U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Inspection No.	05000320/2012009
Docket No.	05000320
License No.	DPR-73
Licensee:	GPU Nuclear, Inc. (GPUN)
Address:	341 White Pond Drive; Akron, OH 44320
Locations Inspected:	Three Mile Island Station, Unit 2 (TMI-2)
Inspection Dates:	April 16-18, 2012

Inspector: Laurie A. Kauffman
Health Physicist
Decommissioning Branch
Division of Nuclear Materials Safety

Approved By: Marc S. Ferdas, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

GPU Nuclear, Inc. (GPUN)
Three Mile Island Station, Unit 2 (TMI-2)
NRC Inspection Report No. 05000320/2012009

A routine announced safety inspection was conducted between April 16 and 18, 2012, by a Region I inspector at Three Mile Island Station, Unit 2 (TMI-2). The inspection included a review of operations and management oversight, maintenance, corrective action program implementation, and plant support activities while in Post-Defueling Monitored Storage (PDMS) status. The inspection consisted of observations by the inspector, interviews with the FirstEnergy Corporation (FirstEnergy)/GPUN (FirstEnergy/GPUN) and Exelon Generating Company (Exelon) personnel, and a review of procedures and records. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

There are currently no ongoing decommissioning activities being conducted at TMI-2. Based on the results of this inspection, no findings of safety significance were identified.

REPORT DETAILS

1.0 Background

GPUN retains the license for TMI-2 and maintains the facility. GPUN is a wholly-owned subsidiary of FirstEnergy. As part of the sale of TMI-2, GPUN entered into an agreement with AmerGen (now Exelon) to conduct services for TMI-2. Under this agreement, Exelon provides all services, materials, and equipment required to maintain TMI-2 in Post-Defueling Monitored Storage (PDMS) status. Services provided by Exelon include maintenance, surveillance testing (ST), and implementation of the activities required in the Safety Analysis Report (SAR), Technical Specifications (TS), and the GPUN PDMS Quality Assurance (QA) Plan (PDMS QA Plan).

In December 1993, TMI-2 received a possession-only license from the NRC to enter PDMS. Currently, TMI-2 is in long-term monitored storage. GPUN plans to actively decommission TMI-2 in parallel with the decommissioning of the Three Mile Island, Unit 1 (TMI-1), after that unit has been permanently shutdown. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

2.0 Post-Defueling Monitored Storage Performance and Status Review

a. Inspection Scope (Inspection Procedures (IPs) 36801, 37801, 40801, 62801, 71801, 83750, 84750, 86750)

A routine announced safety inspection was conducted between April 16 and 18, 2012 at TMI-2. The inspector reviewed the PDMS program as outlined in the PDMS SAR and TS to assess the adequacy of management oversight of PDMS responsibilities for TMI-2. Specifically, the inspector evaluated the recent decommissioning management and staff changes to determine the effectiveness of the TMI-2 management oversight of PDMS activities; discussed any design changes or modifications since the previous inspection; and assessed the material condition of TMI-2 facilities during plant tours of the containment building, the auxiliary building, the radioactive waste building, and the fuel handling building.

The inspector reviewed PDMS activities related to the safe storage of radioactive material and the implementation of primary containment isolation requirements, as described in TS 3/4.1, “Containment Systems.” The inspection included a plant walk-down and observations of the annual reactor building entry ST. The inspector also reviewed the following activities associated with the reactor building ST: radiological surveys; air sampling; exchanging and analyzing the reactor building breather (passive air flow diaphragm); and monitoring and sampling radioactive gaseous effluent through the reactor building purge exhaust.

The inspector reviewed activities and documentation associated with the following PDMS programs: occupational exposure, radioactive effluent control, and site radiological environmental monitoring program (REMP). The inspector reviewed radioactive gaseous

effluent release permits, the annual REMP report, and the annual effluent report, which included a summary of the radioactive waste management and transportation programs.

The inspector also reviewed corrective action program (CAP) issue reports (IRs) and action reports (ARs) associated with TMI-2 to determine if issues were being properly identified and evaluated, and if corrective actions were appropriately prioritized in the CAP.

b. Observations and Findings

The inspector noted several personnel changes within FirstEnergy/GPUN and Exelon organizations and confirmed that the staff effectively implemented the PDMS activities. The inspector confirmed that no design changes, or plant modifications were made since the previous inspection. The inspector verified that the maintenance and surveillance program for selected systems and components had been conducted in accordance with the TS requirements and established procedures. The inspector also confirmed that no dismantlement or decommissioning activities were performed since the previous inspection. The annual radiological effluent and radiological environmental monitoring reports demonstrated that all calculated doses were well below regulatory dose criteria of 10 CFR 50, Appendix I. The inspector determined that FirstEnergy/GPUN and Exelon did not generate radioactive waste from the TMI-2 facility and therefore, did not ship radioactive waste for offsite disposal.

The inspector observed the reactor building entry ST. The ST consisted of visual inspections for water intrusion; as well as, the structural integrity and material condition of structures and components in containment. The results of the ST indicated that no significant water intrusion was evident in containment and that the material condition of components remained unchanged since the previous ST.

The inspector identified that the “TMI-2 Biennial 10 CFR 50.59 and PDMS SAR Report” was not submitted to the NRC within 24 months from their last submittal, as required by TS 6.8.1.4. The previous report was submitted to the NRC on February 15, 2010. The biennial report summarizes the PDMS SAR changes and changes, tests, or experiments as defined in 10 CFR 50.59 during the years 2010 and 2011. The required PDMS SAR update was submitted to the NRC August 24, 2011. The inspector determined that there were no known changes, tests or experiments as defined in 10 CFR 50.59 during 2010 and 2011. Exelon entered this issue into the CAP under IR 01355641; and on April 30, 2012, submitted the required report to the NRC. The inspector determined that this was a violation of TS 6.8.1.4, but constituted a violation of minor significance that is not subject to formal enforcement action per the NRC Enforcement Policy.

The inspector also reviewed IR 01268248, which documents that the predicted water level during a flood event could be higher than described in the TMI-2 PDMS SAR. This issue was identified as a result of evaluations performed on TMI-1. The inspector confirmed that plant upgrades, involving repair to penetration seals and flood gate modifications were being performed. These actions should help to mitigate potential flood impacts by maintaining contamination within the existing boundaries. These activities are being tracked under AR 2285078.

The inspector determined that issues were entered into the CAP, and prioritized and evaluated commensurate with their safety significance. Corrective actions were implemented to address identified issues and were being tracked to closure using the CAP.

c. Conclusions

There are currently no ongoing decommissioning activities being conducted at TMI-2. No findings of safety significance were identified.

3.0 Exit Meeting Summary

On April 18, 2012, the inspector presented the inspection results to Mr. Michael Casey, Responsible Engineer and other members of the FirstEnergy/GPUN organization, and members of the Exelon management and staff. The inspector confirmed that proprietary information was not removed from the site.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Atherholt, Site Regulatory Assurance Manager, Exelon
J. Boyd, PDMS Supervisor, Exelon Generation Company LLC
W. Carsky, Site Engineering Director, Exelon
M. Casey, GPUN Responsible Engineer, TMI-2, FirstEnergy
D. Divittore, Radiation Protection Manager, Exelon
M. Fitzwater, Regulatory Assurance
S. Fuhrman, Work Management/PDMS Manager, Exelon
G. Gillespie, FirstEnergy/GPUN, Chemistry
J. Grove, Regulatory Assurance, Exelon
P. Handy, Radiation Protection/ALARA Specialist, Exelon
C. Incorvati, Maintenance Manager, Exelon
D. Knaby, Radiation Protection Technician, Exelon
R. Libra, Site VP, Exelon Generation Company LLC
R. Maylish, FirstEnergy/GPUN, Chemistry
M. Newcomer, Plant Manager, Exelon
T. Orth, Chemistry/Environmental/Radioactive Waste, Exelon
J. Popielarski, Work Management Director, Exelon
E. Schmeichel, NOS Lead /Acting Manager
D. Smith, Consultant, Shaw
L. Weber, Environmental Chemist, Chemistry/Environmental/Radioactive Waste, Exelon

ITEMS OPEN, CLOSED, AND DISCUSSED

None

PARTIAL LIST OF DOCUMENTS REVIEWED

Technical Specifications for PDMS - Amendment 63 for License 50-320 issued May 1, 2009
Update 9, Post Defueling Monitored Storage Safety Analysis Report, dated August 24, 2011
Fleet Oversight Audit Report: TMI-C-11-04-28 dated April 2011
TMI-2 Biennial 10 CFR 50.59 and PDMS SAR Report, dated February 15, 2010
PDMS Monthly Update Reports (July 2011 – February 2012)
White Paper – TMI-2 RB Entry Summary
TMI-2 collective exposure for 2010 and 2011
ALARA Plan (Plan Number: 12-003; Work Orders: R2181418-01; R2195621-01; R2181712-09)
Radiation Work Permits 00203 and 00211
Combined 2010 Annual Radioactive Effluent Release Report dated April 27, 2010
2010 Annual Radiological Environmental Operating Report
Radiological Environmental Monitoring Program analytical results (January 2011-February 2012)
2010 Annual Radioactive Effluent Release Report
Radioactive Effluent Control Program analytical results (January 2011-February 2012)
FENOC Company Nuclear Review Board, Three Mile Island Nuclear Generating Station Unit 2 Meeting Minutes, dated May 25, 2011
FENOC Company Nuclear Review Board, Three Mile Island Nuclear Generating Station Unit 2 Meeting Minutes, Revision 1, dated November 10, 2011

Procedures:
CY-TM-170-300, Revision 2, Offsite Dose Calculation Manual
OP-2TM-2244-201, Revision 0, Verification of TMI-2 Containment Isolation
RP-AA-401, Revision 13, Operational ALARA Planning and Controls
RP-AA-401-1002, Revision 2, Radiological Risk Management
RP-AA-460, Revision 21, Controls for High and Locked High Radiation Areas
RP-AA-460-001, Revision 2, Controls for Very High Radiation Areas
RP-AA-460-002, Revision 0, Additional High Radiation Exposure Control
RP-TM-220-1002, Revision 1, Special Bioassay Program for Transuranic Areas of TMI-2
2104-1A, Revision 8, Reactor Building Entry
2104-1B, Revision 13, TMI-2 Reactor Building Purge
2104-40C, Revision 1, TMI-2 Turbine Building Sump Transfer to the IWTS
2104-40F, Revision 2, TMI-2 Tendon Access Gallery Sump Transfer to IWTS
2301-1, Revision 21, PDMS Daily Checks
2301-4.3, Revision 5, TMI-2 Reactor Building (Containment) PDMS Radiological Surveys
2301-4.7, Revision 19, TMI-2 Vent Sampling (weekly and monthly composite samples)
2301-4.7D, Revision 9, TMI-2 Sampling and Analysis of the Reactor Building Breather System
2303-4.15A, Revision 12, PDMS RMS (Victoreen) Functional Test
2303-5.10, Revision 6, TMI-2 Reactor Building Purge Exhaust Filter Ops. Check
6610-ADM-4250.14, Revision 5, Releasing Radioactive Gaseous Effluents – TMI-2 Reactor Building Purges

Issue Reports:
IR 1260877; IR 1268248; IR 01355641

LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
AR	Action Report
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CNRB	Company Nuclear Review Board
FENOC	FirstEnergy Nuclear Operating Company
FirstEnergy	FirstEnergy Corp.
GPUN	GPU Nuclear, Inc.
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Issue Report
NOS	Nuclear Oversight
NRC	Nuclear Regulatory Commission
PDMS	Post-Defueling Monitored Storage
PM	Preventive Maintenance
PSR	Permanently Shutdown Reactor
QA	Quality Assurance
QA Plan	Quality Assurance Plan
REMP	Radiological Environmental Monitoring Program
RMS	Radiation Monitoring System
SAR	Safety Analysis Report
ST	Surveillance Test
TMI-1	Three Mile Island Station, Unit 1
TMI-2	Three Mile Island Station, Unit 2
TS	Technical Specifications