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10 CFR 50.90

TMI-20-021

July 8, 2020

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Three Mile Island Nuclear Station, Unit 1
Renewed Facility License No. DPR-50
NRC Docket No. 50-289

Subject: Response to Request for Additional Information regarding License Amendment Request - Deletion of PDTS 3/4.1.4, "Handling of Irradiated Fuel with the Fuel Handling Building Crane," and Two Minor Administrative Changes

References:

1. Letter from David P. Helker (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, " License Amendment Request - Deletion of PDTS 3/4.1.4, "Handling of Irradiated Fuel with the Fuel Handling Building Crane," and Two Minor Administrative Changes," dated November 12, 2019 (ML1931C659)

2. Electronic mail from Justin Poole (Project Manager, U.S. Nuclear Regulatory Commission) to Frank Mascitelli (Exelon), "Request for Additional Information Related to TMI-1 License Amendment Request to Delete Permanently Defueled Technical Specification 3/4.1.4 (L-2019-LLA-0250)," dated June 10, 2020.

In Reference 1 Exelon Generation Company, LLC (Exelon) submitted a license amendment request (LAR) to revise the Permanently Defueled Technical Specifications (PDTS), for Three Mile Island Nuclear Station, Unit 1 (TMI-1). The LAR is specifically seeking approval to delete PDTS 3/4.1.4, "Handling of Irradiated Fuel with Fuel Handling Building Crane." In reviewing the submitted information, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review.

A draft request for additional information (RAI) was provided to Frank Mascitelli (Exelon) by electronic email dated June 2, 2020. A conference call was subsequently held with the NRC on June 3, 2020 to provide clarification of the draft RAI question. The formal RAI was issued by electronic email to Frank Mascitelli (Exelon) on June 10, 2020 (Reference 2).

The attachment to this letter contains the NRC's RAI immediately followed by Exelon's response.

Exelon has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. Exelon has determined that the information attached to this letter does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the information attached to this letter does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no new regulatory commitments contained in this response. If you should have any questions regarding this submittal, please contact Frank Mascitelli at 610-765-5512.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 8th day of July 2020.

Respectfully,

David P. Helker
Sr. Manager, Licensing
Exelon Generation Company, LLC

Attachment: Response to Request for Additional Information

cc: USNRC Regional Administrator, Region I
USNRC Region I Decommissioning Lead Inspector
USNRC Project Manager, NRR, Three Mile Island Nuclear Station, Unit 1
USNRC Decommissioning Project Manager, Three Mile Island Nuclear Station, Unit 1
Director, Bureau of Radiation Protection - Pennsylvania Department of Environmental Protection

ATTACHMENT

Response to Request for Additional Information

License Amendment Request
Deletion of PDTS 3/4.1.4, "Handling of Irradiated Fuel with the Fuel Handling Building Crane," and Two Minor Administrative Changes
Docket No. 50-289

By letter dated November 12, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19316C659), Exelon Generation Company, LLC (Exelon) submitted a license amendment request (LAR) to revise the Permanently Defueled Technical Specifications (PDTS), for Three Mile Island Nuclear Station, Unit 1 (TMI-1). The LAR is specifically seeking approval to delete PDTS 3/4.1.4, "Handling of Irradiated Fuel with Fuel Handling Building Crane." In reviewing the submitted information, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review.

On June 2, 2020, the NRC staff sent Exelon the draft request for additional information (RAI) to ensure that the question was understandable, the regulatory basis was clear, there was no proprietary information contained in the RAI, and to determine if the information was previously docketed. On June 3, 2020, the NRC and Exelon held a clarifying call. During the call, Exelon requested a response date of 30 days from the date of formal email request, which was subsequently sent on June 10, 2020. The NRC staff informed Exelon that this timeframe was acceptable.

NRC Discussion

The LAR states the following:

"To support decommissioning activities and transfer of spent fuel to the TMI-1 Independent Spent Fuel Storage Installation (ISFSI), the manner in which fuel storage casks are handled inside the Fuel Handling Building (FHB) is being modified with a replacement FHB crane. The original FHB crane, which is non-single-failure-proof, will be replaced with a single-failureproof FHB crane that will be designed, fabricated, and tested per the guidelines of NUREG-0554, "Single-Failure-Proof Cranes for Nuclear Power Plants" and will satisfy NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Technical Activity A-36" (Reference 3), which combine to satisfy the Heavy Loads Control Program at TMI-1….

This LAR is specifically seeking approval to delete PDTS 3/4.1.4 once the replacement FHB crane is made operable. The FHB crane modification activity is being evaluated under the 10 CFR 50.59 process (Reference 1)…

The replacement FHB crane is designed with an upgraded main hoist capacity rated for 125 tons to handle the dry cask storage system. The installed location of the replacement FHB crane is not changed….

The manner of compliance with NUREG-0612 Section 5.1.2 "Spent Fuel Pool Area-PWR" is changed to an approved approach considering installation and operation of a NUREG-0554 compliant single-failure-proof crane. Full compliance with NUREG-0612 is maintained through the Exelon Heavy Loads Control Program….

Upgrading the FHB load handling system to a NUREG-0554 compliant single-failure-proof crane and operating the FHB crane in accordance with the Exelon Control of Heavy Loads Program improves the load handling system reliability to an acceptably low probability of a fuel cask drop such that the Fuel Cask Drop Accident will no longer be credible. As such, the

existing PDTS 3/4.1.4 Specifications will no longer be required…. NUREG-0612, “Control of Heavy Loads at Nuclear Power Plants: Resolution of Generic Technical Activity A-36” provides guidance for upgrading handling system reliability and states that new cranes meet the guidelines of NUREG-0554 “Single-Failure-Proof Cranes for Nuclear Power Plants” to be qualified as single-failure-proof cranes….

The TMI-1 replacement FHB crane design, fabrication, and testing is compliant with guidelines of NUREG-0554, which is an acceptable approach for single-failure-proof cranes in accordance with NUREG-0612…. “

The manner of compliance with NUREG-0612 Section 5.1.2 “Spent Fuel Pool Area-PWR" is changed to an approved approach considering installation and operation of a NUREG-0554 compliant single-failure-proof crane. The implementation and use of a single-failure-proof crane in the SFP area negates the need for the additional controls provided in Section 5.1.2 to compensate for use of a non-certified single-failure-proof crane. Although updating the method of compliance with Section 5.1.2 of NUREG-0612, full compliance with NUREG-0612 is maintained through the Exelon Heavy Loads Program.

Issue

The LAR credits the heavy loads program plus the existence of a single-failure-proof crane to justify meeting Section 5.1.2 of NUREG-0612. The NRC issued NUREG-0612 as an approved means for licensees to assure safe handling of heavy loads and prevent offsite doses that could exceed 10 CFR Part 100 limits if a drop occurs. The LAR includes the following statement about the heavy loads program changes:

“Upgrading the FHB load handling system to a NUREG-0554 compliant single-failure-proof crane and having incorporated the additional defense-in-depth guidance for special lifting devices, lifting devices, and interfacing lift points into the Exelon Control of Heavy Loads Program satisfies NUREG-0612. The FHB crane upgrade will improve the load handling system reliability such that there is an acceptably low probability of occurrence of an uncontrolled lowering, or fuel cask drop so as to effectively preclude consideration of a fuel cask drop accident as a credible event.”

The above statements do not contain sufficient clarity with respect to treatment of the special lifting devices, lifting devices (slings), and interfacing lift points.

RAI-1

Provide specific reference for compliance of special lifting devices, lifting devices (slings), and interfacing lift points with the guidance in Section 5.1.6 of NUREG-0612 or Section 5.1.2 (1) of NUREG-0612, which references Section 5.1.6. The information provided would become part of the basis for accepting the deletion of the TS because a single failure proof handling system, which includes those below-the-hook elements, is necessary to classify a heavy load drop as non-credible.

Exelon's Response

NUREG-0612 Section 5.1.6 provides additional guidelines beyond NUREG-0612 Section 5.1.1 when upgrading the handling system to be single-failure-proof. In addition, guidelines in Section 5.1.6 for upgrading the handling system reliability are related to (1) Lifting Devices; (2) New cranes; and (3) Interfacing lift points.

Exelon procedure MA-AA-716-022, "Control of Heavy Loads Program," complies with the guidance provided in NUREG-0612 and includes guidance and controls for single-failure-proof lifts. The program specifically defines single-failure-proof for special lifting devices as meeting the requirements of ANSI N14.6, "Standard for Special Lifting Devices for Shipping Containers Weighing 10,000 Pounds or More for Nuclear Materials," Section Titled – "Special Lifting devices for Critical Loads"; and for Slings and Rigging components requires the use of redundant rigging or the use of rigging that is rated at two times the calculated combined static and dynamic load capacity. MA-AA-716-022 also defines a "Single-Failure-Proof Lift" as simultaneously requiring the following three elements:

(a) Crane meeting the requirements of NUREG-0554;
(b) Special Lifting Devices meeting the requirements of ANSI N14.6; and
(c) Slings and rigging components which requires the use of redundant rigging or use rigging that is rated at two times the calculated combined static and dynamic load capacity.

Attachment 1 of MA-AA-716-022 requires that Heavy Load Handling Equipment Certification for Slings and Rigging are per ANSI/ASME B30.9 and Special Lifting Devices are per ANSI N14.6.

The MA-AA-716-022 procedural requirements establish the basis for the statement in the LAR that the Exelon Control of Heavy Loads Program provides the additional defense-in-depth associated with guidelines from NUREG-0612 Section 5.1.6, in addition to the upgraded NUREG-0554 compliant fuel handling building crane. Therefore, the Exelon Control of Heavy Loads Program requirements and controls per MA-AA-716-022 and the upgraded NUREG-0554 compliant fuel handling building crane combine as a single-failure-proof handling system that satisfies NUREG-0612.