April 24, 2001

Mr. Kurt M. Haas
General Manager
Big Rock Point Nuclear Plant
Consumers Energy Company
10269 US 31 North
Charlevoix, MI 49720

SUBJECT: BIG ROCK POINT INSPECTION REPORT 05000155/2001-002(DNMS)

Dear Mr. Haas:

On April 12, 2001, the NRC completed an inspection at the Big Rock Point Nuclear Plant Restoration Project which examined decommissioning activities. The areas examined during this inspection were facility management and control, decommissioning support activities, Spent Fuel Pool (SFP) safety, and radiological safety. The enclosed report presents the results of this inspection.

No violations of NRC requirements nor other findings were identified.

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We will gladly discuss any questions you may have regarding this inspection.

Sincerely,

/RA/

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No. 05000155
License No. DPR-6

Enclosure: Inspection Report 05000155/2001-002(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	05000155
License No:	DPR-06
Report No:	05000155/2001-002(DNMS)
Licensee:	Consumers Energy Company
Facility:	Big Rock Point Nuclear Plant
Location:	10269 U.S. 31 North Charlevoix, MI 49720
Dates:	March 5, 2001 April 12, 2001
Inspectors:	Edward Kulzer, CIH, CSP, Reactor Decommissioning Inspector Roy Leemon, Reactor Decommissioning Inspector
Approved By:	Bruce L. Jorgensen, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Big Rock Point Restoration Project
NRC Inspection Report 05000155/2001-002(DNMS)

This routine decommissioning inspection covered facility management and control, support activities, spent fuel safety and radiological safety. The primary activity being performed was the removal of the reactor shield tank. Overall, major decommissioning activities continued to be properly monitored and controlled.

Facility Management and Control

- The Nuclear Performance Assessment Department (NPAD) appeared to be effective in identifying, resolving, and preventing issues that degrade safety or the quality of decommissioning.

- The design change program, including plans for the ISFSI concrete pad and crane were reviewed; design changes were being effectively managed and conducted.

Decommissioning Support Activities

- Work sites were being adequately maintained and controlled. When potential hazards were identified, they were addressed promptly and effectively.

Spent Fuel Pool Safety

- The SFP level and temperature monitors were inspected and found to be functioning properly. Calibrations of the SFP temperature, level, and area radiation monitors were inspected and found to be in compliance.

Radiological Safety

- Approximately 500,000 pounds of radiological waste has been sent to GTS-Duratek this year in 16 shipments. All shipments were in compliance with Department of Transportation (DOT) and NRC regulations.

- Performance against the ALARA goals for the year was reviewed and cumulative exposure was found to be as projected.

Report Details

Summary of Significant Plant Activities

Since the previous inspection, the primary activy has been work on removing the reactor shield tank.

1.0 Facility Management and Control

1.1 Organization, Management, and Cost Controls (36801)

a. Inspection Scope

The inspectors conducted reviews of ongoing plant activities, attended licensee meetings, and met with licensee management to assess overall facility management and controls.

b. Observations and Findings

The inspectors attended a meeting which discussed staffing levels within the decommissioning organization over the next three years. No concerns were identified regarding adequate staffing to implement the site radiological controls program, and to maintain safety and quality commensurate with decommissioning activities. Staff turnover appeared to be low, with trained and experienced personnel being retained.

On March 29th Mr. Jerry Slade, British Nuclear Fuels Limited (BNFL) Project Manager at Big Rock, retired. Mr. Patrick Daly has been named as his replacement. BNFL is the contractor responsible for major component removal for the Big Rock Point Restoration Project. Daly has business and engineering degrees from Western Michigan University and the University of Michigan, along with 19 years of experience in the nuclear industry.

c. Conclusions

Overall management of the facility, including staffing levels and the retention of trained personnel, appeared to be adequate.

1.2 Self Assessment, Auditing, and Corrective Action (40801)

a. Inspection Scope

The inspectors conducted interviews, attended licensee meetings, and reviewed site documents to evaluate the effectiveness of licensee controls in identifying, resolving, and preventing issues that degrade safety or the quality of decommissioning.

b. Observations and Findings

Big Rock Point has an independent assessment team, the Nuclear Performance Assessment Department (NPAD), that works full time at the site. The NPAD staff attend all plant management meetings and most Safety Review Committee meetings. When

an issue is identified, they will either document it in a Condition Report (CR), or request that the cognizant work group document the issue in a CR.

Condition reports were reviewed on the following: crane malfunction, electrical shock, loss of site power. It appeared the licensee's process was effective in identifying issues in a timely manner and bringing them to management's attention for corrective action.

c. Conclusions

The corrective action program appeared to be effective in identifying and resolving issues that could degrade safety or the quality of decommissioning.

1.3 Facility Design Change (FC) Program (37801)

a. Inspection Scope

The inspectors reviewed Volume 1, Procedure D 3.1.1.1, "Facility Changes", held discussions with engineering staff members, and observed meetings related to FCs to determine if facility design changes were effectively conducted, managed, and controlled during decommissioning.

b. Observations and Findings

The purpose of Volume 1, Procedure D 3.1.1.1, "Facility Changes," was to establish the requirements for design, authorization, installation and documentation of a facility change to the plant, systems, components and structures.

One FC in progress involved construction of the Independent Spent Fuel Storage Installation (ISFSI). The inspectors toured the area of the ISFSI pad and observed that the area is heavily wooded. The inspectors questioned whether the barrier around the pad had been evaluated with respect to forest fires; this could not be immediately determined and will be reviewed during a future inspection.

The ISFSI project will also require a new crane in the containment building. At the time of the inspection, floor areas of the facility below where the crane will operate were being reinforced in order to handle the additional load. The structure that will hold the crane is being analyzed by Biggie Power Construction Company. Biggie will follow ASME NOG-1-1998 titled "Rules for Construction of Overhead and Gantry Cranes". Biggie will handle any modifications to the existing structure to support the crane and its load in accordance with the above standard. The crane, which will come from Edder Crane Company, is presently scheduled for installation in August.

c. Conclusions

Facility design changes were effectively conducted, managed, and controlled during decommissioning.

2.0 Decommissioning Support Activities

Maintenance and Surveillance (62801)

a. Inspection Scope

The inspectors reviewed the quality and effectiveness with which the licensee was maintaining necessary facilities at the site.

b. Observations and Findings

The inspectors conducted a tour of the facility to assess general housekeeping, the condition of the recirculation pump room, and the removal of the reactor shield tank to ensure that the licensee was maintaining safe conditions. The removal of the reactor shield tank involved confined space entry procedures, environmental monitoring, and a fire watch.

Work sites were observed to be well controlled during work activities, with appropriate barriers and signs. The work areas that presented a potential safety hazard were clearly identified, and the required training was in place. For example, work had to be stopped on several occasions when the carbon monoxide (CO) monitors alarmed. When the excessive CO levels cleared, work was resumed.

An industrial event occurred when an employee reported being shocked during the removal of temporary lighting. The employee reported the event several hours after it had occurred. The employee was immediately examined by an EMT and the nurse. This work was stopped, and a safety stand down meeting was held. The employee was later questioned, very professionally, as to his activities and reminded to report all events immediately. Apparently he was cutting down the light stringers which were held in place by metal hangers, when one hanger made contact with a socket that had a broken bulb. The employee was wearing full PPE [personal protective equipment] when the event occurred. The corrective action put in place was to use only plastic hangers for this lighting in the future.

c. Conclusions

Work sites were being adequately maintained and controlled. When potential hazards were identified, they were addressed promptly and effectively.

3.0 Spent Fuel Safety

3.1 General (60801)

The inspectors evaluated spent fuel and fuel pool safety. Factors considered in the evaluation included SFP heatup rate; SFP instrumentation, alarms, and leakage detection; cleanliness control; criticality controls; and SFP operation and power supply. The inspector reviewed station logs and held discussions with the licensee. The inspector also inspected the SFP and SFP support system's valve lineups during plant tours.

3.2 Temperature and Level Control

a. Inspection Scope

The inspectors locally monitored SFP level and temperature. The inspectors verified the criticality monitor was functioning. The inspectors also observed that foreign material controls were being used in and around the SFP.

b. Observations and Findings

Defueled Technical Specification 3.1.1 requires that the SFP level shall be maintained at or above 630 feet, and that SFP water temperature shall be greater than 40°F and less than 140°F. The operating range for temperature of the SFP is 40 to 80°F. On March 6, 2001, the SFP temperature was 70°F and the time for the temperature to rise to 140°F was 22.4 days. The present SFP heatup rate is 0.13°F/hour. Controlling the temperature of the SFP within the operating band was not a problem. The level of the SFP on April 9th was 630 feet and 6 inches. The established range for the SFP is from 630 feet to 632 feet 6 inches.

On April 11, 2001, a lightning storm caused a power outage due to a blown fuse at the sub-station. The power went out at approximately 11:15 p.m. The secondary generator failed twice before proper operation. Calls were made to the On Call Site Emergency Director and Power Control. Power was restored at 12:17 a.m. on April 12.

c. Conclusions

Spent Fuel Pool temperature and level were being maintained well within established limits. During a one-hour power outage the SFP temperature did not rise significantly.

3.3 Calibration of SFP Temperature, Level and Area Radiation Monitors

a. Inspection Scope

The inspectors reviewed the DTS surveillance requirements, work orders and calibration procedures to determine if the SFP temperature, level, and area radiation monitors were functional and calibrated within the required time period.

b. Observations and Findings

A yearly calibration was performed on SFP level instrument 5803 using procedure ISFP-1, “Spent Fuel Pool Level Indication Calibration.” After measuring the “as found” readings, it was determined that the instrument did not require any adjustment and all alarms were satisfactory.

A yearly calibration was performed on SFP water temperature instrument 5803 using Defueled Procedure (DP)-100. “Calibration of SFP Temperature Indication.” The instrument 5803 was found and left within calibration requirements.

Monthly calibrations of SFP area radiation monitors were performed. The inspectors reviewed Procedure T30-07/(Radiation Instrument Procedure) RIP-5 for calibration of SFP area monitors. Radiation Elements (RE) 8286 and RE 8287 were calibrated on February 6, 2001, and on March 1, 2001, within the 30 day calibration period.

c. Conclusions

The SFP temperature instrument, level instrument, and area radiation monitors were calibrated within the time periods required.

4.0 Radiation Safety

4.1 Occupational Exposures (83729)

a. Inspection Scope

The inspectors reviewed exposure records to determine if administrative controls meet requirements and maintained exposures ALARA.

b. Observations and Findings

The inspectors reviewed the ALARA Dose Tracking Reports, the Active RWP Summary, and personnel exposure indicators to determine if the ALARA program was functioning properly. The ALARA goals for the year for the reactor vessel preparation were projected at 16.09 rem. The actual dose received thus far is 30.67 mrem which is in line with projected goals. One problem was encountered because of carbon monoxide buildup during the removal of the reactor shield tank. This led to repeated stopping and restarting on the project and lengthened the schedule. The problem was alleviated with the provision of additional exhaust units in the area.

c. Conclusions

The ALARA goals will remain at or near the goals established for the year.

4.2 Transportation of Radioactive Materials (86750)

a. Inspection Scope

The inspectors reviewed the documentation for several shipments for compliance with NRC and DOT regulations.

b. Observations and Findings

The inspectors reviewed sixteen waste shipments to GTS-Durtek which totaled over 500,000 pounds of waste for 2001. The total activity of this waste was 2.12E+04 million bequerrels or 5.72E-01 curies. There were no casks shipped this year.

c. Conclusions

Radioactive waste shipments were in compliance with NRC and DOT regulations.

4.3 Prototype Radiological Characterization Project

The inspectors reviewed the characterization of the Alternate Shutdown (ASD) Building. The building was selected as a pilot building for dismantlement. The final survey data and report were reviewed by the inspectors and found to be extensive and sufficient to characterize the ASD Building to be unimpacted.

5.0 Exit Meeting

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on April 12, 2001. The licensee acknowledged the findings presented. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

K. Haas, General Manager
G. Withrow, Engineering, Operations, and Licensing Manager
W. Trubilowicz, Cost, Schedule, Purchasing Manager
K. Pallagi, Radiation Protection & Environmental Services Manager
G. Petitjean, Licensing Supervisor
J. Horon, Project Manager, Engineering
P. Daly, British Nuclear Fuel Limited (BNFL), Project Manager
G. Tulley, Safety Specialist, BNFL

INSPECTION PROCEDURES USED

IP 36801	Organization, Management & Cost Controls
IP 40801	Self Assessment, Auditing, and Corrective Action
IP 60853	On-Site Fabrication and Construction of an ISFSI
IP 62801	Maintenance and Surveillance
IP 83729	Occupational Exposure During Extended Outages
IP 83750	Occupational Radiation Exposure
IP 86750	Solid Radioactive Waste Management and Transportation of Radioactive Materials

ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
ASME	American Society of Mechanical Engineers
BNFL	British Nuclear Fuels Limited
CO	Carbon Monoxide
CR	Condition Report
ISFSI	Interim Spent Fuel Storage Installation
NMC	Nuclear Management Corporation
NPAD	Nuclear Performance Assessment Department
NRC	Nuclear Regulatory Commission
PPE	Personal Protective Equipment
RP&ES	Radiation Protection & Environmental Services
RSRC	Restoration Safety Review Committee
SFP	Spent Fuel Pool

LICENSEE DOCUMENTS REVIEWED

Licensee documents reviewed and utilized during the course of this inspection are specifically identified in the “Report Details” above.