November 7, 2003

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 05000155/2003-005(DNMS)

Dear Mr. Haas:

On October 9, 2003, the NRC completed an inspection at the Big Rock Point Nuclear Plant. The purpose of the inspection was to determine whether decommissioning activities were conducted safely and in accordance with NRC requirements. Specifically, the inspector evaluated decommissioning support activities and radiological safety. At the conclusion of on-site inspections on October 9, 2003, the inspector discussed the inspection findings with you and members of your staff.

This inspection consisted of an examination of decommissioning activities at the Big Rock Point Nuclear Plant as they relate to safety and compliance with the Commission's rules and regulations. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, observations of activities in progress, and interviews with personnel.

Based on the results of this inspection, the NRC did not identify any violations. The decommissioning activities reviewed were being conducted in accordance with applicable regulations and license conditions.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <u>http://www.nrc.gov/reading-rm/adams.html.</u>

K. Haas

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

Sincerely,

/**RA**/

Christopher G. Miller, Chief Decommissioning Branch

Docket No. 05000155 License No. DPR-6

- Enclosure: Inspection Report 05000155/2003-005(DNMS)
- cc w/encl: R. A. Renech, Senior Vice President, Nuclear, Fossil, and Hydro Operations John King, Michigan Public Service Commission L. Shekter Smith, Michigan Department of Environmental Quality Chief, Nuclear Facilities Unit, Michigan Department of Environmental Quality Department of Attorney General (MI) Emergency Management Division, Michigan Department of State Police

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.	05000155
License No.	DPR-06
Report No.	05000155/2003-005(DNMS)
Licensee:	Consumers Energy Company
Facility:	Big Rock Point Nuclear Plant
Location:	10269 U.S. 31 North Charlevoix, MI 49720
Dates:	September 8 through October 9, 2003
Inspector:	Michael LaFranzo, Radiation Specialist
Approved by:	Christopher G. Miller, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Big Rock Point Restoration Project NRC Inspection Report 05000155/2003-005(DNMS)

This routine decommissioning inspection involved review of the licensee's performance related to decommissioning support activities and radiological safety. During this inspection period, major activities reviewed included preparation for and the transportation of the reactor vessel, and radiological surveys related to final surveys of the facility.

Radiological Safety

- The licensee was properly implementing the dose-equalization and as-low-asreasonably-achievable (ALARA) programs within NRC regulatory guidelines during preparation of the reactor vessel for transportation. (Section 1.1)
- No concerns were identified with the package shipment containing the reactor vessel from Charelvoix to Gaylord, Michigan. Areas reviewed by the inspector regarding the transportation and documentation associated with the shipment were in compliance with NRC requirements. (Section 1.2)
- The licensee was performing and documenting radiological surveys as required by NRC regulations. (Section 1.3)

Report Details¹

1.0 Radiological Safety

1.1 Occupational Radiation Exposure (83750 and 40801)

a. Inspection Scope

The inspector evaluated work activities associated with the preparation of the reactor vessel for transportation to determine if worker exposure to radiation was as-low-as-reasonably-achievable (ALARA).

b. Observations and Findings

During the movement of the reactor vessel within containment, the crane that was lifting the reactor vessel failed mechanically, leaving the crane inoperable. The crane failure was the result of the licensee making many small (less than one inch) movements with the crane while attempting to lift the reactor vessel from its concrete cavity. The licensee repaired the crane and resumed the movement of the reactor vessel.

The licensee estimated that the total dose associated with the crane repair was seven person-rem. The licensee implemented its dose equalization program appropriately. The inspector determined by interview with personnel associated with the crane repair that the licensee was using good ALARA practices. However, the dose received from this repair was not initially planned, and increased the licensee's overall annual personnel dose by approximately five percent.

The inspector reviewed the circumstances surrounding the incident regarding the crane failure. Preliminarily, the licensee identified that the crane failure may have been partially caused by the many small movements of the crane which caused certain components to fail. The licensee indicated that small movements with the crane were made because obstructions within the concrete cavity did not allow the reactor vessel to be lifted straight up from its position within the concrete cavity. The inspectors determined that a closer review of crane operating limitations prior to operating the crane with the many small movements needed to free the reactor vessel could have helped to prevent the crane failure. As of the exit meeting, the licensee was continuing to analyze, identify, and implement corrective actions concerning this issue. The inspector reviewed the licensee's activities associated with this event, and did not identify any violations of NRC requirements. The inspectors will review the licensee's final analysis and associated corrective actions during a future inspection. (IFI 05000155/2003005-001)

During the inspection, the inspector observed workers filling the reactor vessel with grout. The licensee filled the reactor vessel with grout to stabilize the reactor vessel for transportation and to reduce external radiation levels. The inspector noted that workers in the area were following the appropriate Radiation Work Permits and implementing good ALARA practices.

¹A list of acronyms used in the report is included at the end to the Report Details.

c. <u>Conclusions</u>

The licensee was properly implementing the dose-equalization and ALARA programs within NRC regulatory guidelines during preparation of the reactor vessel for transportation. The NRC will continue to review the licensee's final analysis of the crane failure during a future inspection.

1.2 Transportation of Radioactive Waste (86750)

a. Inspection Scope

The Inspector evaluated shipment documentation and observed the reactor vessel being transported by truck to the rail head. The inspector also observed the preparations for the reactor vessel to be shipped by rail.

b. Observations and Findings

The inspector observed activities associated with the trailer transport of the package from the plant site in Charelvoix, Michigan, to a rail head in Gaylord, Michigan. The package consisted of the licensee's reactor vessel in a Type B cask. The road trip was approximately 52 miles and took two days to complete. The inspector did not identify any significant difficulties in the road transport of the package. After the package's arrival at Gaylord, Michigan, it was transferred to a rail car. The inspector observed activities related to the movement of the package from the trailer to the rail car. The inspector performed radiation surveys of the package and identified radiation fields were unchanged from radiation levels noted by the licensee prior to the transportation. Radiation levels measured by the licensee and the inspector were within regulatory limits specified for transporting radioactive material.

The inspector reviewed documentation associated with the transportation which included initial characterization, shipping papers, waste manifest forms, and radiological surveys. The inspector noted that all documentation was in compliance with NRC regulations.

c. <u>Conclusions</u>

No concerns were identified with the package shipment containing the reactor vessel from Charelvoix to Gaylord, Michigan. Areas reviewed by the inspector regarding the transportation and documentation associated with the shipment were in compliance with NRC requirements.

1.3 Inspection of Final Surveys at Permanently Shutdown Reactors (83801)

a. Inspection Scope

The inspector reviewed final radiological survey packages and observed radiological survey activities to verify the documentation and the radiological survey implementation were adequate in scope and content to support the remediation and demolition at the site.

b. Observations and Findings

The inspector reviewed six of twelve final radiological survey packages. The radiological surveys were performed in the administration building. The inspector noted that the licensee's radiation survey preparation package and final documentation were complete.

The inspector observed two technicians performing final radiological surveys. Both technicians were relatively new to the licensee's program. The technicians identified issues concerning radiological survey equipment and package preparation by asking appropriate questions and bringing forth appropriate issues to management for resolution. The inspector noted that when issues were brought forward by the technicians, licensee management was responsive to those issues. Examples included licensee management clarifying instructions and providing additional resources to the technicians, and modifying the survey package.

c. Conclusions

The licensee was performing and documenting radiological surveys as required by NRC regulations.

2.0 Exit Meeting

The inspector presented preliminary inspection results to members of licensee management at the conclusion of onsite inspection on September 12, 2003, and October 9, 2003. The licensee acknowledged the findings presented. The licensee did not identify any documents or processes reviewed by the inspector as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

<u>Licensee</u>

- K. Haas, Plant General Manager
- K. Pallagi, Radiation Protection & Environmental Services Manager
- G. Withrow, Engineering, Operations & Licensing Manager

INSPECTION PROCEDURES USED

- IP 40801 Self-Assessment, Audits
- IP 83750 Occupational Radiation Exposure
- IP 83801 Inspection of Final Surveys at Permanently Shutdown Reactors
- IP 86750 Solid Radioactive Waste Management and Transportation

ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u> (IFI 05000155/2003005-001)

<u>Closed</u> None

Discussed None

LICENSEE DOCUMENTS REVIEWED

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

LIST OF ACRONYMS USED

ALARA	As-Low-As-Reasonably-Achievable
DNMS	Division of Nuclear Materials Safety
NRC	Nuclear Regulatory Commission