

August 22, 2002

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 05000155/2002-004(DNMS)

Dear Mr. Haas:

On August 7, 2002, the NRC completed an inspection at the Big Rock Point Nuclear Plant Restoration Project. The focus of the inspection was on radiological safety. The enclosed report presents the results of the inspection.

No violations of NRC requirements were identified.

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

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

Sincerely,

IRA by B. Jorgensen acting for/

Christopher G. Miller
Decommissioning Branch

Docket No. 05000155
License No. DPR-6

Enclosure: Inspection Report 05000155/2002-004(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No. 05000155
License No. DPR-06

Report No. 05000155/2002-004(DNMS)

Licensee: Consumers Energy Company

Facility: Big Rock Point Nuclear Plant

Location: 10269 U.S. 31 North
Charlevoix, MI 49720

Dates: July 29-August 7, 2002

Inspectors: William Snell, Health Physics Manager
Mike LaFranzo, Radiation Specialist
Bruce Jorgensen, Branch Chief

Approved by: Christopher G. Miller, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Big Rock Point Restoration Project NRC Inspection Report 05000155/2002-004(DNMS)

This routine decommissioning inspection covered radiological safety. Overall, the decommissioning activities inspected were being adequately conducted.

Radiological Safety

- The licensee was implementing the environmental TLD and well water sampling programs in a manner that ensured the adequate monitoring of releases of radioactive material in liquid and gaseous forms to the environment. The contents of the licensee's report, "Environmental Monitoring Assessment Report Period of January 2001 - December 2001" were adequate to demonstrate compliance with NRC regulatory effluent release requirements. (Section 1.1)
- The inspectors determined that: 1) the licensee was adequately handling the relocation of the radioactive waste building; 2) the licensee's activities regarding the installation of radiation detectors for the bulk material release program were progressing adequately; and 3) the licensee was processing, packaging and shipping radioactive materials of a variety of types under a well-developed set of controlling checklists. All regulatory and safety requirements were met for the shipments inspected. (Section 1.2)
- The inspectors identified no concerns with the licensee's efforts to maintain exposures as low as reasonably achievable (ALARA) during the upcoming movement of fuel into dry fuel storage casks. (Section 1.3)

Report Details¹

1.0 Radiological Safety

1.1 Radioactive Waste Treatment, and Effluent and Environmental Monitoring (84750)

a. Scope

The inspectors reviewed the licensee's activities regarding the control of radioactive materials to determine whether the licensee was effectively controlling and monitoring releases of radioactive material in liquid and gaseous forms to the environment.

b. Observations and Findings

The inspectors visually inspected a representative sample of thermoluminescent dosimeter (TLD) monitoring stations and ground water effluent monitoring stations around the site. The inspectors noted that all TLDs were in their appropriate locations and the ground water effluent monitoring stations were undamaged and were providing samples as required for effluent monitoring. In addition, the inspectors interviewed individuals responsible for collecting the above environmental TLDs and well water samples and reviewed the procedures for the collection of the TLDs and well water samples. The inspectors did not identify any concerns regarding the implementation of the procedures nor with the procedures themselves.

The inspectors reviewed the licensee's report, "Environmental Monitoring Assessment Report Period of January 2001 - December 2001." Based on the review, the inspectors determined that during calendar year 2001 the licensee maintained plant effluents within the applicable regulatory limits. The inspectors did not identify any concerns regarding the information contained within the report.

c. Conclusions

The licensee was implementing the environmental TLD and well water sampling programs in a manner that ensured the adequate monitoring of releases of radioactive material in liquid and gaseous forms to the environment. The contents of the licensee's report, "Environmental Monitoring Assessment Report Period of January 2001 - December 2001" were adequate to demonstrate compliance with NRC regulatory effluent release requirements.

1.2 Solid Radwaste Management and Transportation of Radioactive Materials (86750)

a. Scope

The inspectors reviewed licensee activities for properly processing, packaging, storing, and shipping radioactive materials. The inspectors also assessed the potential for problems to occur relating to licensee's practices in processing, packaging, and shipping low level radioactive waste (LLRW) and other radioactive materials for disposal. Specifically, the inspectors reviewed: 1) activities surrounding the relocation of the

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

radioactive waste building; 2) activities to date regarding the installation of radiation detectors that will be used for the release of solid waste from the restricted area; and 3) a representative review of radioactive waste shipments.

b. Observations and Findings

The licensee informed the inspectors that the radioactive waste building was in the process of being decommissioned and replaced with a smaller building at the Big Rock Point site. The concrete footers for the new building were already installed, on the south side of the main parking lot outside the restricted area. The original radioactive waste building was also outside the restricted area. The licensee was on schedule to vacate the old building and transfer radioactive waste to the new building in September 2002. The licensee's goal was to decontaminate and demolish the original waste building by January 2003.

The inspectors reviewed the licensee's plans regarding the relocation of the radioactive waste building. The inspectors determined the new building will have the capacity to store radioactive waste properly. Radiation levels at the new location will not be a cause for concern.

The licensee is continuing to develop plans regarding their bulk material release program. To that end, the licensee had begun work in the area where radiation detectors would be placed to scan vehicles and solid waste material coming out of the restricted area prior to waste disposal. However, the licensee was still in the beginning stages of site development for this project. The inspectors did not identify any regulatory concerns during the inspection related to the activities under way on this project.

The inspectors examined documentation relating to five shipments of radioactive material, as follows:

- Shipment No. S-2097, consisting of exhaust stack sampling filters, sent to a radiological laboratory in Illinois for analyses on June 4, 2002.
- Shipment No. S-2099, consisting of a sludge and a water sample (in a 10-gallon barrel) sent to a laboratory in South Carolina for analyses on June 13, 2002.
- Shipment No. S-2100, consisting of sediment from the discharge canal, sent to the laboratory in Illinois on June 11, 2002
- Shipment No. S-2101, consisting of several boxes of dirty laundry, sent to a licensed cleaning service on June 18, 2002.
- Shipment No. S-2105, consisting of three "B-25" boxes of LLRW sent to a licensed disposal site on July 11, 2002.

None of the shipments involved significant quantities of radioactive material. Shipments from the Big Rock Restoration project had been at a relatively lower level in recent months.

The licensee used a variety of “checklists” to guide and control the processing and packaging of materials. The proper checklists had been chosen in each case, and the documentation packages for each shipment were complete. All mandatory steps were properly documented. Supporting documentation, such as copies of packing slips (invoices), gamma spectroscopic analytical results, and copies of the recipient’s license, were present in the packages as stipulated by the applicable checklist. In addition, the laundry and the “B-25” boxes were each sent as “exclusive use” shipments. Additional documents addressing exclusive use vehicle driver instruction, and an “exit” truck and trailer inspection, were present in these documentation packages.

Survey data was recorded on a “universal” Radwaste Survey Form within each document package, showing each package/shipment complied with applicable radiation limits. The “universal” Radwaste Survey Form specified that dose measurements were to be made on contact and at a distance of two meters, which is correct for exclusive use shipments. Pen-and-ink changes were made for other types of shipments, to specify contact measurements and measurements at one meter.

Supervisory review was documented for each shipment to reflect verification of the acceptability of the paperwork by a supervisor.

c. Conclusions

The inspectors determined that: 1) the licensee was adequately handling the relocation of the radioactive waste building; 2) the licensee’s activities regarding the installation of radiation detectors for the bulk material release program were progressing adequately; and 3) the licensee was processing, packaging and shipping radioactive materials of a variety of types under a well-developed set of controlling checklists. All regulatory and safety requirements were met for the shipments inspected.

1.3 Occupational Radiation Exposure (83750)

a. Scope

The inspectors reviewed the licensee’s efforts to maintain exposures as-low-as-reasonably-achievable (ALARA) during the planned movement of fuel into dry fuel storage casks.

b. Observations and Findings

The inspector met with licensee personnel to discuss their efforts to ensure that dose rates during fuel movements for the dry cask storage campaign would be maintained ALARA. The licensee indicated that they have been working to reduce area dose rates around the spent fuel pool (SFP), which has resulted in a lowering of the average dose rate in the working area over the fuel pool from 5 millirem per hour (mrem/hr) to 1.2 mrem/hr. In addition, the licensee had reviewed the entire movement path for the fuel and casks to identify where radiation streaming could occur, as well as other potential high dose activities, and was proceduralizing actions that will reduce exposures to the extent practicable. These and other efforts have enabled the licensee to reduce the total projected dose for the dry fuel storage project to 5.5 person-Rem from the initial estimate of 14 person-Rem.

The licensee had also set up five cameras, two with pan, tilt and zoom capability, that will allow observers to monitor the cask loading activities from a conference room outside of the plant's radiation controlled area (RCA). This will help keep the number of people in the work areas to a minimum, reduce personnel in the RCA, and reduce the total exposure for the project.

c. Conclusions

The inspectors identified no concerns with the licensee's efforts to maintain exposures as low as reasonably achievable (ALARA) during the upcoming movement of fuel into dry fuel storage casks.

2.0 Exit Meeting

The inspectors presented initial inspection results to members of licensee management at the conclusion of the inspection on August 7, 2002. 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
- C. Cummin, Duratek Radwaste Supervisor

INSPECTION PROCEDURES USED

- IP 83750 Occupational Radiation Exposure
- IP 84750 Radioactive Waste Treatment, and Effluent and Environmental Monitoring
- IP 86750 Solid Radioactive Waste Management and Transportation of Radioactive Materials

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
LLRW	Low Level Radioactive Waste
NRC	Nuclear Regulatory Commission
RCA	Radiation Controlled Area
SFP	Spent Fuel Pool
TLD	Thermoluminescent Dosimeter

LICENSEE DOCUMENTS REVIEWED

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