



Order No. EA-12-049

RS-15-090

March 6, 2015

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

Quad Cities Nuclear Power Station, Unit 1
Renewed Facility Operating License No. DPR-29
NRC Docket No. 50-254

Subject: Supplemental Information - 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, 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," dated March 4, 2015 (RS-15-088)
3. 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)
4. 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-13-129)
5. 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-14-015)
6. 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-14-213)
7. 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-15-024)

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. In Reference 2, EGC requested a schedule relaxation of the requirements contained in Nuclear Regulatory Commission ("NRC" or "Commission") Order EA-12-049 for Quad Cities Nuclear Power Station, Unit 1.

This letter provides supplemental information regarding the Quad Cities Nuclear Power Station, Unit 1 request for schedule relaxation from NRC Order EA-12-049.

Description of FLEX capability that will be available

Without the seismic deep well, the primary source of makeup water for the FLEX strategy is a FLEX pump (Godwin Model HL130M) and water from the Discharge Bay as discussed in the station's original overall integrated plan (Reference 3) for everything except the external flood event. The FLEX pump will take suction from the Discharge Bay, and the discharge will be directed through fire hoses routed from the area near the Discharge Bay either through the turbine building and reactor building or around the Protected Area access road to the east side of the Reactor Building and in through the Unit 1/2 Trackway. At this location the water supply would be connected to various FLEX connection points discussed in the OIP.

For the external flood event, the station relies on another portable pump (Darley pump) as described in the station's existing design basis, and does not require either the deep well or the FLEX pump. The FLEX pump would be available and could be utilized if desired to augment the makeup capability, but is not required for this scenario.

For a seismic event, the discharge bay has not been evaluated to assure it is seismically robust. The access pathway needs to be evaluated for liquefaction and the deployment timeline needs to be developed and validated. The scenario is also complicated by the current FLEX assumption of failure of the downstream Lock and Dam 14 due to the seismic event resulting in the river level dropping to elevation 561 feet, which is the nominal river level downstream of Lock and Dam 14. The FLEX pump elevation at the Discharge Bay is approximately 588 feet. The pump can prime and operate with a suction lift of up to 28 feet (8.5 meters). Therefore, the available FLEX pumps are physically capable of pulling suction from the discharge bay under these conditions.

Description of FLEX capability that will not be available

As discussed above, the FLEX capability impacted is Phase 2 and later makeup water source for RPV and other functions for a seismic event.

BDBEE scenarios that will have full mitigation capability

Although the seismically robust source of well water may not be available for use in mitigating strategies in accordance with the original implementation schedule, the mitigating strategies equipment and procedures in place will be fully capable of mitigating all other postulated beyond-design-basis external events (BDBEE's) required to be evaluated by NRC Order EA-12-049. These BDBEEs applicable to the Quad Cities Station site include external flooding events, tornadoes and high wind events, snow/ice, extreme cold events, and high temperature events. These BDBEEs can be mitigated using the non-seismic water sources available, as described in

the Quad Cities Nuclear Power Station, Units 1 and 2 Overall Integrated Plan (OIP) (Reference 3), and subsequent six (6) month update reports (References 4, 5, 6, and 7).

BDBEE scenarios that will not have full mitigation capability

The only event that will not have full mitigation capability in accordance with the original implementation schedule is the postulated BDB seismic event.

Other potential sources of water available as compensating backup sources

The additional water sources currently relied upon as part of the FLEX event are the suppression pool and the Contaminated Condensate Storage Tanks (CCSTs). There are other water sources available that are not part of the station's current FLEX strategy, such as the fire protection system, station well water, and associated pumps. This equipment has not been evaluated as seismically robust but may be available to be utilized. Additionally, the station also has an existing plan for a postulated failure of downstream Lock and Dam 14 to ensure additional pumps are brought to the site within 48 hours that could bolster the ability of the site to respond to this scenario.

Probability of dam failure event

UFSAR Section 2.4.4 evaluates the potential dam failure scenarios of Lock and Dam No. 14. The maximum credible failure of the dam has been evaluated to be the loss of both upstream and downstream lock miter gates due to a navigation accident. The miter gate dam failure scenario has been further evaluated under UFSAR 9.2.5.2 which describes how the ultimate heat sink (UHS) is used to mitigate the loss of downstream Lock and Dam No. 14 and estimates that the UHS would become separated from the river at elevation 565 feet approximately 90 hours after the postulated failure. An earthquake has been determined to not result in a loss of the pool and is a less severe event than the miter gate dam failure. The likelihood of a dam failure due to an earthquake is low due to the low seismicity of this region.

Description of potential contingency plan/new strategy to be used if the well is not successful

If the well is not successful, the river/UHS is a potential source for a seismically robust water supply for the final FLEX strategy. This method may use pre-staged FLEX pumps upon loss of the downstream lock and dam. The need for seismically qualifying staging areas and paths will need to be confirmed for this option.

Conclusion

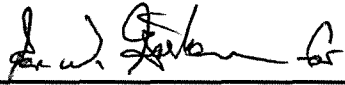
Without the seismic deep well pumps, the station still has a means to provide makeup water as part of the FLEX strategy, and the water sources have been assessed to assure they are available for all scenarios with the exception of the BDB seismic event. Therefore, the site has provided assurance on meeting the Order for the majority of envisioned BDBEE scenarios, and the relaxation requested in Reference 2 reflects the fact that the water source available has not been assured to be seismically robust.

No new or revised regulatory commitments are 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 6th day of March 2015.

Respectfully submitted,



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