



Order No. EA-12-049

RS-15-273
TMI-15-144

October 29, 2015

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

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

Subject: Request for Schedule Relaxation from NRC Order EA-12-049, "Order Modifying Licenses With Regard To Requirements For Mitigation Strategies For Beyond-Design-Basis External Events"

References:

1. NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. Exelon Generation Company, LLC's letter to USNRC, "Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order EA-12-049)," dated February 28, 2013 (RS-13-026)
3. Exelon Generation Company, LLC First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 28, 2013 (RS-13-131)
4. Exelon Generation Company, LLC Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated February 28, 2014 (RS-14-016)
5. Exelon Generation Company, LLC Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 28, 2014 (RS-14-214)
6. Exelon Generation Company, LLC Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated February 27, 2015 (RS-15-025)
7. Exelon Generation Company, LLC Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049), dated August 28, 2015 (RS-15-216)

This letter transmits a request for schedule relaxation of the requirements contained in Nuclear Regulatory Commission (“NRC” or “Commission”) Order EA-12-049. On March 12, 2012, the NRC issued an Order (Reference 1) to Exelon Generation Company, LLC (EGC). Reference 1 was immediately effective and directs EGC to develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Reference 2 provided the Mitigating Strategies Overall Integrated Plan (OIP) for Three Mile Island Nuclear Station, Unit 1. References 3, 4, 5, 6, and 7 provided the OIP 6-month update reports required by NRC Order EA-12-049. It is noted that closure of the NRC audit open items has resulted in significant revisions to the OIP, which will be identified in a future update. The original implementation schedule requirement for Three Mile Island Nuclear Station, Unit 1 is prior to startup from the T1R21 refueling outage (Fall 2015).

The purpose of this letter is to request schedule relaxation from NRC Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1 to provide additional time to support completion of the final closure information associated with remaining NRC audit open items, and NRC review of the closure information. NRC conducted the on-site audit review of the Three Mile Island Nuclear Station, Unit 1 mitigation strategies on August 10-13, 2015. The resolution of several of the NRC audit review open issues requires additional technical analyses and evaluations supporting alternate approaches for implementation of the mitigating equipment and strategies. Plant FLEX modifications, equipment installation, procedure changes, training, and strategy validation necessary to support implementation of the mitigation strategies Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1 will be completed and available for use prior to startup from the T1R21 refueling outage (Fall 2015) in accordance with the original Order requirement. Currently identified turbine building structural and missile protection modifications are scheduled to be completed prior to startup from the T1R21 refueling outage (Fall 2015). If further modifications identified as a result of the additional analyses being performed become necessary to ensure turbine building structural integrity, equipment missile protection and main steam line integrity in support of the FLEX mitigation strategy, they will be completed by April 30, 2016.

Section IV of NRC Order EA-12-049 (Reference 1) states that licensees proposing to deviate from requirements contained in NRC Order EA-12-049 may request that the Director, Office of Nuclear Reactor Regulation, relax those requirements.

In accordance with Section IV of NRC Order EA-12-049, EGC is requesting that the Director, Office of Nuclear Reactor Regulation, relax the requirement for completion of full implementation as prescribed in Section IV.A.2 of NRC Order EA-12-049 as described in the attachment to this letter.

EGC considers that, upon approval by the NRC, the revised implementation date regarding NRC Order EA-12-049 proposed in the attachment will constitute a condition of the NRC Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1. Therefore, there are no new regulatory commitments contained in this letter.

If you have any questions regarding this request, please contact David P. Helker at 610-765-5525.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 29th day of October 2015.

Respectfully submitted,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment:

Request for Schedule Relaxation of NRC Order EA-12-049 Requirement IV.A.2 for Three Mile Island Nuclear Station, Unit 1

cc: Director, Office of Nuclear Reactor Regulation
NRC Regional Administrator - Region I
NRC Senior Resident Inspector – Three Mile Island Nuclear Station
NRC Project Manager, NRR – Three Mile Island Nuclear Station
Mr. Jeremy Bowen, NRR/JLD/MSPB, NRC
Ms. Mandy K. Halter, NRR/JLD/JOMB, NRC
Mr. John D. Hughey, NRR/JLD/JOMB, NRC
Director, Bureau of Radiation Protection – Pennsylvania Department of Environmental Resources
Chairman, Board of County Commissioners of Dauphin County, PA
Chairman, Board of Supervisors of Londonderry Township, PA
R. R. Janati, Chief, Division of Nuclear Safety, Pennsylvania Department of Environmental Protection, Bureau of Radiation Protection

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REQUEST FOR SCHEDULE RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1

Relaxation Request:

Pursuant to the procedure specified in Section IV of Nuclear Regulatory Commission (NRC) Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (Reference 1), Exelon Generation Company, LLC (EGC) hereby submits a request for schedule relaxation for Three Mile Island Nuclear Station, Unit 1 from the Order requirements for completion of implementation currently required to be no later than two (2) refueling cycles after submittal of the overall integrated plan, as required in Condition C.1.a of the Order, or December 31, 2016, whichever occurs first.

Order Requirement from Which Relaxation is Requested:

NRC Order EA-12-049, Section IV.A.2 requires completion of full implementation of the Order requirements to be no later than two (2) refueling cycles after submittal of the overall integrated plan, as required by Condition C.1.a or December 31, 2016, whichever comes first. In accordance with the requirements of the Order, EGC submitted the Three Mile Island Nuclear Station, Unit 1, Mitigation Strategies Overall Integrated Plan (OIP) (Reference 2) on February 28, 2013. References 3, 4, 5, 6, and 7 provided the OIP 6-month update reports required by NRC Order EA-12-049. It is noted that closure of the NRC audit open items has resulted in significant revisions to the OIP, which will be identified in a future update. The Three Mile Island Nuclear Station, Unit 1, Mitigation Strategies Overall Integrated Plan milestone schedule identified the completion date for full implementation of NRC Order EA-12-049 as November 2015, in order to satisfy the requirements of NRC Order EA-12-049.

NRC conducted the on-site audit review of the Three Mile Island Nuclear Station, Unit 1 mitigation strategies on August 10-13, 2015. The resolution of several of the NRC audit review open issues requires additional technical analyses and evaluations to be performed in support of the alternate approaches for installation of FLEX equipment in the turbine building and assurance of main steam line piping integrity; and final NRC review of these additional analyses and evaluations. Plant FLEX modifications, equipment installation, procedure changes, training, and strategy validation necessary to support implementation of the mitigation strategies Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1 will be completed and available for use prior to startup from the T1R21 refueling outage (Fall 2015) in accordance with the original Order requirement. Currently identified turbine building structural and missile protection modifications are scheduled to be completed prior to startup from the T1R21 refueling outage (Fall 2015). If further modifications identified as a result of the additional analyses being performed become necessary to ensure turbine building structural integrity, equipment missile protection and main steam line integrity in support of the FLEX mitigation strategy, they will be completed by April 30, 2016. The requested relaxation will provide additional time for EGC to complete the final detailed technical analyses and evaluations supporting the alternate approaches for installation of FLEX equipment and main steam line piping integrity, install any additional modifications, and respond to any additional NRC review open items, and will allow NRC adequate time to review these completed analyses in order to resolve the technical concerns identified in the NRC audit review.

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REQUEST FOR SCHEDULE RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1

The requested relaxation would defer the full compliance schedule date of NRC Order EA-12-049 to no later than April 30, 2016. EGC is proceeding with completion of design, equipment procurement, and programmatic changes to support the ability to implement the Three Mile Island Nuclear Station, Unit 1 mitigation strategies which will be completed and implemented prior to restart from the Three Mile Island Nuclear Station, Unit 1 refueling outage T1R21 in Fall 2015, except as noted above.

Justification for Relaxation Request:

The NRC conducted the Three Mile Island Nuclear Station, Unit 1 on-site mitigation strategies audit review on August 10-13, 2015. The NRC audit review identified a number of open items that require completion of additional technical analyses and evaluations associated with the justification for alternate approaches to the guidance contained in NEI 12-06 (Reference 8) for installation of FLEX equipment in the turbine building and assurance of main steam line piping integrity. Resolution of the proposed alternate approaches also requires final NRC review and concurrence with the technical analyses' methods and results. NRC review and concurrence with the proposed alternate approaches supports the full implementation of the mitigating strategies needed to achieve full compliance with Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1.

The TMI FLEX strategy utilizes the turbine building for installed FLEX equipment. An alternate approach to the guidance of NEI 12-06 has been proposed to demonstrate that the FLEX equipment in the modified turbine building will be adequately protected from beyond-design-basis external events (BDBEEs). This approach ensures that the FLEX equipment in the turbine building will remain functional and accessible after such events.

The main steam line piping in the turbine building supports implementation of the TMI FLEX strategy. Analysis and modifications are being performed to demonstrate that main steam pipe integrity is maintained after a BDBEE. This analysis requires further NRC review.

The extent of the additional technical analyses, evaluations, and resulting potential additional turbine building and main steam line integrity modifications required to address the NRC audit open items associated with the alternate approaches described above are such that completing all activities associated with full implementation of the mitigation strategies Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1 prior to startup from the T1R21 refueling outage (Fall 2015) is not achievable.

Plant FLEX modifications, equipment installation, procedure changes, training, and strategy validation necessary to support implementation of the mitigation strategies Order EA-12-049 for Three Mile Island Nuclear Station, Unit 1 will be completed and available for use prior to startup from the T1R21 refuel outage (Fall 2015) in accordance with the original Order requirement with the exception of the items discussed above.

Thus, implementation of the mitigation strategies for Three Mile Island Nuclear Station, Unit 1 in accordance with the original implementation schedule requirements of NRC Order EA-12-049 cannot be completed by the Order requirement date which is no later than two (2) refueling

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cycles after submittal of the overall integrated plan, as required by Condition C.1.a or December 31, 2016, whichever comes first. Additional time is required to resolve the open items identified in the NRC audit review associated with alternate approaches to the guidance in NEI 12-06. The requested relaxation duration has been determined to be adequate to complete resolution and closure of these audit open items, and support full implementation of the required mitigation strategies.

Accordingly, EGC requests that the NRC Order EA-12-049, Section IV.A.2, implementation requirement date for Three Mile Island Nuclear Station, Unit 1 be relaxed to allow completion no later than April 30, 2016.

The mitigating strategies being implemented in accordance with NRC Order EA-12-049 provide defense-in-depth measures for mitigating consequences of a beyond-design-basis external event. The Three Mile Island Nuclear Station, Unit 1 mitigating strategies equipment and procedures will be implemented and available for use by the original schedule requirement of NRC Order EA-12-049, except as previously described. A sequence of events such as the Fukushima Dai-ichi accident is unlikely to occur in the United States based on current regulatory requirements and existing plant capabilities. Therefore, allowing additional time for completion and review of the final technical analyses and evaluations supporting alternate approaches to NEI 12-06 guidance required for full implementation of the mitigation strategies is not a significant increase in plant risk. These mitigating strategies provide enhanced plant capability to mitigate beyond-design-basis external events. Therefore, the requested relaxation does not reduce nuclear safety or adversely impact safe plant operations.

Conclusion:

As described above, compliance with the NRC Order EA-12-049 schedule required for completion of implementation of mitigation strategies and equipment would result in hardship or unusual difficulty without a compensating increase in the level of safety. Additional time following startup from the Three Mile Island Nuclear Station, Unit 1, T1R21 (Fall 2015) refueling outage is required in order to resolve the open items identified in the NRC audit review and achieve full implementation of the strategies required by NRC Order EA-12-049. Accordingly, significant hardship and unusual difficulty exists in completing technical analyses, evaluations, and modifications required to implement the mitigating strategies required by Order EA-12-049 in accordance with the original implementation schedule requirements. Therefore, in accordance with the provisions of Section IV of the Order, EGC requests relaxation of the requirement described in Section IV.A.2.

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REQUEST FOR SCHEDULE RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR THREE MILE ISLAND NUCLEAR STATION, UNIT 1

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1. NRC Order EA-12-049, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012
2. Exelon Generation Company, LLC's letter to USNRC, "Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order EA-12-049)," dated February 28, 2013 (RS-13-026)
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8. NEI 12-06, Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, Revision 0, dated August 2012