



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD, SUITE 102
KING OF PRUSSIA, PA 19406-1415

August 17, 2023

John Sauger
President and Chief Nuclear Officer
TMI-2 Solutions, LLC
121 West Trade Street, Suite 2700
Charlotte, NC 28202

SUBJECT: TMI-2 SOLUTIONS, LLC, THREE MILE ISLAND NUCLEAR STATION,
UNIT 2 - NRC INSPECTION REPORT NO. 05000320/2023002

Dear John Sauger:

On June 30, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program," at the permanently shutdown Three Mile Island Nuclear Station, Unit 2 (TMI-2). The inspection 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 site personnel, a review of procedures and records and plant walk-downs. The results of the inspection were discussed with Frank Eppler, Engineering Manager, and other members of your staff on July 25, 2023, and are described in the enclosed report.

Within the scope of this inspection, no violations of more than minor safety significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations* (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, if any, 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; 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; 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).

J. Sauger

2

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

Sincerely,

Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health
Physics Branch
Division of Radiological Safety and Security

Docket No.: 05000320

License No.: DPR-73

Enclosure:

Inspection Report No.: 05000320/2023002

cc w/ encl: Distribution via ListServ

SUBJECT: TMI-2 SOLUTIONS, LLC, THREE MILE ISLAND NUCLEAR STATION, UNIT 2 -
NRC INSPECTION REPORT NO. 05000320/2023002 DATED AUGUST 17, 2023

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U.S. NUCLEAR REGULATORY COMMISSION
REGION 1

INSPECTION REPORT

Inspection No.: 05000320/2023002

Docket No.: 05000320

License No.: DPR-73

Licensee: TMI-2 Solutions, LLC (TMI-2 Solutions)

Facility: Three Mile Island Nuclear Station, Unit 2 (TMI-2)

Location: Middletown, PA 17057

Inspection Dates: May 1, 2023 to June 30, 2023

Inspectors: Stephen Hammann, Senior Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Harold Anagnostopoulos, CHP, CSP, Senior Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Katie Barnes, Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Approved By: Anthony Dimitriadis, Chief
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

TMI-2 Solutions, LLC
Three Mile Island Unit 2
NRC Inspection Report No. 05000320/2023002

A routine announced decommissioning inspection was completed at the permanently shutdown TMI-2 on June 30, 2023. On-site inspection activities were performed April 25-26, May 16-18, and June 20-21, 2023. The inspection included a review of problem and identification and resolution, decommissioning performance and status, and occupational radiation exposure. 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 decommissioning 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 violations of more than minor safety significance were identified.

1.0 Background

In December 1993, TMI-2 received a possession-only license from the NRC to enter Post-Defueling Monitored Storage (PDMS). On December 18, 2020, the license for TMI-2 was transferred from GPU Nuclear, Inc. to TMI-2 Solutions (ADAMS No. ML20352A381). On October 27, 2022, TMI-2 Solutions submitted Revision 5 of the Post-Shutdown Decommissioning Activities Report (ADAMS No. ML22306A051). On March 31, 2023, an amended license was issued removing TMI-2 from PDMS and permitting commencement of decommissioning activities (ADAMS No. MLML23051A042). TMI-2 is in active decommissioning as described in IMC 2561.

2.0 Post-Defueling Monitored Storage Performance and Status Review

a. Inspection Scope Inspection Procedures (IPs) 40801, 71801, 83750

The inspectors performed on-site decommissioning inspection activities on April 25-26, May 16-18, and June 20-21, 2023, supplemented by in-office document reviews and periodic phone calls. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs.

The inspectors reviewed documents and interviewed TMI-2 personnel to determine if the site performed audits and self-assessments and if issues had been identified and corrected in accordance with the site's corrective action program (CAP). The inspectors reviewed a representative selection of CAP documents to determine if a sufficiently low threshold for problem identification existed, follow-up evaluations were of sufficient quality, and if TMI-2 Solutions assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue. The inspectors reviewed site audit schedules and self-assessments from the past year to determine if they were thorough and if corrective actions were initiated as necessary. The inspectors interviewed the Employee Concerns Representative to gain insights on the status of the licensee's safety culture at TMI-2.

The inspectors attended licensee meetings, including plan of the day meetings, safety meetings, and management review committee (MRC) meetings, and reviewed the current status of the overall project to determine compliance with the license, technical specifications (TS), and post shutdown decommissioning activities report (PSDAR). The inspectors performed plant walk-downs of the Containment Air Control Envelope (CACE) to review progress on installation of the roll-up door and frame and removal of the equipment hatch. The inspectors attended select pre-job briefings and observed associated work activities, including drone surveys of the reactor building. The inspectors reviewed TMI-2 Solutions organization, staffing, and training to determine if reasonable assurance of safety and security were in accordance with regulatory requirements.

The inspectors performed a follow-up review of the corrective actions for condition report ES-TMI-CR-2023-0037 "NRC RP Assessment Action Items". The inspectors observed the routine performance testing of a personnel contamination monitor, an alpha-frisking contamination instrument, and observed the operation of the whole-body counter. The inspectors interviewed site radiological protection personnel regarding recent short-term corrective actions for the site's internal dosimetry program, and plans for completing the

more comprehensive long-term actions, and other technical issues related to the site's internal dosimetry program. The inspectors also interviewed personnel to gain an understanding of the ongoing reactor building, auxiliary building, and fuel handling building radiological characterization efforts and the results to date. The inspectors attended a pre-job briefing and observed portions of drone flights into the reactor building for characterization purposes.

b. Observations and Findings

The inspectors determined that issues had been identified and entered into the CAP in a timely manner and the issues were effectively screened, prioritized and evaluated commensurate with their safety significance. The inspectors verified self-assessments had been performed by qualified individuals independent of the organization being audited and that management reviewed the self-assessments and associated corrective actions. The inspectors did not identify any safety conscious work environment concerns.

The inspectors noted that during this inspection period, TMI-2 Solutions continued radiological surveys of various reactor building elevations and commenced decommissioning activities. The inspectors determined the modifications in the CACE building and equipment hatch removal were performed safely and in accordance with work plans and plant procedures and that radiation protection technicians effectively maintained radiological controls for the work-in-progress. The inspectors noted an appropriate level of engagement of staff during meeting observations. The inspectors determined site staffing was adequate and personnel qualifications and training were up to date. The inspectors verified the activities and schedule were consistent with license requirements and the site PSDAR.

The inspectors noted that a recent internal dosimetry program change to require both entrance and exit whole-body counts on the more sensitive Fastscan whole-body counter was a positive interim measure. Additionally, the inspectors noted that frisking of the face, nose, and mouth for alpha contamination for all personnel soon after the removal of respiratory protection provides a measure of defense-in-depth commensurate with the risks associated with the ongoing characterization activities. The inspectors observed that the radiation protection department's plan to procure continuous air monitors with alpha monitoring capability is appropriate and a significant improvement in the ability to provide ample caution to workers with potentially significant unplanned or upset radiological conditions.

c. Conclusions

No violations of more than minor safety significance were identified.

3.0 Exit Meeting Summary

On July 25, 2023, the inspectors presented the inspection results to Frank Eppler, Engineering Manager, and other members of TMI-2 Solutions staff. No proprietary information was retained by the inspectors or documented in this report.

PARTIAL LIST OF PERSONS CONTACTED

F. Eppler, Engineering Manager
D. Del Vecchio, TMI-2 Project Director
F. Eppler, Engineering Manager
D. Allison, Construction Manager
M. Casey, SME
R. Cable, Radiation Protection Supervisor
T. Devik, Manager, Nuclear Licensing
D. Divittore, Radiation Protection Operations Manager
P. Dix, Radiation Protection Technical Support Manager
C. Keene, Health Physicist (CN Associates)
D. Loope, Radiation Protection Engineer
G. McCarty, Radiation Protection Manager
D. Morneault, Structural Engineer
H. Pell, Licensing Engineer
J. Scott, Radiation Protection Engineer
A. Smith, Dosimetry Specialist

ITEMS OPEN, CLOSED, AND DISCUSSED

None

PARTIAL LIST OF DOCUMENTS REVIEWED

Engineering Changes and Work Packages

Design Release, CACE Preparations, Hatch Removal, Enlargement
Equipment Hatch Segmentation Plan
TMI2-EN-DRL-S-00-0004, ACE Preparations, Hatch Removal, Enlargement
TMI2-M-GEN-WKPG-1006 Rev 0, Remove personnel capsule and equipment hatch

Procedures and Programs

TMI2-QA-PG-001, Revision 20, Quality Assurance Plan
TMI2-QA-PR-003, Rev. 1, TMI-2 Corrective Action Process
TMI2-RA-PO-001, TMI2 Nuclear Decommissioning Safety Culture Policy
TMI2-RA-PO-002, TMI2 Safety Conscious Work Environment Policy
TMI2-RA-PO-004, TMI2 Employee Concerns Program
TMI2-RP2-PR-005, Rev. 1, "Bioassay Implementation"
TMI2-RP-RPT-2022-0004, Rev. 1, "Site Specific Values for Air Sampling Calculations"
TMI2-RP-RPT-2023-0003, Revision to "TMI-2 PPE Material Beta Attenuation"
report, TMI2-RP-RPT-2022-001
TMI2-RP-RPT-2023-0005, Addendum to TMI-RP-RPT-2022-0003 -TMI-2 Validation of
Beta Correction Factor
TMI2-RP-RPT-2023-0006, Requirements for When to Use Specific Lens of the Eye Protection
TMI2-RP2-PN-002, Rev. 2, Special Bioassay for Transuranic Areas of TMI2"
TMI2-RP2-PR-006, Rev. 1, "Internal Dose Assessment"
TMI2-RP2-PR-009, Rev. 1, "Bioassay Sampling In-Vitro"

Corrective Reports Reviewed

ES-TMI-CR-2023-0037, 0051, 0074, 0077, 0078, 0090
Apparent Cause Analysis, ES-TMI-CR-2023-0051

Miscellaneous

ALARA Plan 23-RB-001, 23-406
ALARA Work-in-Progress Review 23-RB-001, 5/15/23
Application Note, "Radon Progeny Rejection with Mirion Argos-5AB Personnel Contamination Monitors", Mirion Technologies
Radiation Work Permit 23-2-0401
TMI2 Focused Area Self-Assessments Quarter 2 2023 Rev 1
TMI2 QA Audit and Surveillance Schedule 2023

LIST OF ACRONYMS USED

ADAMS	Agency Documentation and Management System
CACE	Containment Air Control Envelope
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
IMC	Inspection Manual Chapter
MRC	Management Review Committee
IP	Inspection Procedure
NRC	U.S. Nuclear Regulatory Commission
PSDAR	Post Shutdown Decommissioning Activities Report
PDMS	Post-Defueling Monitored Storage
TMI-2	Three Mile Island, Unit 2
TMI-2 Solutions	TMI-2 Solutions, LLC
TS	Technical Specifications