



Order No. EA-12-049

RS-14-046

February 27, 2014

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

Quad Cities Nuclear Power Station, Units 1 and 2  
Renewed Facility Operating License Nos. DPR-29 and DPR-30  
NRC Docket Nos. 50-254 and 50-265

Subject: Request for 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-13-025)
3. NRC Order EA-12-050, "Order Modifying Licenses With Regard to Reliable Hardened Containment Vents," dated March 12, 2012
4. NRC Order EA-13-109, "Order Modifying Licenses With Regard to Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions," dated June 6, 2013

This letter transmits a request for 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. As described in the Overall Integrated Plan for Quad Cities Nuclear Power Station, Units 1 and 2 (Reference 2), these mitigation strategies are dependent upon implementation of reliable hardened containment venting capability established in accordance with NRC Order EA-12-050 (Reference 3). NRC subsequently issued NRC Order EA-13-109 (Reference 4), which rescinded the requirements of Order EA-12-050 and established revised schedule timelines and implementation dates for reliable hardened containment vents capable of operation under severe accident conditions. The revised containment venting capability schedule and implementation timeline impacts the ability to achieve full implementation of the mitigation strategy requirements of NRC Order EA-12-049 by the required dates for Quad Cities Nuclear Power Station, Units 1 and 2.

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.

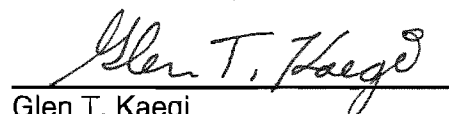
In accordance with Section IV of NRC Order EA-12-049, EGC is requesting that the Director, Office of Nuclear Reactor Regulation, relax the requirement for completion of full implementation as prescribed in Section IV.A.2 of NRC Order EA-12-049 as described in the attachment to this letter.

EGC considers that, upon approval by the NRC, the alternative full implementation dates regarding NRC Order EA-12-049 proposed in the attachment will constitute a condition of the NRC Order EA-12-049 for Quad Cities Nuclear Power Station, Units 1 and 2. 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 27<sup>th</sup> day of February 2014.

Respectfully submitted,



Glen T. Kaegi  
Director - Licensing & Regulatory Affairs  
Exelon Generation Company, LLC

Attachment:

Request for Relaxation of NRC Order EA-12-049 Requirement IV.A.2 for Quad Cities Nuclear Power Station, Units 1 and 2

cc: Director, Office of Nuclear Reactor Regulation  
NRC Regional Administrator - Region III  
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station, Units 1 and 2  
NRC Project Manager, NRR – Quad Cities Nuclear Power Station, Units 1 and 2  
Mr. Robert J. Fretz, Jr, NRR/JLD/PMB, NRC  
Mr. Robert L. Dennig, NRR/IDSS/SCVB, NRC  
Ms. Jessica Kratchman, NRR/JLD/JPMB, NRC  
Mr. Jeremy Bowen, NRR/JLD/MSPB, NRC  
Mr. John Boska, NRR/JLD/MSPB/NRC  
Illinois Emergency Management Agency – Division of Nuclear Safety

## ATTACHMENT

### REQUEST FOR RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

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#### **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), Quad Cities Nuclear Power Station, Units 1 and 2, hereby submits a request for relaxation from the Order requirements for completion of full 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 Quad Cities Nuclear Power Station, Units 1 and 2, Mitigation Strategies Overall Integrated Plan (Reference 2) on February 28, 2013. The Quad Cities Nuclear Power Station, Units 1 and 2, Mitigation Strategies Overall Integrated Plan milestone schedule identified the completion dates for full implementation of NRC Order EA-12-049 as March 2015 for Unit 1, and April 2016 for Unit 2, in order to satisfy the requirements of NRC Order EA-12-049.

NRC Order EA-12-049 requires the development, implementation, and maintenance of guidance and strategies to maintain or restore core cooling, containment, and spent fuel pool cooling in the event of a beyond-design-basis external event. As described in the Overall Integrated Plan for Quad Cities Nuclear Power Station, Units 1 and 2 (Reference 2), these mitigation strategies are dependent upon implementation of reliable hardened containment venting capability established in accordance with NRC Order EA-12-050 (Reference 3). NRC subsequently issued NRC Order EA-13-109 (Reference 4), which rescinded the requirements of Order EA-12-050 and established revised schedule timelines and implementation dates for reliable hardened containment vents capable of operation under severe accident conditions. The revised schedule and implementation timeline contained in NRC Order EA-13-109 impacts the ability to achieve full implementation of the mitigation strategy requirements of NRC Order EA-12-049 with respect to the current required dates for Quad Cities Nuclear Power Station, Units 1 and 2, specified above.

#### **Justification for Relaxation Request:**

Quad Cities Nuclear Power Station, Units 1 and 2, implementation of the NRC Order EA-12-049 mitigation strategy for core cooling and containment credits primary containment wetwell (torus) venting capability to support heat removal from the reactor pressure vessel (RPV) to the water in the suppression pool and from the suppression pool air space to the outside atmosphere. In addition, containment wetwell venting minimizes the suppression pool heat up which allows crediting the Reactor Core Isolation Cooling (RCIC) System for RPV make-up during Mitigating

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### REQUEST FOR RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

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Strategies Phase 1 (reliance only on permanently installed equipment) if RCIC suction is from the suppression pool. Primary containment wetwell venting under Order EA-12-050 was initially planned to be implemented concurrently with the Mitigation Strategy Order EA-12-049.

As a result of NRC issuance of Order EA-13-109 (Reference 4), modifications to support primary containment wetwell venting (Severe Accident Capable Vent Phase 1 of Order EA-13-109) is not required until after 2016. Although, as discussed below, all FLEX equipment supporting the mitigation strategy requirements of NRC Order EA-12-049 will be installed as originally committed, the full mitigating strategy functional capabilities in each unit cannot be met until Phase 1 of Order EA-13-109 is implemented for that unit. Mitigation strategy procedures and training will need to reflect that the mitigating strategy functional requirements will not be fully met until Phase 1 of Order EA-13-109 is implemented.

In accordance with the requirements of NRC Order EA-13-109, Section IV.B, Quad Cities Nuclear Power Station, Units 1 and 2, are required to complete implementation of the Phase 1 severe accident capable wetwell venting system no later than startup from the second refueling outage that begins after June 30, 2014, or June 30, 2018, whichever comes first.

Based on the timelines specified in NRC Order EA-13-109, the severe accident capable wetwell venting system will be implemented on the following schedule:

Quad Cities Nuclear Power Station, Unit 1 – Startup from the Q1R24 Refueling Outage (Spring 2017)

Quad Cities Nuclear Power Station, Unit 2 – Startup from the Q2R24 Refueling Outage (Spring 2018)

Thus, full implementation of the mitigation strategies for Quad Cities Nuclear Power Station, Units 1 and 2, in accordance with NRC Order EA-12-049 cannot be fully completed by the Order requirement date which is 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, since primary containment wetwell venting capability is an essential element of the mitigation strategies required by NRC Order EA-12-049, as described above.

The FLEX equipment and modifications required to implement the mitigation strategies required by NRC Order EA-12-049 will be completed and available for use in accordance with the implementation schedule requirements specified in NRC Order EA-12-049 except (as per the subject of this relief request) primary containment wetwell (torus) venting capability. Until full containment wetwell venting capability is installed to meet the requirements of NRC Order EA-13-109, Quad Cities Nuclear Power Station, Units 1 and 2 will vent the primary containment in accordance with Emergency Operating Procedures.

Accordingly, EGC requests that the NRC Order EA-12-049, Section IV.A.2, full implementation requirement dates for the Quad Cities Nuclear Power Station, Units 1 and 2, be relaxed to the following milestones in order to reflect implementation of the primary containment wetwell venting capability required by NRC Order EA-13-109:

Quad Cities Nuclear Power Station, Unit 1 – Startup from the Q1R24 Refueling Outage (Spring 2017)

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### REQUEST FOR RELAXATION OF NRC ORDER EA-12-049 REQUIREMENT IV.A.2 FOR QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

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Quad Cities Nuclear Power Station, Unit 2 – Startup from the Q2R24 Refueling Outage (Spring 2018)

The revised containment vent requirements imposed by NRC Order EA-13-109 provide additional defense-in-depth measures for mitigating consequences of a beyond-design-basis external event since severe accident capable vents are required to be implemented by NRC Order. 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 full implementation of the modifications required by NRC Order EA-13-109 is not a significant increase in plant risk. Mitigation strategies not impacted by the delay in the implementation of the containment vent capability described above will be completed and implemented in accordance with the current requirements of NRC Order EA-12-049. These strategies described above provide enhanced plant capability to mitigate beyond-design-basis external events. Therefore, the requested relaxation does not reduce nuclear safety or safe plant operations.

#### **Conclusion:**

As described above, compliance with the NRC Order EA-12-049 schedule required for full completion of implementation of mitigation strategies would result in hardship or unusual difficulty without a compensating increase in the level of safety. The detailed requirements and guidelines supporting the design, installation, and operation of the containment wetwell vent will not be finalized by the NRC and industry on a schedule concurrent with full implementation of NRC Order EA-12-049. Accordingly, significant hardship and unusual difficulty exists in proceeding with design and installation of the containment wetwell vent prior to finalization of the detailed implementation requirements and guidelines. Therefore, in accordance with the provisions of Section IV of the Order, we request relaxation of the requirement described in Section IV.A.2.

#### **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-13-025)
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