

NUCLEAR REGULATORY COMMISSION

Docket No. 50-320

TMI-2Solutions, LLC

Three Mile Island Station, Unit 2

Exemption from Certain Low-Level Waste Shipment Tracking Requirements

I. Background

The U.S. Nuclear Regulatory Commission (NRC, the Commission) license for Three Mile Island Station, Unit 2 (TMI-2) is Possession Only License No. DPR-73. TMI-2Solutions, LLC (TMI-2S) is the holder of Possession Only License (POL) No. DPR-73 for Three Mile Island Nuclear Station, Unit No. 2 (TMI-2). The POL provides, among other things, that the facility is subject to all rules, regulations, and orders of the NRC now or hereafter in effect. TMI-2 is located in Dauphin County, Pennsylvania.

TMI-2S is currently decommissioning the TMI-2 facility. Inherent to the decommissioning process, large volumes of low-level radioactive waste are generated. This low-level radioactive waste requires processing and disposal or disposal without processing, as appropriate. To this end, TMI-2S will transport, by truck or by mixed mode shipments like a combination of truck and rail, low-level radioactive waste from TMI-2 to locations such as waste disposal facilities owned by *EnergySolutions* in Clive, Utah, and *Waste Control Specialists* in Andrews, TX.

Enclosure

II. Request/Action

By letter dated May 17, 2023 (Agencywide Document Access and Management System (ADAMS) Accession No. [ML23137A282](#)), TMI-2 Solutions, LLC (TMI-2S) requested an exemption from certain requirements of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 20, Appendix G, Section III.E, “Requirements for Transfers of Low-Level Radioactive Waste Intended for Disposal at Licensed Land Disposal Facilities and Manifests.” Specifically, TMI-2S requests an exemption from the requirement to investigate and report to the Nuclear Regulatory Commission (NRC) when notification of receipt of a shipment, or part of a shipment, of low-level radioactive waste is not received within 20 days after transfer. TMI-2S is requesting that the time to receive acknowledgement that a shipment has been received by the intended recipient be extended from 20 days to 45 days for low-level radioactive waste shipments from the TMI-2 facility. Further, TMI-2S states that the requested exemption would be applicable to shipments from TMI-2 by rail or by mixed transportation modes, such as a combination of truck/rail shipments.

III. Discussion

The NRC’s regulations at 10 CFR 20.2301, “Applications for exemptions,” allow the Commission to grant exemptions from the requirements of the regulations in 10 CFR part 20 if it determines the exemption is authorized by law and would not result in undue hazard to life or property.

A. The Exemption is Authorized by Law

The requested exemption from 10 CFR part 20, appendix G, section III.E would extend the receipt acknowledgement period from 20 days to 45 days before TMI-2S would have to investigate, trace, and report on the status of a low-level radioactive waste shipment being

transported from TMI-2 to a licensed low-level radioactive waste processing or land disposal facility. As stated above, 10 CFR 20.2301 allows the NRC to grant exemptions from the requirements of 10 CFR Part 20 when, in part, the exemptions are authorized by law. There are no provisions in the Atomic Energy Act of 1954, as amended (or in any other Federal Statute) that impose a requirement to investigate and report on low-level radioactive waste shipments that have not been acknowledged by the recipient within 20 days of transfer. The NRC staff determined that the requested exemption is therefore permissible under the Atomic Energy Act of 1954, as amended, and other regulatory requirements. Therefore, the NRC finds that the requested exemption is authorized by law.

B. The Exemption Would Not Result in Undue Hazard to Life or Property

The purpose of 10 CFR part 20, appendix G, section III.E is to require licensees to investigate, trace, and report on low-level radioactive waste shipments that have not reached their destination, as scheduled, for unknown reasons.

In its exemption request, TMI-2S stated that industry experience from other decommissioning projects shipping large quantities of low-level radioactive waste to offsite disposal facilities has shown that rail and mixed mode shipments can routinely take longer than 20 days. Based on past reports and industry experience, the NRC staff agrees that delays due to rail scheduling are likely to recur.

Further, TMI-2S stated that its exemption request is similar to those previously submitted to and approved by the NRC for San Onofre Nuclear Generating Station ([ML20287A358](#)), Fort Calhoun Station ([ML20162A155](#)), Vermont Yankee Nuclear Power Station ([ML20017A069](#)), La Crosse Boiling Water Reactor ([ML17124A210](#)), and Zion Nuclear Power Station ([ML15008A417](#)). The NRC staff reviewed these exemption requests and notes that all of the licensees that requested and were granted this exemption, previously had at least once

missed 20 day receipt notification window. The NRC staff conclude that due to the location of TMI-2 to low-level waste disposal facilities and the use of the rail system, it is likely that without the exemption, TMI-2 would be in a similar situation to the licensees referenced above due to the rail transport system practices. The NRC staff agrees that these exemption requests are similar to the exemption request by TMI-2S.

In its exemption request, TMI-2S stated that it will be transporting low-level radioactive waste from the TMI-2 facility to distant locations such as the waste disposal facilities owned by EnergySolutions in Clive, Utah, and Waste Control Specialists in Andrews, TX. TMI-2 plans to ship most of the waste to these disposal facilities or intermediate processors by rail. TMI-2S expressed that industry experience from other decommissioning projects shipping large quantities of low-level radwaste to offsite disposal facilities, has shown that rail and mixed mode shipments can routinely take longer than 20 days, resulting in an excessive administrative burden due to the required investigations and reporting. Further, TMI-2S states that there are various reasons for these delays that cannot be anticipated or avoided and that are beyond the control of the shipper.

TMI-2S further stated that, for rail shipments from TMI-2, a tracking system will be utilized that allows daily monitoring of a shipment's progress to its destination. Shipping procedures prescribe the expectations for tracking and communications during transit. TMI-2S stated that it will request daily updates be provided identifying the location of the shipment from the appropriate carrier. As a result, TMI-2S explains that it will be unlikely that a shipment could be lost, misdirected, or diverted without the knowledge of the carrier or TMI-2S personnel. According to TMI-2S, the 20-day requirement results in the "excessive administrative burden" of investigating and reporting, even though the shipments continue to be under requisite controls.

The NRC staff notes that in terms of potential effects on a member of the public, the primary cause of low-level radioactive waste shipment delays is coordination with the rail carriers. When these delays happen, the shipment is generally within a railyard and not near a member of the public or a public place. The only way a low-level radioactive waste shipment would remain in a public place for an unusual amount of time is if there was a problem with the transport vehicle or the rail system itself. In that instance, the NRC staff notes that all low-level radioactive waste shipments from TMI-2 are required to be compliant with the U.S. Department of Transportation (DOT) and NRC requirements for transportation of low-level radioactive packaging, placarding, and allowable radiation levels at the surface of the package for health and safety purposes during transit, including during switchyard staging. Furthermore, the shipments are required to be under control of the shipper at all times, tracked by the licensee, and periodically monitored by the licensee, as needed. Therefore, there are no potential health and safety concerns associated with this material sitting in a switchyard for an extended period of time. In the unlikely event that a low-level waste shipment were to remain in a public place for an extended period of time, adherence to the DOT transportation requirements would also ensure that there would be no health and safety concerns regarding potential dose to the public.

Based on the history of low-level radioactive waste shipments from other Nuclear Power Plants in decommissioning and the lack of potential health or safety concerns associated with these shipments sitting in a switchyard for an extended period of time, the NRC staff concludes that the need to investigate, trace, and report on low-level radioactive waste shipments that take longer than 45 days is appropriate.

Additionally, as indicated in the exemption request, for truck and rail shipments from TMI-2, TMI-2S will use a tracking system that allows daily monitoring of a shipment's progress to its destination and TMI-2 shipping procedures prescribe the expectations for tracking and communications during transit. The NRC staff notes that this will allow for monitoring the

progress of shipments on a daily basis, if needed, in lieu of the 20-day requirement, and will initiate an investigation as provided for by 10 CFR part 20, Appendix G, Section III.E after 45 days. Because of this oversight and the ability to monitor low-level radioactive waste shipments throughout the entire journey from TMI-2 to a disposal or processing facility, the staff concludes that it is unlikely that a shipment could be lost, misdirected, or diverted without the knowledge of the carrier or TMI-2S and that, therefore, there is no potential health or safety concern presented by the requested exemption. Furthermore, by extending the time for receipt acknowledgement to 45 days before requiring investigations, tracing, and reporting, a reasonable upper limit on shipment duration is maintained in the event that a breakdown of normal tracking systems was to occur.

Based on the above, the NRC staff finds that the requested exemption would not result in undue hazard to life or property.

C. Environmental Considerations

With respect to compliance with section 102(2) of the National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4332(2) (NEPA), the NRC staff has determined that the proposed action, the approval of the TMI-2S exemption request, is within the scope of the categorical exclusion at 10 CFR 51.22(c)(25). The proposed granting of the exemption from certain requirements of the NRC's regulations at 10 CFR part 20, appendix G, section III.E, would: (i) present no significant hazards consideration; (ii) not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) not result in a significant increase in individual or cumulative public or occupational radiation exposure; (iv) have no significant construction impact; and (v) not result in a significant increase in the potential for or consequences from radiological accidents. Additionally, the requirements from which the exemption is sought involve reporting requirements under

10 CFR 51.22(c)(25)(vi)(B) and inspection or surveillance requirements under 10 CFR 51.22(c)(25)(vi)(C). Given the applicability of a relevant categorical exclusion, no further analysis is required under NEPA.

IV. Conclusions

Accordingly, the Commission has determined that, pursuant to 10 CFR 20.2301, the exemption is authorized by law and will not result in undue hazard to life or property. Therefore, effective immediately, the Commission hereby grants TMI-2S an exemption from 10 CFR part 20, appendix G, section III.E, to extend the receipt of notification period from 20 days to 45 days after transfer for rail or mixed mode shipments of low-level radioactive waste from TMI-2 to a licensed land disposal or processing facility.

Dated: July 5, 2023.

For the Nuclear Regulatory Commission.

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