basis to have been changed as per the facility procedures.

The following facility changes were reviewed:

SPS-76-FC-369	Fusing to protect power supply for alarm panel. (Access Control)
SPS-76-FC-370	Fusing to protect power supply for isolation valve indication.

SPS-76-FC-371	Fusing to protect power supply for panel. (NSSS Annunciator)
SPS-76-FC-372	Fusing to protect power supply for alarm panel. (Station Service)
FPS-74-FC-272	Provide RMC-5530 and 5531 "pull to lockout" feature.
PIS-76-FC-336	Delete electrical interlock between MO-7064 and 7068; disable automatic function MO-7068.
MSS-75-FC-314	Modification to radiolytic gas sample system.
SCS-76-FC-351	Replacement of PS-621 and 624 with qualified switches.
PIS-76-FC-365	Disable MO-7069 in the open position.
NMS-76-FC-352	Modification of -150 VDC power supply for the power range nuclear instrumentation channels.

3. Electrical System

The inspector reviewed Maintenance Orders (MOs) checking breaker and overload set points that had been performed during the past several months (MOs No's. SPS-1003 - SPS-1008). In three of the MOs, it was noted that the set points of the thermal overloads were left outside of the "setting sheet" specifications. Further review revealed these overloads were used as sensor units to activate the control room annunciator for overload alarms. With the "as left" setting, the overload conditions would exist for approximately 1/3 longer, before the alarm occurs, than nominal values (20-30 sec.). These alarms are not Q-listed and setting sheets are, therefore, not reviewed by management. The majority of the breakers checked by the MOs that the inspector reviewed during this inspection were not reviewed by management. During a discussion concerning evaluation of breaker settings, the inspector determined that the licensee had not reviewed the setting data and verified that selective tripping would occur for equipment faults and that the breaker trip functions were not included on the Q-list.

4. CRD Relief Valve Supports

The installation of additional supports on the CRD relief valves and the reattachment of original supports were reviewed in connection with AO-25-75 (fatigue failure of relief valve piping welds). The

review revealed that the supports were added providing clamping positions of the relief valves. One relief valve weld and one line weld to the other relief valve had failed and had been repaired. Twenty-one welds were penetrant tested (including the line weld that failed) with no indications noted. The licensee stated that the system would be repaired as welds or piping failed. Further failures are expected due to the length of time the system has been operating with pipe vibration. The CRD charging system is not considered to be safety related and the MO had been reviewed and approved per the facility procedures.

This item is considered closed.

REPORT DETAILS

Part II

Prepared by D. R. Hunter

1. Persons Contacted

C. J. Hartman, Plant Superintendent
J. P. Flynn, Maintenance Superintendent
C. R. Abel, Operations Superintendent
G. B. Szczotka, Quality Assurance Superintendent
D. E. DeMoor, Technical Engineer
A. C. Sevener, Operations Supervisor
H. G. Black, Maintenance Supervisor
R. L. Schrader, I&C Supervisor
P. J. Santek, Senior Chemical and Radiation Protection Technician
S. E. Martin, Project Engineer
G. M. Evans, Plant Test Engineer
G. H. Petitjean, Plant Engineer
W. Clark, Projects Construction Superintendent
D. A. Taggart, Projects Quality Assurance
K. F. Krueger, Startup Engineer
A. J. DeGrasse, Catalytic Startup Coordinator
J. W. Chapman, Catalytic Quality Assurance

2. Marysville Emergency Diesel Generator

The inspector reviewed the actions taken by the licensee to meet the commitment 1/2/ that a second emergency diesel generator could be obtained and made operational within 24 hours following a loss of coolant accident (LOCA).

a. The trailer mounted emergency diesel generator was onsite following the completion of the initial phase of the licensee test to provide assurance that the commitment could be met. The trip (250 miles) from the Marysville Gas Plant (Port Huron, Michigan) required 18 hours due to a truck cab breakdown enroute to the BRP plant. The overall delivery and hookup time was approximately 20 hours.

b. The inspector reviewed the administrative controls established for initiating the delivery of the diesel generator.

1/ CP to NRR ltr dtd 5/11/76.
2/ Commission to CP, Memorandum and Order, dtd 5/16/76.

No discrepancies were noted.

(1) Volume 9, Site Emergency Plan, Section 9.7.

(2) Appendix A to the Site Emergency Plan.

(3) Appendix B to the Site Emergency Plan.

c. The availability of the emergency diesel generator was contingent on a number of items which did not appear in an evaluation by the licensee. Inclusive in this area are:

(1) The apparent lack of a requirement that the BRP Plant Superintendent be specifically notified of any maintenance outage on the emergency diesel generator while the unit is located at the Marysville plant. The licensee procedures required that the BRP Plant Superintendent be notified if any outage on the emergency diesel generator exceeded 24 hours. IE:III considers this unacceptable based on the commitment[3/] made by Consumers Power Company.

(2) The routing and alternate routing of the trailer-mounted emergency diesel generator had not been addressed in the evaluation made by the licensee.

(3) Unavailability of the emergency unit due to a trailer failure enroute to the BRP plant had not been addressed. The diesel generator unit is enclosed and permanently attached to the trailer bed and cannot easily be transferred to another trailer.

(4) Severe weather and other natural conditions preventing delivery had not been addressed in the evaluation.

d. The inspector reviewed the plant procedures for installation, checkout and operation of the emergency diesel generator unit.

(1) MEPS-3, Connection of the Offsite Emergency Diesel Generator Unit

The inspector's review of the maintenance procedure and observation of the physical cable layout revealed that the diesel generator unit had not been physically connected to the emergency bus and the cable lugs would not fit the terminals in the 2B emergency switchgear. The licensee drilled the lugs out 1/16" and verified that they would fit. The licensee had estimated the final hookup of the cables to the emergency switchgear to require approximately one hour.

3/ CP to NRR, ltr, dtd 5/11/76.

The licensee load tested the emergency diesel generator unit on May 31, 1976, to 90 KW. The preparation for the load test of the unit revealed a number of problems which were corrected by the licensee. The emergency diesel generator grounding system had to be modified to be compatible with the station grounding system (ungrounded "Y" system required). The pigtail cables on the emergency unit were removed and the cables to the plant connected directly to the unit output to provide a more reliable system and a higher resistance to ground reading. A ground cable was required to be installed between the trailer and the plant ground system to provide a commonly grounded system. The maintenance procedure was modified to include the complete installation, removal and testing of the Marysville emergency diesel generator unit, and also to provide detailed instructions for reconnecting the station emergency diesel generator to the bus, followed by appropriate functional testing.

No discrepancies were noted.

(2) D2.14, Loss of the Emergency Diesel Generator

The inspector discussed with the licensee the fuel oil system on the diesel unit and the normal and emergency methods of replenishing the 600 gallon fuel oil tank.

No discrepancies were noted.

(3) The inspector verified that the licensee was planning a preventive maintenance program on the emergency diesel generator unit.

This item will remain open and will be reviewed at a subsequent inspection.

e. The inspector reviewed the diesel generator installation and the internal memo providing the engineering evaluation on the emergency diesel generator unit. The inspector's review of the installation revealed no nameplate data on the generator. The diesel nameplate data generally substantiated that the unit was a 285 KW unit at a 0.9 power factor. The load testing of the generator unit provided assurance that the unit would generate 90 KW of reliable power at 480V AC, 60 Hertz.

f. The inspector verified that a vendor manual was available for the diesel and that the licensee had ordered a manual for the generator unit.

This item will remain open and will be reviewed at a subsequent inspection.

3. Core Spray Valve Procedural Control

The inspector reviewed a final draft copy of Emergency Procedure D3.3, Loss of Reactor Coolant. The procedure review indicated control in areas of concern in the "Subsequent Operation Action" section of the procedure. Items D3.3.2.4. q through t, with independent checks by an SRO, provided for the steps concerning evaluation and determination of a core spray line break and included the isolation of the appropriate core spray line. This item is considered adequate by IE:III. This item remains open pending the final procedure revision and licensee actions on NRR required corrective action and will be reviewed at a subsequent inspection

4. Previously Identified Unresolved Items

a. The inspector reviewed the status of the unresolved item[4/5/] concerning the 1974 inservice inspection sign off by the authorized inspector. The licensee representative indicated that a total of five welds had to be removed from the completed list due to the lack of traceability of the calibration blocks. The welds to be removed from the list were Nos. 16, 17 and 18 in the shutdown cooling system and Nos. 36 and 37 in the emergency condenser system. By telephone on June 10, 1976, the licensee representative indicated that the number of welds which have been completed on the two systems exceed the requirements of the ASME Code and Technical Specifications. The inservice package has been sent to the authorized inspector, with an explanation enclosed for final sign off. This item will be reviewed further in a subsequent inspection.

4/ RO Inspection Rpt No. 050-155/74-04.
5/ IE Inspection Rpt No. 050-155/75-13.

for which the information is considered proprietary, and should be prepared so that proprietary information identified in the application is contained in an enclosure to the application.

We will gladly discuss any questions you have concerning this inspection.

Sincerely yours,

James M. Allan, Chief
Fuel Facility and
Materials Safety Branch

Enclosure:
IE Inspection Report No.
050-155/76-15

cc w/encl:
Mr. C. J. Hartman
Plant Superintendent

bcc w/encl:
Central Files
IE Mail and File Unit
PDR
Local PDR
NSIC
TIC
Ronald Callen, Michigan Public
Service Commission
Anthony Roisman, Esq., Attorney

b. The inspector reviewed the certifications on the Class I support steel provided by Bethlehem Steel Company to Catalytic for the RDS system and verified that the certifications were legible. The inspector verified by record review that the ASTM specifications shown on the bill of material from Haven Busch Company to Catalytic were corrected.[6/]

These items are considered closed.

5. Outstanding Items

The inspector's review revealed that the pressure gauges,[7/] previously installed on the Conax penetrations, had been removed. The licensee indicated that the pressure gauge installation had not been qualified by the original seismic testing and were not qualified in that application.

The inspector discussed the penetrations with the licensee representative and determined that the penetrations were pressurized and then the gauges were isolated, removed and the openings plugged.

No further questions are required at this time and this item is considered closed.

6. Previously Identified Items of Noncompliance

The inspector's review of the required offsite design analysis[8/9/] concerning the security load added to the 2A bus revealed no discrepancies. The review included trip data of the 52-2A63 and 52-2A breakers and the evaluation which indicated that the 52-2A63 breaker will clear on a fault. The security load had been determined to be small addition to the normal bus loading.

This item is considered closed.

7. Reactor Depressurization System

a. The review of the facility change package on the RDS revealed an apparent discrepancy. The documented design review for the UPS power supplies from the 1A and 2A buses (1A-13, 1A-64, 2A-16 and 2A-65) was not complete. A memo from Cherba to Hartman, dated April 1, 1976, indicated that the startup test program could continue, but a hold on plant startup was required pending the completion of the design review to back up a memo from J. Westbrook, dated March 31, 1976.

6/ IE Inspection Rpt No. 050-155/76-09.
7/ IE Inspection Rpt No. 050-155/76-10.
8/ AO 050-155/24-75.
9/ IE Inspection Rpt No. 050-155/76-15.

This item will be carried as unresolved pending corrective actions by the licensee.

b. A review of the outstanding startup deficiencies revealed that the fault detector (SUD-34) was being eliminated due to an inadequate design. The inspector verified that the item had been reviewed by the licensee and the designer.

The inspector noted that the outstanding startup deficiencies had been reviewed and dispositioned by the licensee.

8. RDS Preoperational Procedures

The inspector reviewed the following completed startup test procedures:

a. BRP STP 001, Water Level and Evaluation Alarm, performed on April 6, 1976, with final review on June 2, 1976.

No discrepancies were noted.

b. BRP STP 002, Actuation System, performed on April 29 and 30, 1976.

No discrepancies were noted.

c. BRP STP 003, UPS Checkout, performed on March 29 - May 18, 1976, with final review on June 2, 1976.

One startup deficiency was outstanding and dispositioned (SUD-43) concerning the UPS CB-7 breaker specifications.

No discrepancies were noted.

d. BRP STP 004, Depressurization Valve Performance Test, released to perform on May 17, 1976, final review on June 2, 1976.

No discrepancies were noted.

e. BRP STP 005, Isolation Bypass System Performance Test, performed on May 7, 1976, final review on June 2, 1976.

No discrepancies were noted.

f. BRP STP 006, Check Valve Holding Test, performed on May 15, 1976, final review on June 2, 1976.

g. BRP STP 007, Fire Protection Circuit Functional Test, performed on April 22, 1976, final review on June 2, 1976.

No discrepancies were noted.

h. BRP STP 009, Blowdown Line Temperature Functional Check, final review on June 2, 1976.

No discrepancies were noted.

i. BRP STP 011, UPS Functional Test.

The inspector noted that specific gravity readings were taken on May 14, 1976, following the second equalizer charge. A review of the data indicated that 52 cells exhibited specific gravity readings below 1.200; 4 cells in UPS "A", 1 cell in UPS "B", 3 cells in UPS "C" and 44 cells in UPS "D". The licensee representative indicated that subsequent testing had determined that all but two cells in the UPS "D" had exhibited satisfactory specific gravity readings. Startup Deficiency-45 had been issued to cover cells No. 1 and No. 20 in the UPS "D" unit. No documentation of the subsequent specific gravity readings were available.

During the inspection the licensee performed specific gravity readings on all the indicated weak cells and determined that three cells in the UPS "D" were below 1.200 specific gravity.

This item will remain open pending the correction and/or replacement of the weak cells and the completion of the appropriate data in the startup test procedure (011) package prior to plant startup.

j. BRP STP 012, Overall System Performance, released for performance on May 20, 1976, final review on June 2, 1976.

No discrepancies were noted.

k. BRP STP 013, Selected Fault Test, performed on April 1, 1976.

No discrepancies noted.

l. BRP STP 014, Tunnel Modifications, safety evaluation on April 20, 1976, reviewed on May 20, 1976.

No discrepancies were noted.

9. Surveillance

The inspector performed a review of the surveillance performed by the licensee to be in compliance with the newly issued amendment to the license.

The review included a step by step check off of the newly issued Technical Specifications requirements with the licensee representative.

The licensee had provided coverage by writing new tests, insuring that old test procedures included the new requirements, and revising the preventive maintenance program as appropriate.

Surveillance items which were not performed, after clearance with NRR to be performed at the next outage, included the test of automatic initiation sensors and load testing of the emergency diesel generator to 180-200 KW generator output for at least 20 minutes (T.S. 4.5.3.A.1.a); the verification of the automatic transfer of station power from the 138 KV line to the 46 KV line (T.S. 4.5.3.A.1); and the 60-month battery capacity test for 80% of manufacturer's rating when subjected to a performance discharge test (T.S. 4.5.3.A.4).

No discrepancies were noted.

10. Reportable Occurrence

The inspector reviewed the following reportable occurrence to assure adequate review, evaluation and reporting.

LER RO-7-76, Failure of Isolation Function of the Resin Sluice Valves, on April 28, 1976. The licensee reported[10/] that the resin sluice isolation valves (CU-4091, 4092 and 4093) failed to close by remote signal during a routine test.

The inspector reviewed the maintenance activity (76-CIS-11904) performed on April 28, 1976.

The solenoid valve, SV-4879, was jammed in the vent (closed) position due to a worn seat point. The solenoid valve was rebuilt, reinstalled and successfully tested in accordance with the approved Maintenance Procedure (MEP-5, Rev. 0).

No discrepancies were noted.

10/ CP to IE:III, ltr, dtd 4/12/76.