

RS-15-005

January 5, 2015

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

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Extension Request - Response to March 12, 2012, Request for Information
Enclosure 2, Recommendation 2.1, Flooding, Required Response 2, Flood Hazard
Reevaluation Report

References:

1. NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012
2. NRC Letter, Prioritization of Response Due Dates for Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated May 11, 2012
3. Letter from Exelon Generation Company, LLC (EGC) to U.S. Nuclear Regulatory Commission, 90-Day Response to March 12, 2012 Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1 and 2.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (Flooding), dated June 11, 2012
4. NRC Letter, Supplemental Information Related to Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 1, 2013
5. Letter from Exelon Generation Company, LLC (EGC) to U.S. Nuclear Regulatory Commission, 180-day Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding the Flooding Aspects of Recommendation 2.3 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated November 19, 2012 (RS-12-174)
6. NRC, Interim Staff Guidance, Guidance for Assessment of Flooding Hazards Due to Dam Failure, JLD-ISG-2013-01, Revision 0, dated July 29, 2013

7. Letter from Exelon Generation Company, LLC (EGC) to U.S. Nuclear Regulatory Commission, "Assistance in Obtaining Information on Dams, Peach Bottom Atomic Power Station – Units 2 and 3, NRC Docket Nos. 50-277 and 50-278, Facility Operating License Nos. DPR-44 and DPR-56", dated November 22, 2013
8. U.S. Nuclear Regulatory Commission, NUREG/CR-7046, "Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America", dated November 2011
9. Letter from Exelon Generation Company, LLC (EGC) to U.S. Nuclear Regulatory Commission, "Extension Request - Response to March 12, 2012, Request for Information Enclosure 2, Recommendation 2.1, Flooding, Required Response 2, Flood Hazard Reevaluation Report, Peach Bottom Atomic Power Station – Units 2 and 3, NRC Docket Nos. 50-277 and 50-278, Facility Operating License Nos. DPR-44 and DPR-56", dated March 12, 2014
10. NRC Letter to Exelon Generation Company, LLC (EGC), "Peach Bottom Atomic Power Station, Units 2 and 3 – Relaxation of Response Due Dates Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of the Insights from the Fukushima Dai-ichi Accident," dated July 17, 2014

On March 12, 2012, the NRC issued Reference 1 to request information associated with Near-Term Task Force (NTTF) Recommendation 2.1 for Flooding. One of the required responses in this letter directed licensees to submit a Hazard Reevaluation Report, including the interim action plan requested in Item 1.d of Reference 1, Enclosure 2, if appropriate. On May 11, 2012, the NRC issued the prioritization plan developed by the NRC and resultant Flooding Hazard Reevaluation due dates for all sites. Reference 2, Enclosure 1 identified the Peach Bottom Atomic Power Station, Units 2 and 3 (PBAPS) site as a Category 2 Site requiring a Flooding Hazard Reevaluation Report submittal due date of March 12, 2014. In Reference 3, EGC indicated that it planned to comply with the requested response dates.

On March 12, 2014, EGC issued a letter (Reference 9) requesting an extension to the scheduled submittal date for the PBAPS Flooding Hazard Reevaluation Report. In Reference 4, the NRC states "an extension request should include: 1) the reason for the delay; 2) a proposed schedule for the submittal of a complete Hazard Reevaluation Report; and 3) the basis for the acceptability of the revised schedule." These items were addressed in Reference 9. The due date proposed in Reference 9, March 12, 2015, was accepted by the NRC in Reference 10.

The purpose of this letter is to request an additional extension to the scheduled submittal date for the PBAPS Flooding Hazard Reevaluation Report. The information requested in Reference 4 (the reason for the delay; a proposed schedule for the submittal of a complete Hazard Reevaluation Report; and the basis for the acceptability of the revised schedule) are provided below.

1. **Reason for the Delay** – EGC is developing a detailed hydrologic model of the Susquehanna River watershed for the flooding hazard for the PBAPS site. In Reference 9, EGC requested a 1-year extension to complete the flood hazard reevaluation for the PBAPS based, in part, on the development of a site-specific hydrometeorological study for the Susquehanna River watershed. Additional time is required to complete the model

and accommodate the detailed hydrometeorological study. Additional details are provided below:

- Coincident to the PBAPS flood hazard reevaluation, Federal Energy Regulatory Commission (FERC) requested that Exelon complete a probable maximum flood (PMF) study of the Susquehanna River watershed for Exelon's Conowingo Hydroelectric Dam, located just downstream of PBAPS. The Conowingo PMF study also includes a site-specific hydrometeorological study of the watershed.
- The site-specific hydrometeorological study for the PBAPS, completed in April 2014, was part of the same study being developed for Conowingo. The study completed for the PBAPS is being further optimized to improve accuracy for Conowingo. The Conowingo study is also being subjected to a thorough review by the "Board of Consultants" (BOC), made up of independent experts, as required by FERC, to perform detailed technical reviews.
- The March 12, 2015 extension deadline was established (in References 9 and 10) to use best-available site-specific hydrometeorological data for the PBAPS, with an understanding that further optimization for Conowingo would not result in significant differences.
- In the months following the extension request (Reference 9), it became apparent that the PBAPS and Conowingo data diverged more than anticipated due, in part, to decisions around inclusion/exclusion of storms and refinements to better account for orographic affects. Also during this time, consensus between EGC and federal agency stakeholders (NRC, FERC, and USACE) was reached to establish as much consistency as possible in the PMF studies for the three Exelon sites (PBAPS, TMI, and Conowingo). EGC would like to maintain alignment by using identical site-specific hydrometeorological input data between the PBAPS and Conowingo PMF studies.
- Using BOC-approved site-specific hydrometeorological data is mutually advantageous by:
 - Driving consistency and alignment between agencies and the three Exelon sites;
 - Shortening review time, knowing that these key inputs have had the extensive review and approval of the BOC; and
 - Facilitating the USACE confirmatory study in using Exelon models with BOC-approved inputs.

2. **Proposed schedule for the submittal of a complete Flood Hazard Reevaluation Report** – EGC is proposing to complete and submit the Flood Hazard Reevaluation Report on August 12, 2015, with planned interim milestones listed below.

- December 9, 2014 – BOC approval of Conowingo site-specific hydrometeorological data (complete).
- February 20, 2015 – Complete development of the Probable Maximum Flood (PMF) and upstream dam failure hydrographs.
- June 15, 2015 – Complete calculations of flood level and associated effects at the PBAPS for the applicable combined-effect floods in Appendix H of Reference 8.
- July 17, 2015 – Flood Hazard Reevaluation Report - submitted to site for review.
- July 31, 2015 – Flood Hazard Reevaluation Report – Site Technical Verification Team approval.

3. Basis for the acceptability of the revised schedule

- As recognized in the NRC's March 12, 2012 50.54(f) letter (Reference 1), the current regulatory approach and resultant plant capabilities provide confidence that an accident with consequences similar to the Fukushima accident is unlikely to occur in the United States, and that continued plant operation does not pose an imminent risk to public health and safety. Therefore, the additional duration of this extension request has no impact on safe plant operation.
- The PBAPS recently performed walkdowns that verified its current flooding licensing basis (Reference 5). During the walkdowns, all features were determined to be acceptable or deficiencies were entered into the corrective action program and determined to be operable. Therefore, PBAPS is protected from current design basis flood events.
- The events being analyzed in the PBAPS Flooding Hazard Reevaluation are beyond the plant's design and licensing basis. Therefore, the reevaluation results based on beyond design basis events do not constitute an operability concern. This is consistent with the NRC supplemental information letter dated March 1, 2013 (Reference 4).
- The reevaluated PMF is a very low probability event, and the time frame represented by the additional extension would result in an insignificant contribution to the overall risk. The normal elevation of Conowingo Pond is between 104 feet to 109.25 feet (all elevations are Conowingo Datum, which is 0.7 feet above Mean Sea Level). During the record flood of 1972, the water level rose to 113.5 feet, exclusive of wave run-up. The current licensing basis PMF produces maximum still water elevation of 131.5 feet, plus a flood-wave of 0.5 foot for a postulated upstream dam failure which results in a maximum elevation of 132.0 feet. PBAPS structures required for safe shutdown are flood protected to elevation 135 feet, which demonstrates considerable margin above the worst historic event and design basis PMF.

- As a result of operating procedure simulations, PBAPS revised Special Event Flood Procedure (SE-4) and the System Operating Procedure for Emergency Cooling Water System Startup (SO 48.1.B). Changes were made to the sequence of steps only, which resulted in a reduction in the time required for operators to take flood mitigation actions.
- As a result of review of Available Physical Margin, PBAPS revised Special Event Flood Procedure (SE-4) to add sandbags at the Emergency Cooling Tower Door. This is an interim mitigating action for protection against the maximum wind-generated waves.
- PBAPS has completed calculations for the site drainage response to a Local Intense Precipitation event and the Rock Run Creek PMF, and determined these flood causing mechanisms do not pose a threat to plant safety. There are no required interim actions resulting from the completed calculations.

These actions provide a sufficient level of flood hazard protection for the period of the additional extension request. No additional flood hazard mitigation or protection actions beyond those identified above are warranted for the period of the extension request.

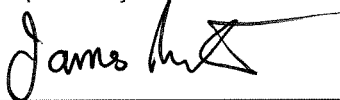
Based on the above determinations, EGC has concluded that the requested extension to the scheduled submittal date for the PBAPS Flooding Hazard Reevaluation Report does not impact safe plant operation or represent an undue risk to public health and safety. Accordingly, EGC requests NRC approval to further extend the scheduled submittal date for the PBAPS Flooding Hazard Reevaluation Report to August 12, 2015.

A list of regulatory commitments contained in this letter is provided in Enclosure 1.

If you have any questions regarding this submittal, please contact Ron Gaston at (630) 657-3359.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 5th day of January 2015.

Respectfully submitted,



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

Enclosure:

1. Summary of Regulatory Commitments

cc: Director, Office of Nuclear Reactor Regulation
Regional Administrator - NRC Region I
NRC Senior Resident Inspector – Peach Bottom Atomic Power Station
NRC Project Manager, NRR – Peach Bottom Atomic Power Station
Mr. Robert F. Kuntz, NRR/JLD/JHMB, NRC
Director, Bureau of Radiation Protection – Pennsylvania Department of Environmental
Resources
S. T. Gray, State of Maryland
R. R. Janati, Chief, Division of Nuclear Safety, Pennsylvania Department of
Environmental Protection, Bureau of Radiation Protection

ENCLOSURE 1

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC's information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	PROGRAMMATIC (Yes/No)
Peach Bottom Atomic Power Station, Units 2 and 3 will submit the Flooding Hazard Reevaluation Report, including interim action plan, requested in Item 1.d of Enclosure 2 of NRC Letter, Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, dated March 12, 2012.	August 12, 2015	Yes	No