UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 19, 2019

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 – RELIEF FROM THE REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS CODE RE: EXAMINATION AND TESTING FOR CONTAINMENT UNBONDED POST-TENSIONING SYSTEM (EPID L-2018-LLR-0132)

Dear Mr. Hanson:

By letter dated October 16, 2018 (Agencywide Documents and Access Management System Accession No. ML18289A363), Exelon Generation Company, LLC (the licensee) submitted Relief Request (RR) RR-18-01 to the U.S. Nuclear Regulatory Commission (NRC) for the use of alternatives to certain American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI requirements at the Three Mile Island Nuclear Station (TMI), Unit 1.

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(z)(1), the licensee requested to use the proposed alternative to defer execution of physical testing of the Reactor Building post-tensioning system on the basis that the alternative provides an acceptable level of quality and safety. In RR-18-01, the licensee proposed a deviation from certain containment Inservice Inspection requirements specified in 10 CFR 50.55a and, by reference therein, ASME Section XI, Subsection IWL. Specifically, the licensee proposed that Table IWL 2500-1, "Examination Category L-B, Unbonded Post-Tensioning System," requirements normally scheduled to be performed during the 45th year surveillance, to be performed during the 50th year surveillance, which is a 5-year extension request. Containment liner and penetration assembly ISI requirements specified in Subsection IWE will continue to be implemented in accordance with the licensee's current ISI plan.

The NRC staff has determined, as set forth in the enclosed safety evaluation, that the proposed alternative was submitted in a timely manner and provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the use of proposed alternative in RR-18-01, in accordance with 10 CFR 50.55a(z)(1) for TMI, Unit 1, for a one-time deferral of the physical testing of the post-tensioning system, to be completed no later than the 50th year surveillance.

All other ASME Code, Section XI requirements for which relief was not specifically requested and approved, remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact the Project Manager, Justin Poole, at 301-415-2048 or via e-mail at Justin.Poole@nrc.gov.

Sincerely,

/RA/

James G. Danna, Chief
Plant Licensing Branch 1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure:
Safety Evaluation

cc: Listserv

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST RR-18-01 REGARDING CONTAINMENT

UNBONDED POST-TENSIONING INSERVICE INSPECTION REQUIREMENTS

EXELON GENERATION COMPANY, LLC

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NO. 50-289

1.0 INTRODUCTION

By letter dated October 16, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18289A363), Exelon Generation Company, LLC (Exelon, the licensee), submitted to the U.S. Nuclear Regulatory Commission (NRC) Relief Request (RR) RR-18-01 associated with the fourth 10-year Inservice Inspection (ISI) Interval for the Three Mile Island Nuclear Station, Unit 1 (TMI-1).

Specifically, pursuant to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a "Codes and Standards," specifically 10 CFR 50.55a(z)(1), the licensee proposed an alternative to the ISI examination requirements of the American Society of Mechanical Engineers (ASME) Boiler & Pressure Vessel Code, Section XI, Subsection IWL, endorsed by reference in 10 CFR 50.55a. The ASME Code Table IWL 2500-1, "Examination Category L-B, Unbonded Post-Tensioning System," defines the examination categories for the Reactor Building concrete and post-tensioning (P-T) system.

2.0 REGULATORY EVALUATION

2.1 Component(s) for Which the Alternative is Requested

The licensee proposed an alternative to the physical testing requirements of the Reactor Building concrete and P-T system for the containment fourth ISI interval (April 20, 2011, through April 19, 2022). The licensee proposed a one-time 5-year extension for Examination Category L-B of Table IWL 2500-1 for the TMI-1 P-T system ISI requirements, which deviates from the examination and physical testing frequency requirements specified in ASME Section XI, Subsection IWL.

2.2 Proposed Alternative

In alternative RR-18-01, the licensee proposed to perform a visual examination only of the TMI-1 concrete containment and accessible steel hardware without tendon end anchorage cover removal and associated physical testing of the P-T system during the 45th year ISI surveillance. Examination and physical testing requirements of ASME Section XI, Table IWL-2500-1,

Examination Category L-B, Item Numbers L2.10 through L2.50, would be performed only if the general and detailed visual examination results identify conditions where observations indicate that there could be degradation of tendon hardware, as documented by the Responsible Engineer (RE) in an engineering evaluation. The RE is responsible for the approving, instructing, and training of personnel performing general and detailed visual examinations pursuant to IWL-2320.

RR-18-01 stated that this one-time (5-year) deferral of the physical testing of the P-T system would be performed during the 50th year ISI surveillance and would be completed during the subsequent fifth ISI interval. The licensee's proposed alternative to the 10 CFR 50.55a requirement basis, pursuant to 10 CFR 50.55a(z)(1), is on the premise that the proposed alternative would provide an acceptable level of quality and safety.

2.3 Code Addition and Addenda of Record

The licensee stated that the current code of record for the fourth containment ISI interval at TMI-1 is the ASME Boiler and Pressure Vessel Code, Section XI, 2004 Edition, no Addenda. The fourth ISI interval began on April 20, 2011, and is currently scheduled to end April 19, 2022.

2.4 Applicable Requirements

ASME Code, Section XI, 2004 Edition, Subarticle IWL-2420, "Unbonded Post-Tensioning Systems," requires the P-T system to "be examined in accordance with IWL-2520 at 1, 3, and 5 years following the completion of the containment Structural Integrity Test and every 5 years thereafter." Subarticle IWL-2500 requires "examination to be performed in accordance with the requirements of Table IWL-2500-1," for Examination Category L-B, Item Numbers L2.10 through L2.50. TMI-1 is currently required to examine the P-T system every 5 years.

2.5 Reason for Request

The licensee proposed to perform a visual examination (ASME Section XI, Table IWL-2500-1, Examination Category L-A, Item Numbers L1.11 and L1.12) only of the concrete containment and accessible steel hardware that is visible without tendon end anchorage cover removal during the 45th year surveillance. Physical testing would be performed only if the visual examination results indicate a need for such testing as determined by the RE. All ASME Section XI, Table IWL-2500-1, Examination Category L-B, examinations from the 45th year surveillance will be deferred to the 50th year surveillance.

The licensee stated that the proposed alterative to 10 CFR 50.55a, requesting a one-time deferral of the physical testing of the P-T system for one surveillance cycle, will continue to provide an acceptable level of quality and safety based on projected performance and physical testing (if required). The licensee also provided some additional benefits to the deferral of the physical testing, such as less exposure of personnel to industrial safety hazards and undesirable conditions eliminated for one surveillance cycle by this proposed relief request.

2.6 Duration of the Alternative

The licensee requested the duration of the proposed alternative to be a one-time (5-year) deferral of the physical testing of the post-tensioning system. The relief request will remain in effect for the 45th year surveillance through the remainder of the current fourth ISI interval, which is scheduled to end on April 19, 2022. A complete ASME Section XI IWL examination

(Examination Category L-A and L-B) will be performed during the subsequent 50th year IWL surveillance.

2.7 Applicable Regulations

The NRC may authorize alternatives to certain portions of 10 CFR, such as 10 CFR 50.55a(g)(4), as provided in 10 CFR 50.55a(z), which states, in part, that:

> Alternatives to the requirements of paragraphs (b) through (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation, or Director, Office of New Reactors, as appropriate. The applicant or licensee must demonstrate that:
>
> (1) Acceptable level of quality and safety. The proposed alternative would provide an acceptable level of quality and safety.

10 CFR 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," states in part,

> [C]omponents that are classified as Class CC pressure retaining components and their integral attachments, must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section, subject to the condition listed in paragraph (b)(2)(vi) of this section and the conditions listed in paragraphs (b)(2)(viii) […] of this section, to the extent practical within the limitation of design, geometry, and materials of construction of the components.

2.8 Evaluation of Submittal Timeliness

Alternatives to 10 CFR 50.55a must be proposed within the timeframe specified in 10 CFR 50.55a(z), which states, in part, that "A proposed alternative must be submitted and authorized prior to implementation."

The NRC staff evaluated the timeliness of this submission and has determined that the alternative was proposed in advance of the 45th and 50th year IWL surveillances. Therefore, the timeliness requirement of 10 CFR 50.55a(z)(1) can be met by limiting the effective period of the NRC authorization to a period of time that begins at the time in which the alternative is authorized.

3.0 TECHNICAL EVALUATION

Under regulation 10 CFR 50.55a(g)(4), the NRC requires that, throughout the service life of boiling- or pressurized- water-cooled nuclear power facilities; ISIs; repairs; and replacements of ASME Code Class CC pressure retaining components and their integral attachments, must meet ASME Code, Section XI, and addenda requirements as incorporated by reference in 10 CFR 50.55a and subject to specified conditions and limitations. Subsection IWL of the ASME Code, Section XI, provides rules for containment ISI and repair/replacement activities of the reinforced concrete and post tensioning systems of Class CC components. The regulation in 10 CFR 50.55a(z)(1) states that alternatives to the requirements of paragraphs (b) through (h) of 10 CFR 50.55a, "Codes and Standards," or portions thereof, may be used when authorized

by the Director of the Office of Nuclear Reactor Regulation, NRC, provided that the licensee's proposed alternative demonstrates an acceptable level of quality and safety. By this relief request, the licensee has proposed an alternative to the requirements of 10 CFR 50.55a(g)(4) for Subsection IWL-2420 regarding examination for unbonded P-T systems.

Prior to authorizing the proposed alternative under 10 CFR 50.55a(z)(1), the NRC staff must find that the technical information provided in support of the proposed alternative is sufficient to demonstrate reasonable assurance that the structural integrity and intended safety function of the Reactor Building concrete and P-T systems are maintained for the life of the plant or until such time that a future repair and replacement activity of this nature is performed again, whichever comes first. The NRC staff has reviewed the licensee's proposal and finds the following factors to be important in determining if the proposed alternative to 10 CFR 50.55a provides reasonable assurance and will provide an acceptable level of quality and safety.

3.1 Containment General Design Description

The TMI-1 Reactor Building is a reinforced, post-tensioned concrete containment structure with a cylindrical wall, a flat foundation mat, and a shallow dome roof. The foundation slab is conventionally reinforced with mild steel reinforcing; the cylindrical wall is prestressed with a P-T system in the vertical and horizontal directions. The dome roof is prestressed using a three-layered P-T system with tendon layers intersecting at 60 degrees. The inside surface of the building is lined with a carbon steel liner to ensure a high degree of leak tightness during operating and accident conditions. The prestressing system used is the BBRV system described in detail in Appendix 5B of the TMI-1 Updated Final Safety Analysis Report.

3.2 Review of the Licensee's Justification for Deviation from ASME Code, Section XI, Subsection IWL P-T System Examination and Physical Testing Requirements

Enclosure 1 of the relief request (hereinafter referred to as "the report") provides a plant-specific and generalized summary of P-T system performance observed during past periodic examinations conducted at 24 nuclear power plant sites. Both the plant-specific and industry operating experience for 41 unbonded post-tensioned concrete containments surveilled provide the basis for the proposed extension of the examination interval. The report stated that the examination results demonstrate that prescriptive requirements in IWL for a 45th year of required surveillance are overly conservative and that an acceptable level of quality and safety can be maintained by performing physical testing and examination in accordance with ASME Section XI, Table IWL-2500-1, "Examination Category L-B," during the 50th year surveillance rather than the 45th year surveillance as mandated by regulatory requirements of 10 CFR 50.55a.

The report also discussed industry-wide historical basis for examination and testing of the containment P-T systems including TMI-1 specific observations that provide the foundation for proposed deviation from the ASME Section XI, Subsection IWL, examination and testing frequency of requirements in Table IWL-2500-1, Examination Category L-B. The table specifies two categories for visual examination of concrete surfaces: Examination Category L-A for all concrete surfaces and Category L-B for concrete surfaces surrounding tendon anchorages. Concrete surfaces are examined for evidence of damage or degradation, such as concrete cracks.

Specifically, with respect to TMI-1, the report stated that P-T system ISIs conducted between 1975 and 2013 demonstrated that the system is continuing to perform its intended function and

that it can be expected to do so until well past the April 2034 expiration of the extended operating period license. The relief request proposes that TMI-1 defer such ASME Section XI, Examination Category L-B examinations and testing from the 45th year surveillance to the 50th year surveillance and only perform a general visual examination and a detailed visual examination (as determined to be required by the RE) of accessible concrete and exposed steel hardware as required by Table IWL-2500-1, Examination Category L-A, of ASME Code Section XI.

In Section 5, "Proposed Alternative and Basis for Use," of the relief request, the licensee provided a summary of the results of the report with respect to the examination and physical testing requirements of Section XI, Table IWL-2500-1, Item Numbers L2.10, L2.20, L2.30, L2.40, and L2.50. Section 4.0, "TMI-1 Examination History and Results Analysis/Evaluation," of the report included TMI-1 specific observations that provide a basis for deviation from the Section XI examination and testing requirements included in Table IWL 2500-1, "Examination Category L-B," Item Numbers L2.10 through L2.50 and are summarized below.

The report provided a comprehensive historical basis for examination and testing of containment P-T systems including TMI-1 P-T specific observations that constitute a basis for deviation from the ASME Section XI requirements in Table IWL 2500-1, "Examination Category L-B." Section 4.1, "Tendon Force Trends and Forecasts," of the report also provided comprehensive past evaluations of TMI-1 P-T system force measurements/examination results for hoop tendons, vertical tendons, dome tendons, and common tendons. The report also evaluated P-T system hardware, tendon mechanical properties, corrosion protection medium (CPM) chemical properties and free water analysis, and consolidated performance of the steam generator replacement tendons installed during the 2009 refueling outage. Tendons affected by repair and replacement activities associated with the containment wall opening created for the steam generator replacement project were also examined pursuant to Subsection IWL 2521.2 of ASME Code Section XI.

Item Number L2.10, Tendon Force Trends and Forecasts

Section 4.1 of the report stated that the tendon pre-stress loads are predicted to remain acceptable during the proposed 50th year surveillance. The report included plots that show that the statistical mean force in each of the tendon groups projected by log-linear regression trending and 95 percent lower confidence limit computations to remain above the specified minimum required (prestress force) value (MRV) from years 10 through the March 2034 license expiration. Figure 3 "Hoop Tendon Force Trend/Measured Force & UCL – Year 10 through Year 40 Data," Figure 7 "Vertical Tendon Force Trend/Measured Force & UCL – Year 10 through Year 40 Data," and Figure 11 "Dome Tendon Force Trend/Measured Force & UCL – Year 10 through Year 40 Data," of the report contain data points and trending for loss of tendon prestress like that considered by the NRC staff during the review of the TMI-1 license renewal application and found to be acceptable through March 2034, as noted in NUREG-1928. The figures in the relief request are augmented by the 40th year surveillance lift-off force data. The NRC staff reviewed the lift-off force data against the data included in the last surveillance and concluded that sampled and common tendon lift-off forces remained above their respective group MRVs. In particular, the NRC staff noted that "Topical Report 213, 40th Reactor Building Tendon Surveillance (Period 10)," Revision 0, (hereinafter referred to as the Topical Report, ADAMS Package Accession No. ML14189A283) shows that the surveilled group average losses of sampled and common dome, horizontal, and vertical tendons to be 17.89, 18.29, and 17.38 percent less than the original seated forces and to remain above the respective MRVs during the first 40 years of plant life. The NRC staff confirmed that the augmented results

provide a similar reasonable assurance as that reached in NUREG-1928 of prestressed tendon force adequacy.

Item Number L2.20, Wire Examination and Test Results

Section 4.3, "Wire Examination and Test Results Evaluation," of the report stated that tensile tests on three samples cut from the extracted wire, demonstrated that the ultimate tensile strength and elongation, at failure, for each tested wire were above the specified minimum values and remained essentially unchanged over time. The report also stated that examinations and tests conducted over almost 40 years have shown that wire condition, strength, and ductility are not changing over time. Visual examination of the wires extracted from test sample designated hoop, vertical, and dome tendons between 1975 and 2013 has uncovered no evidence of damage or active corrosion.

The NRC staff confirmed that the adequacy of the sampled tendon wire testing is consistent with IWL-2523 and the results following the review of the most recent surveillance data in the topical report, are acceptable. The topical report states that:

- There were no defects, cracks, or damage on the removed tendon wires.
- Corrosion was within acceptable levels.
- Wire diameter measurements were all within acceptable tolerance limits.
- Ultimate tensile stress of the sample wires exceeded the specified minimum of 240 ksi.
- The yield stress for all wire samples exceeded the minimum of 204 ksi.
- Elongation of sampled wires at failure was above the minimum required of 4.0 percent.

Item Number L2.30, End Anchorage Condition

In Section 4.2, "End Anchorage Condition," of the report, the licensee summarized the results of end anchorage examinations performed periodically over the life of the plant. During each of the surveillances, end anchorage areas were visually examined for evidence of corrosion, presence of free water, discontinuous wires, damage to or distortion of load bearing components and cracks in the concrete adjacent to the bearing plates; there have been no findings of active corrosion on the anchor heads, shims and wires. The licensee stated that no free water has been found in the end caps, on anchor heads, shims or on wires; no hardware damage, cracking or distortion has been found during visual examinations; and no evidence of structural cracks in the vicinity or surveillance sample tendon end anchorages. The licensee stated that through the most recent surveillance in 2013, tendon, anchorage hardware and adjacent concrete have performed well throughout the life of the plant. The NRC staff reviewed the information provided in the relief request against the topical report and confirmed that all inspected anchorage components were found to have limited corrosion (levels A or B) and that no cracks wider than 0.010 inch were found in the 24-inch perimeter of the concrete around the bearing plates throughout the tendon surveillance.

Item Numbers L2.40 and L2.50, CPM and Free Water Testing

As discussed in Section 4.4, "Corrosion Protection Medium Testing," of the report, CPM was collected at the ends of the sample tendons during each of the 11 surveillances including the augmented surveillance of the steam generator replacement tendons. The reported surveillances spanned a period of 38 years from 1975 to 2013 (3^{rd} – 40^{th} year surveillances).

Each CPM sample was tested for the presence of three corrosive ions (chlorides, nitrates and sulfides), absorbed water (since 1977), and reserve alkalinity (since 1975). A summary of the test results stated that all ion concentrations are well below the ASME Section XI, Table IWL-2525-1, upper limit of 10 parts per million for all three ions and show no trend of increasing over time; are well below the 10 percent (of dry weight) limit on water content; and with three exceptions, met the Table IWL-2525-1 criteria for reserve alkalinity.

The data reported during these surveillances also did not show evidence of active corrosion on the end anchorage hardware within the CPM coverage area (i.e., within the volume bounded by the tendon end caps). The NRC staff reviewed the topical report and confirmed that:

- No free water was observed during the tendon end inspections.
- Grease samples had base numbers less than the lowest test limit values.
- All other grease sample results were within the acceptance limits of Table IWL-2525-1.

The NRC staff, however, noted in the topical report that three out of five sampled dome tendons indicated CPM replenishment to exceed the IWL-3221.4 limit. The NRC staff noted that the licensee resolved the as-found grease void condition issue through Inspection Report 1585403, "Evaluation of Dome Grease Voids that Exceed Acceptance Criteria," which was made part of the topical report. The report concluded the as-found condition to be acceptable for the small number of affected dome tendons because: (i) there has been no evidence of significant leakage at the tendon end caps during their 40-year service life, implying that this condition existed since the original construction; (ii) the "uniqueness" of the TMI-1 duct design and construction of schedule 40 pipes (the sheathing (pipe) is cast into containment structures' concrete walls and dome) to ensure that tendons within the ducts are fully protected from water intrusion; (iii) the shop coating of Visconorust 1601 Amber on the tendon wires and further coating during CPM installation ensures that bare tendon wires are not exposed to atmospheric conditions in segments of duct not completely filled with CPM; and (iv) there was no evidence of corrosion on either anchorage components of sampled tendons nor on the tested wire.

Examination and Testing of Tendons Affected by Steam Generator Replacement and Repair Activities

Section 4.5, "SGR Tendon Examination and Test Results Evaluation," of the report discussed the steam generator replacement during the 2009 refueling outage which required an opening in the side wall of the Reactor Building and detensioning of 30 hoop and 45 vertical tendons. Of this population, 22 hoop and 10 vertical tendons were replaced with new tendons fabricated using low relaxation wire while the remainder were retensioned. As required by IWL-2521.2, these tendons are treated as a separate population examined and tested during an Augmented Examination surveillance in 2010 as well as during the 40th year surveillance performed in 2013. The licensee concluded that based on evaluations of visual examinations, tendon force measurements, wire tests, visual examination of end anchorage conditions, and CPM analyses performed in conjunction with the augmented and 40th year surveillance, that the steam generator replacement tendons are performing satisfactorily and that the corrosion protection system is functioning as intended. The NRC staff reviewed the topical report and confirmed that the examination and testing of the tendons affected by steam generator replacement and repair activities, including measurement of the sampled tendon lift-off forces, were performed in accordance with ASME Section XI, Subsection IWL, requirements and the results were found to be acceptable.

License Renewal and Additional Supporting Actions

In Section 5 of the relief request, the licensee discussed completion of the 2014 license renewal commitments inspection at TMI-1 which included Commitment 25 associated with the ASME Section XI, Subsection IWL, Program credited for managing Reactor Building degradation. The NRC concluded that the commitment is being implemented and there is reasonable assurance that the effects of aging will be managed during the extended period of operation. Visual examinations being performed for ASME Section XI, Examination Category L-A, are expected to identify conditions that would allow water intrusion into the tendons and gross leakage of CPM, which would be precursors for providing an environment that could allow corrosion of the tendon wires or inaccessible tendon hardware covered by the tendon end cap.

The licensee stated that TMI-1 implements other inspections of the Reactor Building concrete and exposed exterior metal components including annual monitoring of the tendon end caps for leakage. External visual inspection of the Reactor Building exterior is performed by a qualified design engineer each refueling outage (RFO) cycle. Structural monitoring inspections of the building are performed at least every five years but are generally performed every second RFO to allow access to areas which are not accessible during operation. The licensee concluded that these examinations, performed at TMI-1, provide an additional defense-in-depth that supports the proposed one-time deferral of ASME Section XI, Table IWL-2500-1, Examination Category L-B, examinations and tests of the P-T system and will continue to provide an acceptable level of quality and safety.

3.3 Assessment of Quality and Safety

Based on the of the licensee's justification for deviation from the ASME Section XI examination and testing requirements, the NRC staff finds that reasonable assurance exists that the structural integrity and intended safety function of the Reactor Building containment P-T system is maintained; therefore, the licensee's proposed alternative provides an acceptable level of quality and safety.

4.0 CONCLUSION

As set forth above, the NRC staff has determined that it has the regulatory authority to authorize the proposed alternative, that the proposal was submitted in a timely manner, and that the proposed alternative provides an acceptable level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1).

Based on the licensee presenting over 40 years of favorable examination and testing results including plant specific operating experience to TMI-1 with no active P-T system hardware degradation conditions identified, acceptable and noted projected satisfactory performance of the containment P-T system, and technical evaluations performed by the licensee that demonstrate applied tendon prestress remaining force is acceptable through the end of the renewed license period, the NRC staff authorizes the use of the proposed alternative RR-18-01 for a one-time deferral of the physical testing of the containment P-T system, no later than the 50th year scheduled surveillance.

This authorization is limited to those components described in Section 2.1 of this safety evaluation.

All other ASME Code Section XI requirements for which the alternative was not specifically requested and authorized in this proposed alternative remain applicable, including a third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: R. Pettis

Date: September 19, 2019

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 – RELIEF FROM THE REQUIREMENTS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS CODE RE: EXAMINATION AND TESTING FOR CONTAINMENT UNBONDED POST-TENSIONING SYSTEM (EPID L-2018-LLR-0132) DATED SEPTEMBER 19, 2019

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