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Cc: [Hannah E. Pell](#); [Frank J. Helin](#); achazelhoff@energysolutions.com; [Amy Snyder](#); [Shaun Anderson](#); [Robert Sun](#); [Stacey Imboden](#); [Jean Trefethen](#); [Angela Coggins \(She/Her/Hers\)](#)
Subject: NRC Request for Additional Information Related to the TMI-2 PDMS Transition License Amendment Request
Date: Thursday, December 22, 2022 3:03:00 PM
Attachments: [TMI-2 PDMS RAIs on Cultural Historic Resources - Final.pdf](#)
Importance: High

Dear Mr. Devik,

By letter dated February 19, 2021 (Agencywide Document Access and Management System (ADAMS) Package Accession No. [ML21057A047](#)), as supplemented on May 5, 2021 ([ML21133A264](#)), January 7 ([ML22013A177](#)), March 23 ([ML22101A079](#)), April 7 ([ML22101A077](#)), May 16 ([ML22138A285](#)), September 29 ([ML22276A024](#)), and October 29, 2022 ([ML22307A082](#)), TMI-2 Solutions, LLC (TMI-2 Solutions) submitted a License Amendment Request (LAR) seeking U.S. Nuclear Regulatory Commission (NRC) review and approval of an amendment request to the Possession Only License (POL) and Appendix A, Technical Specifications (TS), of POL No. DPR-73 ("License") for The Three Mile Island Nuclear Station, Unit No. 2 ("TMI-2").

In its application, TMI-2 Solutions states that the revised TMI-2 POL and TS applicable during decommissioning are referred to as the Decommissioning Technical Specifications (DTS). This amendment request, if approved, would revise the POL and the associated TS to support the transition of TMI-2 from a Post-Defueling Monitored Storage (PDMS) condition (SAFSTOR) to that of a facility undergoing active radiological decommissioning (DECON) pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.82(a)(7). Requests for additional information (RAIs) related to this application were issued on July 29, 2022 ([ML22210A080](#) Package; RAI Enclosure [ML22210A088](#)). One RAI response (RAI No. 3) remains outstanding. In addition to response to RAI No.3, the NRC staff has three additional RAIs (attached) related to the potential cultural and historic impacts of the proposed action.

The NRC staff requests that all RAI responses be provided no later than January 20, 2023. If you need additional time to provide all RAI responses related to this action, please contact Amy Snyder, Senior Project Manager for TMI-2, at 301-415-6822 or via email to amy.snyder@nrc.gov. Please contact myself or Amy if you have questions regarding these RAIs, and I hope that you all have a wonderful holiday season!

Cheers,
Marlayna Doell
(acting on behalf of Amy Snyder and Shaun Anderson)

[Marlayna Vaaler Doell](#)

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**Request for Additional Information**  
**Related to a Proposed License Amendment**  
**to Possession-Only License No. DPR-73**  
**Changes to the Post-Defueling Monitored Status**

**TMI-2 Solutions, LLC**

**Three Mile Island Nuclear Station, Unit 2**

**Docket No. 50-320**

TMI-2 Solutions, LLC (TMI-2 Solutions) submitted a license amendment request (LAR) on February 19, 2021 (Agencywide Document Access and Management System (ADAMS)) Package Accession No. [ML21057A047](#); Application [ML21057A046](#)), as supplemented on May 5, 2021 ([ML21133A264](#)), January 7 ([ML22013A177](#)), March 23 ([ML22101A079](#)), April 7 ([ML22101A077](#)), May 16 ([ML22138A285](#)), September 29 ([ML22276A024](#)), and October 29, 2022 ([ML22307A082](#)), to revise the possession-only license (POL) No. DPR-73 for Three Mile Island Nuclear Station, Unit 2 (TMI-2). POL No. DPR-73 was issued pursuant to Part 50, "Domestic Licensing of Production and Utilization Facilities," of Title 10 of the *Code of Federal Regulations* (10 CFR). Specifically, TMI-2 Solutions requested the removal of license conditions that have already been fulfilled; the movement of some Technical Specifications (TSs) to the quality assurance program; the deletion of TSs that only apply to the Post-Defueling Monitored Status (PDMS) for TMI-2; and the updating of the fuel mass safety limit. TMI-2 is currently in decommissioning.

In its LAR, TMI-2 Solutions states that if the amendment is approved it would support decommissioning activities at TMI-2. TMI-2 Solutions describes the TMI-2 decommissioning approach in three Phases: Phase 1a, Phase 1b, and Phase 2. Phase 1a is currently underway, with Phase 1b and Phase 2 to follow in the future. In addition, TMI-2 Solutions states that Phase 2 "includes typical decommissioning and dismantlement activities for a power reactor." The LAR also states that "during Phase 1b and Phase 2, major decommissioning activities as defined in 10 CFR 50.2, "Definitions," will be performed."

In the Three Mile Island Nuclear Power Station, Unit 2 Post-Shutdown Decommissioning Activities Report (PSDAR) Revision 5 ([ML22306A051](#)), which was submitted to the U.S. Nuclear Regulatory Commission (NRC) on October 27, 2022, TMI-2 Solutions describes "major decommissioning activities" as occurring in Phase 1b and Phase 2, including "demolishing plant structures to nominally three feet below grade" (PSDAR Section 3.2). PSDARs are not submitted for formal NRC approval; references to the TMI-2 PSDAR, Revision 5, in these RAIs are intended to contextualize the need for the additional clarifying information requested in support of the ongoing review of the LAR. Separately, additional RAIs may be forthcoming regarding the TMI-2 PSDAR, Revision 5, as an outcome of that separate review.

The NRC staff has the following RAIs related to the potential cultural and historic impacts of the proposed action to facilitate the NRC staff's continued review of the LAR. The requests include clarifying information so the NRC can better assess National Environmental Policy Act (NEPA) and National Historic Preservation Act (NHPA) requirements for this LAR, including whether a Section 106 consultation under NHPA is needed and, if so, when.

## **RAI Environmental (ENV)-1 - Impacts to National Register of Historic Places (NRHP)-eligible structures**

### Background

In its LAR, TMI-2 Solutions describes the decommissioning approach in three Phases. The LAR states that Phase 2 “includes typical decommissioning and dismantlement activities for a power reactor.” TMI-2 Solutions also states in the LAR that “during Phase 1b and Phase 2, major decommissioning activities as defined in 10 CFR 50.2 will be performed.”

Additionally, TMI-2 Solutions states in Section 6.1.14 of the TMI-2 PSDAR, Revision 5, that “TMI-2 was classified as a historic structure eligible for listing on the NRHP in 2010.” TMI-2 Solutions further states in the PSDAR that “...TMI-2 is a typical mid-twentieth century light water reactor” and that “... it is unexceptional from a design or engineering perspective.”

In Revision 5 of the TMI-2 PSDAR, TMI-2 Solutions points to the Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, NUREG-0586, Supplement 1, Regarding the Decommissioning of Nuclear Power Reactors (Decommissioning GEIS), Section 4.3.14.3 statement that “... activities conducted within the operational areas are not expected to have a detectable effect on important cultural resources because these areas have normally been highly degraded during facility construction and operation.” TMI-2 Solutions concludes in the PSDAR, Revision 5, that because TMI-2 Solutions plans to conduct activities within the operational area and will establish a Cultural Resources Protection Plan, “... the impacts on the demolition of TMI-2 structures eligible for the NRHP will be small.”

However, it is not clear how the discussion in the Decommissioning GEIS bounds potential cultural and historic impacts of activities associated with Phases 1a, 1b, and 2 of decommissioning at TMI-2 to the NRHP-eligible TMI-2 historic structure.

Section 4.3.14.2 of the Decommissioning GEIS states:

In a few situations, the nuclear facility itself could be potentially eligible for inclusion in the National Register of Historic Places, especially if it is older than 50 years and represents a significant historic or engineering achievement. In this case, appropriate mitigation would be developed in consultation with the SHPO [State Historic Preservation Officer]. Even for buildings that are less than 50 years old, the processes and engineering that were employed may be of interest and may be eligible for the Historic American Engineering Record.

The Decommissioning GEIS provides a generic environmental impact conclusion of SMALL, accounting for mitigation having already been developed with the SHPO (Decommissioning GEIS Section 4.3.14.2 - “In this case, appropriate mitigation would be developed in consultation with the SHPO”). TMI-2 Solutions notes in the TMI-2 PSDAR, Revision 5, that the TMI-2 Historic Survey Form for the TMI-2 district is being revised and that the Cultural Resources Protection Plan should be completed by December 31, 2022 (PSDAR, Revision 5, List of Regulatory Commitments). TMI-2 Solutions also discusses in the PSDAR coordination with the SHPO “to determine which documents, models, and artifacts should be preserved and turned over to state historic collections to ensure mitigation of impacts to the TMI-2 historic structures during decommissioning,” thereby indicating this coordination is ongoing.

The Pennsylvania Historical and Museum Commission (PHMC), in its November 9, 2021 ([ML22343A161](#)), email related to the decommissioning of TMI-2, indicates that mitigation measures have not yet been defined. Correspondence from the Pennsylvania SHPO on September 12<sup>th</sup>, September 16<sup>th</sup>, and November 17, 2022 ([ML22343A148](#), [ML22343A149](#), and [ML22343A141](#), respectively), indicate discussions with TMI-2 Solutions regarding the area of potential effects (APE) and the evaluation of resources are ongoing. It should be noted that the NRC has not initiated a Section 106 consultation under NHPA at this time and has not defined the APE for Three Mile Island Nuclear Station, Unit 2.

### Questions

- a) Explain how potential impacts to historic properties from activities associated with Phases 1a, 1b, and 2 of the decommissioning of the TMI-2 facility have been considered, including impacts from the dismantlement and demolition of structures.
- b) Explain how the potential impacts to historic and cultural resources from activities associated with Phases 1a, 1b, and 2 of decommissioning are bounded by the Decommissioning GEIS, or by any other document such as the Final Programmatic Environmental Impact Statement (PEIS) related to the decommissioning and disposal of radioactive wastes resulting from the March 28, 1979, accident at Three Mile Island Nuclear Station, Unit 2 (NUREG-0683).
- c) Provide the status and availability of the Cultural Resources Protection Plan.
- d) Describe any mitigation being considered and what mitigation has already been performed to preserve the historic aspects of the TMI-2 facility.

## **RAI ENV-2 – Identification and Protection of Historic and Cultural Resources**

### Background

In its LAR, TMI-2 Solutions describes the decommissioning approach in three Phases. The LAR states that Phase 2 “includes typical decommissioning and dismantlement activities for a power reactor.” TMI-2 Solutions also states in the LAR that “during Phase 1b and Phase 2, major decommissioning activities as defined in 10 CFR 50.2 will be performed.”

Additionally, TMI-2 Solutions indicates in Section 6.1.14 of the TMI-2 PSDAR, Revision 5, that TMI-2 Solutions anticipates decommissioning activities at TMI-2 will be confined to the operational area, “except for the possible excavation of fill from onsite areas outside of the operational area to backfill the foundations of buildings and structures after demolition.”

In addition to the NRHP-eligible TMI-2 structure, in Revision 5 of the TMI-2 PSDAR TMI-2 Solutions describes one archaeological site within the TMI-1 and TMI-2 operational area, and six archaeological sites outside of the TMI-1 and TMI-2 operational area but within the property boundary, one of which was determined to be eligible for listing on the NRHP.

Backfill is anticipated to be sourced from onsite demolition activities, but if clean fill is needed it may be obtained from within or beyond the operational area. TMI-2 Solutions plans to develop an Archaeological Resources Monitoring Plan prior to excavation of backfill from onsite areas outside of the operational area to evaluate an area’s archaeological sensitivity. In Revision 5 of

the TMI-2 PSDAR, TMI-2 Solutions also states that “procedures will provide direction and contact information should an unanticipated cultural resource be encountered.”

While formal consultation under NHPA has not yet been initiated, there has been communication between TMI-2 Solutions and the Pennsylvania SHPO, as TMI-2 Solutions indicated in the TMI-2 PSDAR, Revision 5. A SHPO letter dated September 12, 2022, states that “the historically associated property is ALL of TMI [Three Mile Island],” not only TMI-2. A subsequent SHPO letter dated November 17, 2022, states that “while we understand that this project is limited to TMI-2, it is necessary to assess the property in its entirety due to potential effects.” The SHPO also sent a letter on December 7, 2022 ([ML22343A150](#)) to the Three Mile Island Nuclear Station, Unit 1 (TMI-1) Site Decommissioning Director stating the need to “fully assess and evaluate the potential significance of the property in its entirety.”

### Questions

- a) Describe the status of efforts to identify historic and cultural resources (e.g., architectural [i.e., aboveground] and archaeological) at TMI-2, and on Three Mile Island property more broadly (including TMI-1 and TMI-2), if any. Provide any associated documentation regarding such discussions as a supplement to the RAI response.
- b) Considering the Three Mile Island property more broadly (including TMI-1 and TMI-2), explain how impacts of activities associated with decommissioning Phases 1a, 1b, and 2 at TMI-2 on historic and cultural resources, including any impacts from decommissioning at TMI-2 on historic properties identified at TMI-1, have been considered, including the impacts from major decommissioning activities as defined in 10 CFR 50.2.
- c) Considering the Three Mile Island property more broadly (including TMI-1 and TMI-2), explain how impacts of activities associated with decommissioning Phases 1a, 1b, and 2 at TMI-2 on historic and cultural resources, including any impacts from decommissioning at TMI-2 on historic properties identified at TMI-1, are bounded by the Decommissioning GEIS, or any other environmental review document, such as the PEIS.
- d) Describe any mitigation being considered or developed to resolve impacts from activities associated with Phases 1a, 1b, and 2 of decommissioning at TMI-2 to historic and cultural resources at TMI-1 or TMI-2.
- e) Provide the status and availability of the Archaeological Resources Monitoring Plan.
- f) Please clarify whether ground disturbing activities during each of the activities associated with Phases 1a, 1b, and 2 of decommissioning at TMI-2 will avoid areas identified as having high archaeological sensitivity.

### **RAI ENV- 3 - Decommissioning and Dismantling**

#### Background

In its LAR, TMI-2 Solutions describes the decommissioning approach in three Phases. The LAR states that Phase 2 “includes typical decommissioning and dismantlement activities for a power reactor.” TMI-2 Solutions also states in the LAR that “during Phase 1b and Phase 2, major decommissioning activities as defined in 10 CFR 50.2 will be performed.”

Additionally, TMI-2 Solutions describes in Section 3.2 of the TMI-2 PSDAR, Revision 5, that “major decommissioning activities” will occur in Phase 1b and Phase 2, including “demolishing plant structures to nominally three feet below grade.”

According to 10 CFR 50.2:

Major decommissioning activity means, for a nuclear power reactor facility, any activity that results in permanent removal of major radioactive components, permanently modifies the structure of the containment, or results in dismantling components for shipment containing greater than class C waste in accordance with § 61.55 of this chapter.

### Question

- a) Explain how this LAR and the major decommissioning activities planned in Phases 1a, 1b, and 2 of decommissioning at TMI-2, as described in the LAR and PSDAR, including dismantlement and demolition of plant structures, will be conducted to avoid prohibited activities under 10 CFR 50.82(a)(6)(ii), which states:

Licensees shall not perform any decommissioning activities, as defined in § 50.2, that... Result in significant environmental impacts not previously reviewed.

In other words, specifically explain how this LAR and activities related to each of Phases 1a, 1b, and 2 of decommissioning at TMI-2 will not impact the NRHP-eligible TMI-2 structure and the archaeological sites described in the TMI-2 PSDAR, Revision 5, and any mitigation measures being considered or developed.