



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

March 21, 2017

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

**SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 – RELAXATION OF SCHEDULE REQUIREMENTS FOR ORDER EA-12-049, “ORDER MODIFYING LICENSES WITH REGARD TO REQUIREMENTS FOR MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS” AND ORDER EA-13-109, “ORDER MODIFYING LICENSES WITH REGARD TO RELIABLE HARDENED CONTAINMENT VENTS CAPABLE OF OPERATION UNDER SEVERE ACCIDENT CONDITIONS” (CAC NOS. MF1048, MF1049, MF4460, AND MF4461)**

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (NRC) staff is responding to the request from Exelon Generation Company, LLC (Exelon, the licensee), to relax the schedule requirements for NRC Order EA-12-049, “Order Modifying Licenses With Regard To Requirements For Mitigation Strategies For Beyond-Design-Basis External Events,” and NRC Order EA-13-109, “Order Modifying Licenses With Regard To Reliable Hardened Containment Vents Capable Of Operation Under Severe Accident Conditions,” at Quad Cities Nuclear Power Station (Quad Cities), Units 1 and 2. The NRC staff has determined that good cause exists for the schedule relaxation, as described below.

By letter dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12054A735), the U.S. Nuclear Regulatory Commission (NRC) issued Order EA-12-049 to licensees of all power reactors to take certain actions associated with the Fukushima Near-Term Task Force Recommendations. Order EA-12-049 directed that actions be taken by licensees to develop and implement strategies to maintain or restore core cooling, reactor coolant system inventory, containment cooling, and spent fuel pool cooling capabilities during beyond-design-basis external events. By letter dated March 12, 2012 (ADAMS Accession No. ML12054A694), the NRC issued Order EA-12-050 to all operating boiling-water reactor licensees with Mark I and Mark II containments. This order, in part, required licensees to install a reliable hardened containment vent system. By letter dated June 6, 2013 (ADAMS Accession No. ML13143A334), the NRC superseded the requirements of Order EA-12-050 with Order EA-13-109, which requires the installation of reliable hardened containment vents capable of operation under severe accident conditions. Order EA-13-109 has two phases. Phase 1 is the installation of a wetwell vent, and Phase 2 is the installation of a drywell vent or a comparable venting strategy.

Section IV of Orders EA-12-049 and EA-13-109 state that licensees proposing to deviate from requirements of the order may request that the Director, Office of Nuclear Reactor Regulation, relax or rescind certain requirements. By letter dated April 15, 2014 (ADAMS Accession No. ML14071A531), the Director approved Exelon's request to extend the Order EA-12-049 compliance date for Unit 1 to the spring 2017 refueling outage, and for Unit 2 to the spring 2018 refueling outage, to allow full implementation of the hardened severe accident capable containment wetwell vent which is being installed for Order EA-13-109. The wetwell vent is needed as part of the licensee's planned actions for compliance with Order EA-12-049. The extension was requested by Exelon because the installation of a containment wetwell vent that meets the requirements of Order EA-13-109, Phase 1, would take additional time to complete, as compared to the compliance dates associated with Order EA-12-049.

By letter dated June 20, 2016 (ADAMS Accession No. ML16172A151), Exelon notified the NRC that it had decided to permanently cease power operations at Quad Cities by June 1, 2018, due to deteriorating economics. By letter dated November 16, 2016 (ADAMS Accession No. ML16321A442), Exelon requested that the NRC extend compliance dates for both orders to June 30, 2018. In the letter dated November 16, 2016, Exelon also stated that after the units were placed in permanent shutdown, it would request relief from Order EA-13-109.

By letter dated December 14, 2016 (ADAMS Accession No. ML16349A311), Exelon notified the NRC that it had reversed its decision to permanently cease power operations at Quad Cities due to the financial support provided by the Future Energy Jobs Bill, which had been signed by the Governor of Illinois on December 7, 2016. By letter dated January 12, 2017 (ADAMS Accession No. ML17012A387), Exelon requested that the NRC extend compliance dates for both orders to June 30, 2018, with the exception of the Order EA-13-109 Phase 2 compliance date for Unit 1, which Exelon noted will remain at the original compliance date of the spring 2019 refueling outage. The licensee's extension request, dated January 12, 2017, notes that the change in operational status for Quad Cities units was unforeseen. According to the licensee, the extension will allow the facility sufficient time to complete all required project activities to fully implement the requirements of Order EA-13-109, Phases 1 and 2, and that full compliance with Order EA-12-049 is contingent on completing the Order EA-13-109, Phase 1 activities. In addition, the licensee stated it had completed all aspects of Order EA-12-049 in accordance with the original schedule requirements of spring 2015 for Unit 1 and spring 2016 for Unit 2, except for the fully qualified containment wetwell vent, and is maintaining a containment venting strategy in accordance with existing emergency operating procedures at each unit.

The licensee's request dated January 12, 2017, describes the wetwell venting design features that will be in place during the period of the requested extension. This description includes the interim venting capability, as well as the partial seismic design and combustible gas control characteristics of the existing wetwell venting system. The NRC staff reviewed the venting features described by the licensee that will be in place for the period of the requested extension, and concluded that the interim venting capability will provide defense-in-depth measures and enhanced plant capability to mitigate the consequences of a beyond-design-basis external event, and thus minimize the potential for severe accident conditions, for the period of the requested extension. Further, the NRC staff concludes that the licensee's justification for the change to the orders' implementation dates is acceptable, considering the passage of the Future Energy Jobs Bill, as described in the licensee's letter dated December 14, 2016.

The NRC staff notes that until the full containment wetwell venting capability required by Order EA-13-109 is implemented, Exelon will maintain a containment venting strategy in accordance

with existing emergency operating procedures at each unit. Since the licensee has completed the specified plant configuration changes for Order EA-12-049 (other than the severe accident capable containment wetwell vent), and maintains the ability to vent containment in accordance with existing procedures, a portion of the required increase in capability to respond to a beyond-design-basis external event has been realized within the timeframe specified in Order EA-12-049. The requested extension allows the licensee sufficient time to install the enhanced containment wetwell vent capability necessary for compliance with Order EA-12-049 and Phase 1 of Order EA-13-109 within an appropriate amount of time. The NRC staff also notes that Order EA 13-109 specifies that the ultimate implementation dates for compliance with Phase 1 and Phase 2 of the order are June 30, 2018, and June 30, 2019, respectively, although licensees may have earlier compliance dates based on refueling outage schedules. Further, the NRC staff notes that following the accident at Fukushima Dai-ichi, the NRC concluded that a sequence of events leading up to an accident such as the one that occurred at Fukushima Dai-ichi is unlikely in the United States based on the current regulatory requirements and existing plant capabilities. Given the plant-specific circumstances at Quad Cities, and in light of the facts presented in the licensee's letters dated December 14, 2016, and January 12, 2017, the NRC staff has determined that good cause exists to relax the orders' implementation dates.

Accordingly, based upon the authority granted to the Director, Office of Nuclear Reactor Regulation, the requirement for full implementation of Order EA-12-049 at Quad Cities, Units 1 and 2; the requirement for implementation of Phase 1 of Order EA-13-109 at Quad Cities, Unit 1; and the requirement for implementation of Phases 1 and 2 of Order EA-13-109 at Quad Cities, Unit 2 are relaxed until June 30, 2018.

If you have any questions, please contact John Boska, Senior Project Manager, at 301-415-2901.

Sincerely,

A handwritten signature in black ink, appearing to read 'W. M. Dean', with a long horizontal line extending to the right.

William M. Dean, Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254 and 50-265

cc: Listserv

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**ADAMS Accession No.: ML17025A248**

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