



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BLVD., SUITE 100  
KING OF PRUSSIA, PA 19406-2713

February 4, 2020

Trevor L. Orth  
Site Decommissioning Director  
Exelon Nuclear  
Three Mile Island Unit 1  
2625 River Road  
Middletown, PA 17057

SUBJECT: NRC INSPECTION REPORT NO. 05000289/2019010, EXELON GENERATION  
CO., LLC, THREE MILE ISLAND UNIT 1, MIDDLETOWN, PA

Dear Mr. Orth:

On October 1, 2019 to December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an on-site inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shut down Three Mile Island Unit 1, (TMI-1). The inspectors examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of observations by the inspectors, interviews with personnel, and a review of procedures and records. The results of the inspection were discussed with you and other members of the TMI-1 staff on January 15, 2020, and are described in the enclosed report. No findings of safety significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure(s), and your response, if any, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Current NRC regulations and guidance are included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select Radioactive Waste; Decommissioning of Nuclear Facilities; then Regulations, Guidance and Communications. The current Enforcement Policy is included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select About NRC, Organizations & Functions; Office of Enforcement; Enforcement documents; then Enforcement Policy (Under 'Related Information'). You may also obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-866-512-1800. The GPO is open from 8:00 a.m. to 5:30 p.m. EST, Monday through Friday (except Federal holidays).

T. Orth

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No reply to this letter is required. Please contact Steve Hammann, at 610-337-5399, if you have any questions regarding this matter.

Sincerely,

*/RA/*

Anthony M. Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor HP  
Branch  
Division of Nuclear Materials Safety

Docket No.: 05000289

License No.: DPR-50

Enclosure:

Inspection Report 05000289/2019010

cc w/ encl: Distribution via ListServ

NRC INSPECTION REPORT NO. 05000289/2019010, EXELON GENERATION CO., LLC  
 THREE MILE ISLAND UNIT 1, MIDDLETOWN, PENNSYLVANIA DATED February 4, 2020.

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U.S. NUCLEAR REGULATORY COMMISSION  
Region 1

Inspection Report

Inspection No. 05000289/2019010  
Docket Number(s): 05000289  
License Number(s): DPR-50  
Licensee: Exelon Generation Co., LLC (Exelon)  
Facility: Three Mile Island, Unit 1 (TMI-1)  
Location: Middletown, PA 17057  
Inspection Dates: October 01, 2019 to December 31, 2019  
Inspectors: Zack Hollcraft, Senior Resident Inspector  
Project Branch 5  
Division of Reactor Projects, Region 1  
  
Stephen Hammann, Senior Health Physicist  
Decommissioning, ISFSI, and Reactor HP Branch  
Division of Nuclear Materials Safety, Region I  
  
Approved By: Anthony Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor HP Branch  
Division of Nuclear Materials Safety, Region I

## **EXECUTIVE SUMMARY**

Exelon Generation Co., LLC  
Three Mile Island Unit 1  
NRC Inspection Report No. 05000289/2019010

An announced TMI-1 decommissioning on-site inspection was performed October 1, 2019 to December 31, 2019. The inspection included a review of organization and management oversight, corrective action program (CAP), spent fuel pool (SFP) safety, and maintenance and surveillance. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. 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."

Based on the results of this inspection, no findings of safety significance were identified.

## 1.0 Background

On September 26, 2019, Exelon sent a letter [Agency Documentation and Management System (ADAMS) Accession Number ML19269E480] to the NRC certifying the permanent cessation of activities and certifying that the fuel had been permanently removed from the reactor. This met the requirements of 10 Code of Federal Regulations (CFR) 50.82(a)(1)(i) and 50.82(a)(1)(ii). TMI-1 is currently in the Post-Operation Transition phase of decommissioning as described in IMC 2561.

## 2.0 Post-Operation Transition Performance and Status Review

### a. Inspection Scope [Inspection Procedures (IPs) 36801, 40801, 60801, 62801]

The inspectors conducted document reviews, attended management and personnel meetings, and interviewed plant personnel to determine if regulatory requirements were properly implemented with respect to the site organization, staffing and staff qualifications, including certified fuel handler (CFH) and employee training programs. The inspectors reviewed procedures and processes to evaluate Exelon's ability to resolve employee safety concerns, disseminate safety information and effectively resolve identified problems. The inspectors reviewed Exelon's decommissioning activities to determine if they were performed in a manner consistent with the Post Shutdown Decommissioning Activities Report (PSDAR). The inspectors also reviewed aspects of the dry fuel storage project and its progress.

The inspectors reviewed documents and interviewed TMI-1 personnel to determine if Exelon performed audits and self-assessments, and ensured issues were identified and corrected in accordance with the site's CAP. The inspectors reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, if follow-up evaluations were of sufficient quality, and if Exelon assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue.

The inspectors reviewed Exelon's programs for the safe wet storage of spent fuel. The inspectors performed a walk-down of the SFP and associated support systems to assess material condition, configuration control, and system operation. The inspectors toured the control room and interviewed CFHs to verify SFP system instrumentation and alarms, and leakage detection monitoring was adequate to assure the safe storage of spent fuel. The inspectors interviewed employees and reviewed logs in order to verify SFP chemistry parameters were within the limits of Exelon's license commitments.

The inspectors performed walkdowns of key safety systems, structures and components (SSCs) important to the defueled condition of the plant. During the walk-downs, the inspectors evaluated housekeeping and the material condition of the SSCs and assessed area radiological conditions and radiological access controls, including posting and labeling. The inspectors also met with TMI-1 supervisors and discussed staffing levels and the current maintenance workload. The inspectors reviewed the backlog of maintenance work to assess the age and prioritization of the items.

b. Observations and Findings

The inspectors verified that management oversight was adequate for the Post-Operation Transition phase of decommissioning and that the decommissioning organization was appropriately implemented upon cessation of operations. The inspectors determined that training programs had been appropriately implemented and workers were able to check their training qualifications via computerized system.

The inspectors determined that issues had been identified and entered into the CAP and evaluated commensurate with their safety significance. Also, the Employee Concerns Program was appropriately implemented onsite and employees were aware that it is an avenue for which to report issues. The inspectors verified audits had been performed by qualified individuals independent of the organization being audited and quality assurance oversight of major activities was being performed.

The inspectors determined that Exelon was safely storing spent fuel in wet storage. The inspectors verified SFP chemistry and cleanliness controls were being adequately implemented. The inspectors verified surveillance requirements for water level and temperature of the SFP were adequate and procedures provided guidance to restore SFP water level if required. The inspectors also verified the CFH rounds were adequate to satisfy the associated technical specification requirements for the SFP.

The inspectors verified that the maintenance and surveillance program for systems and components had been conducted in accordance with the technical specifications requirements and established procedures. The inspectors noted during the plant walk-downs that housekeeping and plant material condition standards were being maintained. The inspectors determined that workers followed work plans, surveillance procedures and industrial safety protocols and were aware of job controls specified in work instructions. The inspectors determined that the maintenance backlog had been reviewed by site management on a regular basis.

**3.0 Exit Meeting Summary**

On, January 15, 2020, the inspectors presented the inspection results to Mr. Trevor Orth, Site Decommissioning Director, and other members of Exelon's staff. The inspectors verified that no proprietary information was retained or documented in this report.

**PARTIAL LIST OF PERSONS CONTACTED**

T. Orth, Site Decommissioning Director  
P. Bennett, Engineering Manager  
B. Brady, Licensing and Regulatory Affairs  
R. Holmes, Radiation Protection Manager  
D. Lewis, Security Manager  
M. Powers, Maintenance Manager  
J. Valent, Operations Manager

**ITEMS OPEN, CLOSED, AND DISCUSSED**

None

**LIST OF DOCUMENTS REVIEWED**

**Procedures**

1104-6, Spent Fuel Cooling System, Revision 49  
1301-4.15, Weekly Spent Fuel Pool Tritium Sampling, Revision 12  
1301-5.7, Spent Fuel Pool Boron Concentration, Revision 17  
CC-AA-101, Engineering Change Requests, Revision 5  
EI-AA-101, Employee Concerns Program, Revision 11  
PI-DC-125, Decommissioning Corrective Action Program (D-CAP) Procedure, Revision 1  
TQ-DC-150, Certified Fuel Handler Training Program, Revision 2  
WC-DC-100, Decommissioning Work Control Process, Revision 1

**Corrective Action Documents**

04283871      04298856      04301241      04304565      04305534

**LIST OF ACRONYMS USED**

ADAMS	Agency Documentation and Management System
CAP	Corrective Action Program
CFH	Certified Fuel Handler
EXELON	Exelon Generation Co., LLC
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
SFP	Spent Fuel Pool
SSC	Systems, Structures, and Components
TMI-1	Three Mile Island, Unit 1