



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PA 19406-2713

April 30, 2020

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

SUBJECT: NRC INSPECTION REPORT NO. 05000289/2020001, EXELON GENERATION CO., LLC, THREE MILE ISLAND NUCLEAR STATION, UNIT 1

Dear Mr. Orth:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed its quarterly inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shutdown Three Mile Island Nuclear Station, Unit 1 (TMI Unit 1). An on-site inspection was performed February 10-12, 2020. Additional inspection activities (in office reviews) were conducted remotely as a consequence of the COVID-19 public health emergency (PHE) during the inspection period. The inspector 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 plant walkdowns by the inspector, 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 Unit 1 staff on April 2, 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, 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 Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor Health  
Physics Branch  
Division of Nuclear Materials Safety

Docket No. 05000289

License No. DPR-50

Enclosure: Inspection Report 05000289/2020001

cc w/encl: Distribution via ListServ

NRC INSPECTION REPORT NO. 05000289/2020001, EXELON GENERATION CO., LLC,  
 THREE MILE ISLAND NUCLEAR STATION, UNIT 1, MIDDLETOWN, PENNSYLVANIA  
 DATED APRIL 30, 2020

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION I

INSPECTION REPORT

Inspection No. 05000289/2020001  
Docket No. 05000289  
License No. DPR-50  
Licensee: Exelon Generation Co., LLC (Exelon)  
Facility: Three Mile Island Nuclear Station, Unit 1 (TMI Unit 1)  
Location: Middletown, PA 17057  
Inspection Dates: January 1, 2020 – March 31, 2020  
Inspector: Stephen Hammann, Senior Health Physicist  
Decommissioning, ISFSI, and Reactor Health Physics Branch  
Division of Nuclear Materials Safety, Region I  
Approved By: Anthony Dimitriadis, Chief  
Decommissioning, ISFSI, and Reactor Health Physics Branch  
Division of Nuclear Materials Safety, Region I

## **EXECUTIVE SUMMARY**

Exelon Generation Co., LLC  
Three Mile Island Nuclear Station, Unit 1  
NRC Inspection Report No. 05000289/2020001

An announced quarterly inspection at TMI Unit 1 was completed on March 31, 2020. An on-site inspection was performed February 10-12, 2020. Additional inspection activities were conducted remotely during the inspection period as a consequence of the COVID-19 public health emergency (PHE). The inspection included a review of plant modifications, spent fuel pool (SFP) safety, and decommissioning performance and status. The inspection consisted of plant walkdowns by the inspector, interviews with site personnel, and a review of procedures and records. The NRC's program for overseeing the safe operation of a shutdown 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.

## **REPORT DETAILS**

### **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 permanent removal of fuel 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). On October 1, 2019, the NRC notified Exelon that the Operating Reactor Assessment Program would terminate and that implementation of the Decommissioning Power Reactor Inspection Program would begin (ADAMS Accession No. ML19274B163). TMI Unit 1 is currently in the Post-Operation Transition phase of decommissioning with fuel in the spent fuel pool as described in IMC 2561.

### **2.0 Post-Operation Transition Performance and Status Review**

#### **a. Inspection Scope [Inspection Procedures (IPs) 37801, 60801, 71801]**

The inspector conducted document reviews and interviews with plant personnel to determine if Exelon's procedures and processes conformed with the regulations and guidance associated with 10 CFR 50.59. The inspector also reviewed Exelon's 50.59 review process that is used to determine if a 10 CFR 50.59 evaluation was needed and reviewed a sampling of 10 CFR 50.59 screenings. The inspector reviewed the qualification and training for 10 CFR 50.59 screeners and evaluators and reviewed meeting minutes for the last Safety Review Committee meeting.

The inspector reviewed Exelon's programs for the safe wet storage of spent fuel. The inspector performed a walkdown of the SFP and associated support systems to assess material condition, configuration control, and system operation. The inspector toured the control room and interviewed certified fuel handlers (CFHs) to verify SFP system instrumentation, alarms and leakage detection monitoring is adequate to assure the safe storage of spent fuel. The inspector interviewed employees and reviewed SFP chemistry sample analysis that Exelon had performed between January 2, 2020 and February 5, 2020 in order to verify chemistry parameters were within the limits of Exelon's license commitments.

The inspector performed a walkdown of the plant and evaluated housekeeping and assessed area radiological conditions and radiological access controls, including posting and labeling. The inspector attended management meetings and plant status meetings to ascertain the level of management involvement and to assess management oversight of the site's transition to decommissioning status. The inspector conducted document reviews and interviewed plant personnel to determine if regulatory requirements were properly implemented with respect to the site organization, staffing and staff qualifications, including CFH and employee training programs. The inspector also interviewed staff regarding plans for placing the site in long term dormancy and reviewed the decommissioning schedule and activities to determine if they were consistent with the post shutdown decommissioning activities report (PSDAR).

b. Observations and Findings

The inspector determined that 10 CFR 50.59 screenings were adequately performed and that Exelon had trained and qualified individuals to perform the screenings and evaluations. The inspector determined that no changes or modifications under 10 CFR 50.59 were made in the past year.

The inspector determined that Exelon was safely storing spent fuel in wet storage. The inspector verified SFP chemistry and cleanliness controls had been adequately implemented. The inspector 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 inspector also verified the CFH rounds were adequate to satisfy the associated technical specification requirements for the SFP.

The inspector verified regulatory requirements were properly implemented with respect to the site organization, staffing and staff qualifications. The inspector also noted that staffing reviews were continuously being performed by Exelon to ensure that adequate staffing levels were being maintained to support plant activities. The inspector verified the main decommissioning activities were system abandonments and plant modifications preparing the site for dormancy. The inspector determined the activities were performed safely and in accordance with work plans and plant procedures. The inspector verified the activities and schedule were consistent with license requirements and the site PSDAR.

c. Conclusions

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

**3.0 Exit Meeting Summary**

On April 2, 2020, the inspector presented the inspection results to Mr. Trevor Orth, Site Decommissioning Director, and other members of Exelon staff. The inspector verified that no proprietary information was retained or documented in this report.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

T. Orth, Site Decommissioning Director  
P. Bennett, Engineering Manager  
B. Brady, Licensing and Regulatory Affairs  
E. Carreras, EP Manager  
R. Holmes, Radiation Protection Manager  
D. Lewis, Site Security Manager  
S. Minnick, ISFSI Project  
J. Piazza, Senior Decommissioning Project Manager  
M. Powers, Maintenance Manager  
J. Valent, Operations Manager  
A. Zeiss, CAP Manager

### State of Pennsylvania

S. Martin, DEP/BRP

## **ITEMS OPEN, CLOSED, AND DISCUSSED**

None

## **LIST OF DOCUMENTS REVIEWED**

### Assignment Reports

AR- 2020 – 04283871, 04294031, 04301241, 04305534, 04316722

### Procedures and Programs

1104-29C, Rev. 37, Spent Fuel Cleanup Processes  
DC-AA-300, Rev. 4, Decommissioning Transition Planning  
DC-AA-300-1005, Rev. 4, Decommissioning Transition – Scoping and Screening Process  
DC-AA-420, Rev. 0, Abandoned Equipment During Decommissioning  
LS-AA-104, Rev. 12, Exelon 50.59 Review Process  
LS-AA-104-1006, Rev. 5, Exelon 50.59 Training and Qualification  
LS-DC-106, Rev. 0, Safety Review Committee  
OP-AA-109-101, Rev. 14, Personnel and Equipment Tagout Process  
TQ-DC-105, Rev. 0, Training and Qualification at a Decommissioning Facility  
TQ-DC-150, Rev. 2, Certified Fuel Handler Training Program

### Miscellaneous

50.59 Screenings, Activity/Document Numbers -1301 5.7, EC 628963 TMI-D-0066, EC 630036  
TMI-D-0079  
Decommission Training Oversight Board, Meeting Minutes, 12/4/18, 8/8/19, 9/3/19, 10/29/19  
Drawing 302-630 Rev.35, Spent Fuel Cooling System Flow Diagram  
Safety Review Committee, Meeting Minutes, 01/27/2020  
SFP Water Chemistry Analysis 1/2/20 – 2/5/20  
SSC(s) Scoping Evaluation – ESAS and Emergency Power Distribution; Reactor Coolant  
System  
Spent Fuel Cooling/Pool Health



## **LIST OF ACRONYMS USED**

ADAMS	Agencywide Document and Access Management System
CFH	Certified Fuel Handler
CFR	Code of Federal Regulations
Exelon	Exelon Generation Co., LLC
IMC	Inspection Manual Chapter
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
PHE	Public Health Emergency
PSDAR	Post Shutdown Decommissioning Activities Report
SFP	Spent Fuel Pool
TMI Unit 1	Three Mile Island Unit 1