February 25, 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 05000155/2002-001(DNMS)

Dear Mr. Haas:

On February 7, 2002, the NRC completed an inspection at the Big Rock Point Nuclear Plant Restoration Project. The focus of the inspection was on facilities management and control and spent fuel safety. The enclosed report presents the results of the inspection.

Overall, the reactor decommissioning activities inspected were being performed satisfactorily. 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,

/RA/

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No. 05000155
License No. DPR-6

Enclosure: Inspection Report 05000155/2002-001(DNMS)

See Attached Distribution

DOCUMENT NAME: G:\SEC\BRP2002-001.WPD
To receive a copy of this document, indicate in the box:"C" = Copy without enclosure "**E**"= Copy with enclosure"**N**"= No copy

OFFICE	RIII		RIII		RIII			
NAME	Snell:js		Landsman		Jorgensen			
DATE	02/25/02		02/25/02		02/25/02			

OFFICIAL RECORD COPY

cc w/encls: R. A. Fenech, Senior Vice President,
Nuclear, Fossil, and Hydro Operations
Richard Whale, Michigan Public Service Commission
D. Minnaar, 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

Distribution:
Reading File
PUBLIC IE-01 w/encls
RIII PRR w/encls
M. Masnik, NRR w/encls
D. Wrona, LPM, NRR (e-mail)
J. L. Caldwell, RIII w/encls
C. D. Pederson, RIII w/encls
RIII Enf. Coordinator w/encls

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.	05000155
License No.	DPR-06
Report No:	05000155/2002-001(DNMS)
Licensee:	Consumers Energy Company
Facility:	Big Rock Point Nuclear Plant
Location:	10269 U.S. 31 North Charlevoix, MI 49720
Dates:	December 11- February 7, 2002
Inspectors:	William Snell, Health Physics Manager Ross Landsman, Project Engineer
Approved by:	Bruce L. Jorgensen, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Big Rock Point Restoration Project
NRC Inspection Report 05000155/2002-001(DNMS)

This routine decommissioning inspection covered facilities management and control and spent fuel safety. Overall, the decommissioning activities inspected were properly monitored and controlled.

Facilities Management and Control

- A public meeting was held with Big Rock Point management in the NRC Region III office in Lisle, Illinois to discuss the overall status of the Big Rock Point Restoration Project. The Big Rock Point staff and management appeared to be doing a good job in implementing their Decommissioning Plan in a safe and effective manner. (Section 1.1)

Spent Fuel Safety

- Licensee actions in response to concerns identified in Inspection Report 07200007/2001-004 did not eliminate problems in pouring the concrete casks, as noted by the licensee's non-conformance reports (NCRs). Concrete pouring control capabilities to achieve quality overpacks remains a challenge. (Section 2.1)

- Dry runs of welding and non-destructive examination (NDE) on a mockup, met the applicable codes and standard requirements specified in the Certificate of Compliance (C of C). The licensee must be attentive to their bases for changing procedures. (Section 2.2)

- The preparations for grouting two segments of the prototype overpack indicated a thorough understanding of the procedure and activities that were required. (Section 2.3)

- The load test of the bridge over which the casks will be transported, when they are brought into containment through the equipment hatch, indicated that the bridge could support the loaded cask. (Section 2.4)

Report Details[1]

1.0 Facilities Management and Control

1.1 Organization, Management & Cost Controls (36801)

a. Inspection Scope

A public meeting was held with Big Rock Point management in the NRC Region III office in Lisle, Illinois to discuss the overall status of the Big Rock Point Restoration Project.

b. Observations and Findings

On January 15, 2002, a public meeting was conducted at NRC Region III among Big Rock Point management, NRC Regional management, and the NRC Headquarters Project Management for Big Rock (who participated via teleconference). Two members of the public from the Sargent & Lundy Corporation attended. The purpose of the meeting was for Big Rock Point to brief the NRC on their accomplishments in 2001, and plans and initiatives for the Big Rock Restoration Project in 2002. The licensee provided information on Big Rock Point performance, dry fuel storage, radiation protection, industrial safety, and the Nuclear Performance Assessment Department. The Site General Manager discussed the licensee's vision, safety performance, cost estimates, schedule accomplishments, plans, and challenges. The key challenge in 2002 will be to load the spent fuel into casks for storage on the independent spent fuel storage installation (ISFSI). Handouts from the meeting are attached.

c. Conclusions

The Big Rock Point staff and management demonstrated good command of requirements for implementing their Decommissioning Plan in a safe and effective manner.

2.0 Spent Fuel Safety

2.1 Dry Cask Fabrication (60853)

a. Inspection Scope

This portion of the inspection was conducted at the Palisades Plant site, where mockups of the cask concrete overpacks are being constructed. The inspector evaluated the licensee's actions in response to the issues raised in NRC Inspection Report 07200007/2001-004.

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

b. Observations

Actions to Address Prior Inspection Issues

Dry Fuel Services Instruction, WI-DFS-BRP-01, ”W150 Concrete Cask Instruction,” was revised in sections 12.2, 12.3, and 12.6 by enhancements and clarifications, to address the issues identified in Inspection Report 07200007/2001-004.

Section 12.2 was revised to require Project Controls to perform the pre-job briefs. Three briefs were to be performed: 1) concrete consolidation practices; 2) general concrete placement practices to the crafts; and 3) general concrete placement for everyone involved with the pour, including the testing technicians. The briefs were being conducted to written checklists. These are intended to ensure that all individuals involved with the work are familiar with proper techniques. To further accomplish this, the licensee will be attempting to use the same personnel from previous cask pours because prior troubles had been caused in part by using individuals not familiar with this type of work.

Section 12.3 was revised to specify a minimum of 4 equally-spaced hoppers with flexible elephant trunks for the first few yards of concrete. After that, the elephant trunk on the pumper would be used. Section 12.3 also specified that head pressure from one side should be used to force the concrete under the liner bottom, and around the air inlet assemblies. It further specified that lighting is to be positioned to clearly light the bottom of the pour area. In fact, four lights were attached to the center platform.

Section 12.6 was added to the procedure to detail proper concrete consolidation techniques, including all the requirements from American Concrete Institute (ACI) Publication 309.

First Cask Pour

The licensee generated non-conformance reports (NCRs) from the first three production segments which documented the following items:

- Top Section - voids identified on keyway
- Middle Section - severe honeycomb on keyway
  - exposed rebar on keyway
- Bottom Section - inability to separate from bottom form resulted in severely cracked concrete from the required hydraulic jacking to separate from the form
  - severe honeycomb on air inlets

The licensee documented the cause of these items as continuing improper consolidation. The stated corrective action was to provide more craft training on vibrator use.

Second Cask Pour

The licensee generated an NCR on the second pour that stated additional patching and repairs were required for three general conditions:

- spalling on the bottom surface in the area of the tie rod nut recess
- incomplete concrete fill under the liner bottom plate
- scattered light-to-moderate air voids on the exposed vertical surface and on the sloped surfaces of the male key at the top of the segment

A “hold” was placed on the future placement of concrete until resolution of recurrent conditions adverse to quality. The licensee brought in an expert from Construction Technology Laboratories to provide an independent opinion, to provide input for improving the cask pours, and to make suggestions to reduce the observed defects on the second cask.

c. Conclusions

Licensee actions in response to concerns identified in Inspection Report 07200007/2001-004 did not eliminate problems in pouring the casks, as noted by the licensee’s NCRs. Concrete pouring control capabilities to achieve quality overpacks remains a challenge. Inspections of future concrete pours will ascertain whether the licensee has achieved acceptable results.

2.2 Welding (60853)

a. Inspection Scope

The inspection evaluated the licensees progress and effectiveness in implementing procedures to weld the inner closure plate.

b. Observations and Findings

The inspectors observed dry runs of welding and non-destructive examination (NDE) on a mockup in the West Office Warehouse (WOW) building. The welding was being performed by a contractor to the licensee, PCI Energy Services. The visual examinations were being performed by Jackson Laboratory Services, a Consumers Power Company Group. The welding and NDE were to be performed to the American Society of Mechanical Engineers (ASME) Section III - NB, 1995 edition standards.

The inspectors reviewed the following pertinent procedures:

Procedure No. DFS-CLOS-2, Revision Draft, “Weld Inner Closure Plate and Vent/Drain Port Bodies”;

Procedure No. DFS-CLOS-4, Revision Draft, “Weld Vent and Drain Port Covers”; and

Procedure No. DFS-CLOS-5, Revision Draft, “Weld Outer Closure Plate”.

These procedures provided the steps to weld the pieces together. Included in these procedures were welding specifications, PCI 8-NM-GTAW/SMAW, Revision 6, and PCI 8-MC-GTAW, Revision 4. The specifications included the procedure qualification records (PQRs) for the welding procedures. Also reviewed were weld rod control procedure D4.2.1.2, Revision 0, "Control of Weld Filler Material"; certified material test reports for the weld wire; and welder qualifications records.

The inspectors also reviewed:

NDE Procedures, NDT-PT-09, Revision 0, "Liquid Penetrant Examination - Standard Temperature";

NDE-VT-08, Revision 0, "Visual Examination";

Qualification records for the NDE personnel;

Liquid penetrant material certifications; and

Acceptance criteria for the welds specified in ASME Section III, NB-5350, and AWS D.1.1.

The inspectors observed various portions of the welding and NDE on the mockup. The PCI welders and the Consumers Power Quality Control personnel demonstrated skilled practices and were very professional. However, prior to initial welding, the inspectors raised a question about the size of the gap between the inner closure plate and the cask body, since it appeared to be larger than the procedure-specified maximum of 0.090 inches. The licensee indicated the 0.090 inch value was based on the gap tolerance specified for the construction of the casks, which was not necessarily a limit for the welders. Recognizing this was a dry run using a draft procedure, the welding engineer struck out the 0.090 and replaced it with 0.125 inches. The inspectors questioned the basis for the change to 0.125 inches, noting that the PQR was for up to a 3/16 inch gap. The welding engineer then struck out the 0.125 and replaced it with 3/16 inch. At that time, QA/QC wrote a condition report to document what had occurred and to ensure a further review of the gap width.

c. Conclusions

The welding and NDE met the applicable codes and standard requirements specified in the Certificate of Compliance. The licensee must be attentive to their bases for changing procedures.

2.3 Overpack Segment Cask Grating (60853)

a. Inspection Scope

The inspectors evaluated the validation and qualification of the grout injection process.

b. Observations and Findings

Each overpack cask is made in three segments which have to be grouted together. The purpose of the grout is to provide a radiological barrier for the cask joints and to serve as a uniform transmitter of the tensioning force holding the three segments together.

The inspectors observed preparations for regrouting two segments of the prototype overpack. This was the second attempt to perfect the grout injection process before attempting to grout a production cask. The licensee appeared to be ready to grout the segment when a safety concern was brought to the attention of management: if something should happen to personnel inside of the overpack, there was no way to get them out. Work was stopped until the issue was resolved by building scaffolding up to and over the cask.

Safety concerns were further reinforced by the team. Other problems that occurred were quickly brought to the attention of management. Good communication between all involved personnel was evident.

c. Conclusions

The preparations for prototype grouting indicated a thorough understanding of the procedure and activities that were required.

2.4 Air Pallet Bridge Test (60853)

a. Inspection Scope

The inspection evaluated the testing performed to ensure that the bridge could safely support the cask.

b. Observations and Findings

The inspectors observed the licensee's load test of the bridge over which the casks would be transported when they are brought into containment through the equipment hatch. Procedure WR 123048-01 required the test weight to be between 340,500 pounds and 360,000 pounds, but the exact weight of the test weights wasn't known. The following day, the actual weight was found to be 344,180 pounds.

There was no generally-recognized standard for this test. The inspectors questioned the amount of weight picked for the test, recognizing that tests on similar structures (crane bridges) are performed at 125 percent of maximum anticipated load. The loaded cask and overpack are expected to weigh 340,500 pounds; therefore, the test was only slightly more than the maximum load. The licensee indicated that the testing criteria were intended only to ensure the weight of the cask could be supported. The actual moving of the test load was performed well.

c. Conclusions

The test indicated that the bridge could support the loaded cask.

3.0 Exit Meeting

The inspectors presented initial inspection results to members of licensee management at the conclusion of the inspection on February 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
G. Petitjean, Licensing Supervisor
W. Trubilowicz, Dry Fuel Storage Manager
G. Withrow, Engineering, Operations & Licensing Manager

INSPECTION PROCEDURES USED

IP 36801	Organization, Management & Cost Controls
IP 60853	On-Site Fabrication and Construction of an ISFSI

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened None

Closed None

Discussed None

LIST OF ACRONYMS USED

ACI	American Concrete Institute
ASME	American Society of Mechanical Engineers
AWS	American Welding Society
CAB	Citizens Advisory Board
C of C	Certificate of Compliance
CY	Calendar Year
ISFSI	Independent Spent Fuel Storage Installation
MIP	Master Inspection Plan
NCR	Non-conformance Report
NDE	Non-destructive examination
NRC	Nuclear Regulatory Commission
PQR	Procedure Qualification Record
RP	Radiation Protection Technicians
RSRC	Restoration Safety Review Committee
WOW	West Office Warehouse

LICENSEE DOCUMENTS REVIEWED

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