March 12, 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 05000155/2003-001(DNMS)

Dear Mr. Haas:

On February 21, 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 inspectors evaluated spent fuel safety and radiological safety. At the conclusion of on-site inspections on January 9, and February 21, 2003, the inspectors 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 http://www.nrc.gov/reading-rm/adams.html.

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

Sincerely,

/RA/

Christopher G. Miller
Decommissioning Branch

Docket No. 05000155
License No. DPR-6

Enclosure: Inspection Report 05000155/2003-001(DNMS)

See Attached Distribution

cc w/encl: R. A. Fenech, Senior Vice President,
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.	05000155
License No.	DPR-06
Report No.	05000155/2003-001(DNMS)
Licensee:	Consumers Energy Company
Facility:	Big Rock Point Nuclear Plant
Location:	10269 U.S. 31 North Charlevoix, MI 49720
Dates:	January 6 - February 21, 2003
Inspector:	William Snell, Health Physics Manager
Approved by:	Christopher G. Miller, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Big Rock Point Restoration Project
NRC Inspection Report 05000155/2003-001(DNMS)

This routine decommissioning inspection involved review of the licensee's performance related to spent fuel safety and radiological safety. Overall, the licensee's major decommissioning activities were properly monitored and controlled.

Spent Fuel Safety

- Licensee personnel continued to perform spent fuel pool dry cask loading activities in an efficient and effective manner. (Section 1.1)

- Licensee personnel performed the required channel calibrations on the two area radiation monitors that measure radiation levels in the area of the spent fuel pool (SFP). (Section 1.2)

- Licensee personnel verified containment closure, as required. (Section 1.3)

Radiological Safety

- The corrective actions taken by the licensee in response to the removal of the Annex Building stage and the disposal of the stage in the Waste Management industrial landfill near Waters, Michigan were adequate. No radiological health and safety risk existed as a result of the disposal. (Section 2.1)

- The licensee continued to make acceptable progress in the removal of radioactive waste tanks from the radwaste tank room. Workers were pro-active in maintaining worker doses ALARA [As-Low-As-Reasonably-Achievable] and improving their demolition and decontamination tools and techniques. (Section 2.2)

Report Details[1]

1.0 Spent Fuel Safety

1.1 Fuel Loading (60710)

a. Inspection Scope

The inspectors observed spent fuel pool (SFP) cask loading activities.

b. Observations and Findings

The inspectors observed the upper fuel baskets being inserted into casks 3 and 6, and the movement of fuel bundles within the SFP. Personnel conducting cask loading activities exhibited effective communication and teamwork. Management and staff demonstrated a conscientious and pro-active posture when addressing issues and problems as they arose. As worker proficiency in carrying out tasks had improved and workers continued to be attentive to ALARA (as-low-as-reasonably-achievable), the total dose per canister load cycle for casks 1 through 5 had steadily decreased from a high of 831 milliRem (mRem) for cask 1 to a low of 564 mRem for cask 5.

c. Conclusions

Licensee personnel continued to perform spent fuel pool dry cask loading activities in an efficient and effective manner.

1.2 Spent Fuel Pool Area Radiation Monitors (60801)

a. Inspection Scope

The inspector verified the licensee was demonstrating the operability of the SFP area radiation monitors.

b. Observations and Findings

The Big Rock Point Defueled Technical Specifications required that the two area radiation monitors (ARMs) that measure radiation levels in the area of the SFP be tested for operability once every 31 days when spent fuel is in the SFP, with a maximum allowable time extension of 25 percent. The licensee demonstrated operability by performing a channel calibration as specified in Procedure No. T30-07/RIP-15, "Calibration of Area Monitors," Rev. 23.

The inspectors verified that the licensee had performed these calibrations since the beginning of the cask loading activities in November 2002, by reviewing four RIP-15-1 "Area Radiation Monitor Calibration Data Sheet" data sheets from Procedure No. T30-07/RIP-15. Required calibrations were performed on October 21, 2002, November 25, 2002, December 18, 2002, and January 21, 2003.

[1]NOTE: A list of acronyms used in the report is included at the end of the Report Details.

c. Conclusions

Licensee personnel performed the required channel calibrations on the two area radiation monitors that measure radiation levels in the area of the SFP.

1.3 Containment Closure (60801)

a. Inspection Scope

The inspector verified the licensee was demonstrating containment closure.

b. Observations and Findings

The Big Rock Point Defueled Technical Specifications specified that prior to the commencement of fuel handling activities, containment closure must be verified for all containment penetrations or openings. Containment closure was verified by performing Procedure No. TV-61, "Containment Closure Checklist", Rev. 8.

The inspector discussed containment closure actions with licensee personnel and reviewed documentation to verify that Procedure No. TV-61 was implemented, as required. Procedure No. TV-61 was required to be performed every six months, and was adequately performed during May and October 2002.

c. Conclusions

Licensee personnel verified containment closure as required.

2.0 Radiological Safety

2.1 Annex Building Stage Removal (83750)

a. Inspection Scope

The inspector reviewed the licensee's activities regarding the demolition and disposal of a raised wooden platform (stage) from the Annex Building.

b. Observations and Findings

On July 31, 2002, licensee personnel carried out Work Request No. 12210248, which included the removal of the Annex Building "stage". The stage was a raised wooden platform in the Annex Building which is outside the protected area in a clean (non-radiological) area. Because of its location, no Radiation Work Permit (RWP) was required for this work.

The Annex Building is over 35 years old, and over the years, had been used for activities such as whole body counting, plant personnel showers, public affairs demonstrations, and training. The licensee was aware that 27 years earlier, a test tube containing uranyl acetate in a powder form was dropped on the stage and spilled. (Uranyl acetate is a product of the uranium fuel fabrication process.) Although the stage was in a clean area, because of the knowledge of the uranyl acetate spill, licensee personnel decided to treat the stage as if it was contaminated and ship it to their

radioactive waste contractor in Tennessee for sorting and disposal. The licensee's presumption was that the stage was not radiologically contaminated, but the resources that would be expended to search archived records for survey information to verify that presumption would be greater than the costs of shipping the material to Tennessee.

When the stage demolition work was undertaken on July 31, 2002, the workers failed to adequately read the Work Order and failed to see that the stage was to be sent to Tennessee for disposal. As a result, the workers threw the material into the normal trash dumpster which was subsequently picked up by the waste hauler and dumped in the Waste Management industrial landfill near Waters, Michigan. When the health physics staff became aware of this, they contacted the waste hauler and determined the truck had already delivered the material and that it had been buried. A licensee supervisor decided it would be impossible to locate the waste even if a survey team had been sent to find it.

In response to this incident, the licensee documented what had occurred in Condition Report C-BRP-02-0336. Follow-up actions included a search of archived records, and the licensee located a Health Physics Log Book entry from December 18, 1975. The entry stated that the area was cleaned up where the uranyl acetate was spilled in the Annex Building, and that smears taken where the spill occurred measured less than 50 percent of the reading for background radiation in the area. Additional survey records retrieved from Document Control showed that annual surveys conducted in 1998, 2000, 2001 and 2002 identified no radiological contamination in the Annex Building. Radiation protection (RP) personnel also surveyed the floor area beneath the stage where the uranyl acetate had been spilled, and identified no detectable activity above background.

The inspectors discussed this incident with the work supervisor for the stage removal work. The supervisor indicated that the problem was caused by his failure to read the Work Order carefully, and that he simply missed the instruction as to how the waste was to be disposed of. The licensee implemented additional corrective actions which included convening a supervisor meeting to discuss Condition Report C-BRP-02-0336 and future Construction Work Orders that contained steps for material removal, and adding a signature block for the Construction and Radiation Protection groups to approve the disposal of waste. Existing Work Orders were also reviewed and revised to include the signature block.

Overall, the licensee's response to this issue was acceptable. The documentation identified was sufficient to support the conclusion that the stage had not been radiologically contaminated prior to its removal. The fact that this material was placed in the landfill poses no radiological health and safety risk.

c. Conclusions

The corrective actions taken by the licensee in response to the removal of the Annex Building stage and the disposal of the stage in the Waste Management industrial landfill near Waters, Michigan were adequate. No radiological health and safety risk exists as a result of the disposal.

2.2 Rad Waste Tank Demolition Activities (83750)

a. Inspection Scope

The inspectors reviewed the licensee's activities regarding the removal of radioactive waste tanks from the radwaste tank room.

b. Observations and Findings

The inspectors observed work-in-progress on demolition activities associated with the removal of the resin disposal tank (RDT) and the Concentrator Waste Storage Tank (CWST) from the radwaste tank room. The inspectors observed the removal of a large section of concrete from the ceiling of the radwaste tank room. The concrete was cut using a diamond wire saw, then lifted out and placed directly into a sea-land container. Work activities were well coordinated between work groups with considerable attention given to minimizing both the potential for airborne contamination and the dose to workers.

The inspectors reviewed RP-27-7, "In-Process ALARA Job Review", No. 75, for RWP 2002-3056, dated January 2, 2003. The in–process review summarized the various activities that had taken place since the radwaste tank room work had begun, along with each activity's associated dose and lessons learned. The Job Review stated that the wire cutting did not work as well as expected, and that using an oxy-acetylene torch for cutting proved to be an effective alternative. The intent was to use the diamond wire saw to minimize dose by reducing the time workers needed to be in the tank room. However, the diamond saw failed to meet expectations because of the time it took to cut through the tank and because of mechanical and positioning problems. Licensee personnel countered these problems by improving their hydrolazing of the tank, which reduced dose to the point that oxy-acetylene torch cutting was acceptable. As an example of the effectiveness of hydrolazing, the end bell of the CWST was hydrolazed remotely, which reduced the dose rate from 8 R/hour to 200-300 milliR/hour, with a total whole body dose expenditure of about 4 mrem for the task.

c. Conclusions

The licensee continued to make acceptable progress in the removal of radioactive waste tanks from the radwaste tank room. Workers were pro-active in maintaining worker doses ALARA, and improving their demolition and decontamination tools and techniques.

3.0 Exit Meeting

The inspectors presented preliminary inspection results to members of licensee management at the conclusion of onsite inspections on January 9 and February 21, 2003. 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, Plant General Manager
K. Pallagi, Radiation Protection & Environmental Services Manager
W. Trubilowicz, Dry Fuel Storage Manager
G. Withrow, Engineering, Operations & Licensing Manager
M. Bourassa, Corrective Action Administrator
T. Petrosky, Public Relations
R. McCaleb, Nuclear Performance Assessment

INSPECTION PROCEDURES USED

IP 60801	Spent Fuel Pool Safety
IP 60710	Fuel Handling Activities
IP 83750	Occupational Radiation Exposure

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	None
Closed	None
Discussed	None

LIST OF ACRONYMS USED

ALARA	As-Low-As-Reasonably-Achievable
ARM	Area Radiation Monitor
BRP	Big Rock Point
CWST	Condensate Waste Storage Tank
NRC	Nuclear Regulatory Commission
RDT	Resin Disposal Tank
RP	Radiation Protection
RWP	Radiation Work Permit
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.