UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 Allendale Rd., SUITE 102
KING OF PRUSSIA, PA 19406-1415

August 26, 2022

Mr. David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CONSTELLATION ENERGY GENERATION, LLC, THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - NRC INSPECTION REPORT NOS. 05000289/2022001 and 07200077/2022001

Dear Mr. Rhoades:

On June 30, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program," and IMC 2690, "Inspection Program for Storage of Spent Reactor Fuel and Reactor Related Greater-Than-Class Waste at Independent Spent Fuel Storage Installations and for 10 CFR Part 71 Transportation Packagings" at the permanently shutdown Three Mile Island Nuclear Station, Unit 1 (TMI-1). On-site inspections were performed March 7-11, May 2-5, and June 6, 2022. 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 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 Trevor Orth, Site Decommissioning Director, and other members of the TMI-1 staff on July 25, 2022, 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).

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 M. Dimitriadis

Digitally signed by Anthony M. Dimitriadis
Date: 2022.08.26 11:08:29 -04'00'

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

Docket Nos.: 05000289 and 07200077
License No.: DPR-50

Enclosure:
Inspection Report Nos.: 05000289/2022001 and 07200077/2022001

cc w/ encl: Distribution via ListServ

SUBJECT: CONSTELLATION ENERGY GENERATION, LLC, THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - NRC INSPECTION REPORT NOS. 05000289/2022001 and 07200077/2022001 DATED AUGUST 26, 2022.

DOCUMENT NAME: https://usnrc.sharepoint.com/teams/Region-I-Decommissioning-Branch/Inspection Reports/Inspection Reports - Final/TMI U1 inspection 2022001.docx
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OFFICE	DRP/RI		DRSS/RI					
NAME	SHammann		ADimitriadis					
DATE	08/18/2022		08/26/2022					

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U.S. NUCLEAR REGULATORY COMMISSION
REGION 1

INSPECTION REPORT

Inspection Nos.	05000289/2022001 and 07200077/2022001
Docket Nos:	05000289 and 07200077
License No.:	DPR-50
Licensee:	Constellation Energy Generation, LLC (Constellation)
Facility:	Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Location:	Middletown, PA 17057
Inspection Dates:	January 1, 2022 to June 30, 2022
Inspectors:	Stephen Hammann, Senior Health Physicist Decommissioning, ISFSI, and Reactor HP Branch Division of Radiological Safety and Security Elizabeth Andrews, Technical Assistant Division of Radiological Safety and Security Orysia Masnyk-Bailey, Health Physicist Decommissioning, ISFSI, and Reactor HP Branch Division of Operating Reactor Safety and Security Bryan Edwards, Health Physicist Decommissioning, ISFSI, and Reactor HP Branch Division of Operating Reactor Safety and Security
Approved By:	Anthony Dimitriadis, Chief Decommissioning, ISFSI, and Reactor HP Branch Division of Radiological Safety and Security

EXECUTIVE SUMMARY

Constellation Energy Generation, LLC
Three Mile Island Unit 1
NRC Inspection Report Nos. 05000289/2022001 and 07200077/2022001

A routine announced decommissioning inspection was completed at the permanently shut-down Three Mile Island Station, Unit 1 (TMI-1) on June 30, 2022. On-site inspections were performed March 7-11, May 2-5, and June 6, 2022. The inspection included a review of design changes, and modifications, problem identification and resolution, decommissioning status, occupational exposure, and of the Independent Spent Fuel Storge Installation (ISFSI). The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, 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.” The NRC’s program for overseeing the safe operation of dry storage of spent fuel at an ISFSI is described in IMC 2690, “Inspection Program for Storage of Spent Reactor Fuel and Reactor Related Greater-Than-Class Waste at Independent Spent Fuel Storage Installations and for Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71 Transportation Packagings.”

Based on the results of this inspection, no violations of more than minor safety significance were identified.

1.0 Background

On September 26, 2019, Constellation 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 CFR 50.82(a)(1)(i) and 50.82(a)(1)(ii). TMI-1 is currently in the SAFSTOR phase of decommissioning as described in IMC 2561.

2.0 SAFSTOR Performance and Status Review

a. Inspection Scope [Inspection Procedures (IP) 37801, 40801, 71801, 83750]

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

The inspectors reviewed documents and interviewed TMI-1 personnel to determine if Constellation management performed audits and self-assessments and if issues were 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, if follow-up evaluations were of sufficient quality, and if Constellation assigned timely and appropriate prioritization for issue resolution commensurate with the significance of the issue. The inspectors reviewed site audits for the past year to determine if audits were thorough and that corrective actions were initiated if necessary.

The inspectors reviewed the site's organization and staffing levels to determine the adequacy for the scope of work being performed and reviewed training matrices for several individuals to determine if staff was trained in accordance with site programs. The inspectors evaluated the status of decommissioning to determine if the licensee had conducted activities in accordance with regulatory and licensee requirements.

The inspectors observed activities, reviewed documentation, and interviewed personnel associated with occupational radiation exposure to determine if it was adequate for protection of worker health and safety. The inspectors conducted numerous site walk-downs to check and verify radiological postings and locked high radiation doors and gates. The inspectors observed radiation protection (RP) staff performing job coverage and surveys and evaluated them to determine if implementation of radiological work controls, training and skill level, and instrumentation were sufficient for the activities being performed. The inspectors reviewed radiation work permits, and As Low As Reasonably Achievable (ALARA) work plans to determine if radiation work activities were pre-planned effectively to limit worker exposure.

b. Observations and Findings

The inspectors determined that 10 CFR 50.59 screenings were adequately performed and that Constellation had trained and qualified individuals to perform the screenings and evaluations. The inspectors determined that no changes or modifications had been made under 10 CFR 50.59 which would have required prior NRC approval.

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 audits had been performed by qualified individuals independent of the organization being audited and that management reviewed the audits and associated corrective actions.

The inspectors determined the site had adequate staffing for the current phase of decommissioning and that training programs had been maintained. The inspectors verified activities were performed in accordance with site programs and procedures. The inspectors noted that site activities, including the dry cask loading campaign and the status of the trust fund are consistent with the schedule in the post shutdown decommissioning activities report.

The inspectors verified that ALARA plans, work in progress, and post job reviews were performed as needed and were effective in limiting worker exposure and occupational dose was acceptable for the scope of the radiological activities performed. The inspectors determined that RP staff effectively controlled work activities, survey records were clear and complete, and RP technicians used appropriate instruments for the surveys. The inspectors verified technician training and qualifications were up-to-date.

c. Conclusions

No violations of more than minor safety significance were identified.

3.0 Operation of an ISFSI

a. Inspection Scope (IP 60855)

The inspectors conducted direct observations and performed independent evaluations to determine if the licensee was operating the ISFSI in conformance with their commitments and requirements. The inspectors reviewed changes to the program and procedures since the last inspection, evaluated the effectiveness of the licensee's plans for controlling radiological activities, reviewed selected records, and observed selected licensee activities for loading fuel. The inspectors evaluated the effectiveness of the licensee's management oversight and quality assurance assessments of ISFSI activities.

The inspectors observed and evaluated TMI -1 ISFSI activities associated with dry cask operations. In addition to the ISFSI activities, the inspectors also reviewed the licensee's activities associated with long-term operation and monitoring of the ISFSI. The inspectors evaluated conformance of the ISFSI program with the Certificate of Compliance (CoC), Technical Specifications (TS), and station procedures.

b. Observations and Findings

On March 7-11 and May 2-5, 2022, the inspectors observed ISFSI operations including: (1) fuel loading and fuel verification; (2) non-destructive weld examinations; (3) vacuum drying; (4) hydrostatic testing; (5) blowdowns; (6) survey activities; (7) movement of the transfer cask to the overpack; (8) downloading of the canister into the overpack; and (9) movement of the loaded overpack to the ISFSI pad. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and the TMI-1 approved site procedures. The inspectors also observed pre-job briefings to assess the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors. During performance of these activities, the inspectors verified that procedure use, communication, and coordination of ISFSI activities met established regulatory requirements and TMI-1 approved procedures. The inspectors also observed pre-job briefings and determined that the licensee's ability to identify critical steps of the evolution, potential failure scenarios, and human performance tools to prevent errors were effective to ensure procedural adherence and a safe work environment.

The inspectors performed a walkdowns of the heavy haul path and the ISFSI pad to assess the material condition of the pad and determined that transient combustibles were not stored on the ISFSI pad, in the vicinity of the stored casks, or in the vicinity of the heavy haul path, as required by site procedures. The inspectors confirmed that transient combustible material entry onto the ISFSI pad was controlled in accordance with site procedures.

The inspectors observed RP technicians as they provided job coverage for the cask loading workers. The inspectors reviewed survey data maps and radiological records from the canister loadings to date and confirmed that radiation survey levels measured were within limits specified by the TS and consistent with values specified in the final safety analysis report.

The inspectors reviewed corrective action reports and the associated follow-up actions that were generated prior to and during the campaign and verified that issues were entered into the corrective action program, were prioritized, and evaluated commensurate with their safety significance.

c. Conclusions

No violations of more than minor safety significance were identified.

4.0 Exit Meeting Summary

On July 25, 2022, the inspectors presented the inspection results to Mr. Trevor Orth, Site Decommissioning Director, and other members of Constellation's staff. No proprietary information was retained by the inspectors or documented in this report.

PARTIAL LIST OF PERSONS CONTACTED

T. Orth, Site Decommissioning Director
C. Smith, Regulatory Assurance Manager
R. Holmes, Senior Manager RP/Chem/Environmental
P. Mullens, ISFSI Engineering Lead
G. Rodriguez, CAP/EP Specialist
J. Troiano, Engineering

ITEMS OPEN, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Audits and Reports

10 CFR 20.2206(b) Personnel Radiation Exposure Report for 2021, dated April 19, 2022
2020-2021 Biennial 10 CFR 50.59 and 10 CFR 72.48 Summary Reports and 2021 Commitment Revision Summary Report, dated March 24, 2022
NOSA-TMI-21-08, Emergency Preparedness Audit Report
NOSA-TMI-22-02, Emergency Preparedness Audit Report

Procedures and Programs

30076-OP-12, Rev. 7, MAGNASTOR TSC Loading Preparations
30076-OP-13, Rev. 9, MAGNASTOR TSC Loading, Closure, and Processing
30076-OP-14, Rev. 5, MAGNASTOR TSC Transfer and Transport
DC-AA-300, Rev. 5, Decommissioning Transition Planning
DC-AA-300-1005, Rev. 5, Decommissioning Transition-Scoping and Screening Process
EI-AA-101, Rev. 11, Employee Concerns Program
LS-AA-104, Rev. 12, Exelon 50.59 Review Process
LS-AA-104-1006, Rev. 6, Exelon 50.59 Training and Qualification
LS-DC-106, Rev. 1, Safety Review Committee
NF-TM-626, Rev. 1, Fuel Assembly Inspections for Dry Cask Storage
NISP-RP-005, Rev. 1, Access Controls for High Radiation Areas
NISP-RP-010, Rev. 1, Radiological Job Coverage
NO-DC-10, Rev. 1, Decommissioning Quality Assurance Program
PI-AA-125-1003, Rev. 6, Corrective Action Program Evaluation Manual
PI-DC-120, Rev. 1, Decommissioning Issue Identification and Screening Process
PI-DC-125, Rev. 1, Decommissioning Corrective Action Program (D-CAP) Procedure
RP-AA-1008, Rev. 10, Unescorted Access To And Conduct In Radiologically Controlled Areas
TQ-DC-105, Rev. 1, Training and Qualification at a Decommissioning Facility

Corrective Action Documents

AR - 04470973, 04475836, 04476703, 04464773, 04478359, 04479076, 04479576, 04480190, 04481562, 04494121, 04497620

Miscellaneous

50.59 Screening and Evaluation TMI-D-0169, EC 633954
50.59 Screening No. TMI-D-0222
72.48 Screening No. TMI-72.48-044
Boron Analytical Data Sheet, 5/4/22
Cask Contents and Decay Heat Matrix, Casks 20 and 40
Decommissioning Training Oversight Board Meeting #26, Meeting Minutes, 3/1/2022
Physical Inventory Report, Casks 20 and 40

Radiation Protection Documents

HRA, LHRA, or VHRA Posting Checklist – 4/18/22, Stairwell from 305' to 348'
Radiological Survey Nos. 2022-119613, 119708, 119723, 119755, 119818, 120121, 168610, 168625, 168664, 168721, 168726, 168728, 168730, 167788
RWP's TM-1-22-00109, Rev. 1; TMI-22-00910, Rev. 3; TMI-22-00911, Rev, 4
Safety Review Committee, Meeting Minutes, 04/07/22
Station ALARA Committee, Presentations, 6/16/2021 and 10/05/2021
TM-21-01, Decommissioning Station ALARA Committee Meeting Minutes, 6-16-2021
TM-21-02, Decommissioning Station ALARA Committee Meeting Minutes, 10-05-2021
TM-22-01, Decommissioning Station ALARA Committee Meeting Minutes, 5-23-2022
TMI Dose Data, casks 1-39

LIST OF ACRONYMS USED

ADAMS	Agency Documentation and Management System
ALARA	As Low As Reasonably Achievable
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
Constellation	Constellation Energy Generation, LLC
GPO	Government Printing Office
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation
NRC	U.S. Nuclear Regulatory Commission
PHE	Public Health Emergency
RP	Radiation Protection
TMI-1	Three Mile Island, Unit 1
TS	Technical Specifications