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~~UNITED STATES~~

NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 31, 2016

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3– INTERIM
STAFF RESPONSE TO REEVALUATED FLOOD HAZARDS SUBMITTED IN
RESPONSE TO 10 CFR 50.54(f) INFORMATION REQUEST – FLOOD-
CAUSING MECHANISM REEVALUATION (CAC NOS. MF6598 AND MF6599)

Dear Mr. Hanson:

The purpose of this letter is to provide a summary of the U.S. Nuclear Regulatory Commission (NRC) staff's assessment of the reevaluated flood-causing mechanisms described in the August 12, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15233A067), flood hazard reevaluation report (FHRR) submitted by Exelon Generation Company, LLC (the licensee) for Peach Bottom Atomic Power Station, Units 2 and 3 (Peach Bottom), as well as supplemental information resulting from requests for additional information and audits.

By letter dated March 12, 2012, the NRC issued a request for information pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.54(f) (hereafter referred to as the 50.54(f) letter) (ADAMS Accession No. ML12053A340). The request was issued as part of implementing lessons-learned from the accident at the Fukushima Dai-ichi nuclear power plant. Enclosure 2 to the 50.54(f) letter requested licensees to re-evaluate flood-causing mechanisms using present-day methodologies and guidance. Concurrently with the reevaluation of flooding hazards, licensees were required to develop and implement mitigating strategies in accordance with NRC Order EA-12-049, "Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12054A735). On March 30, 2015, the Commission provided Staff Requirements Memoranda (SRM) (ADAMS Accession No. ML15089A236) to COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards," dated November 21, 2014 (ADAMS Accession No. ML14309A256), affirming that licensees need to address the reevaluated flooding hazards within their mitigating strategies for beyond-design-basis external events.

Enclosure two transmitted herewith contains Security-Related Information. When separated from the Enclosure, this document is decontrolled.

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B. Hanson

- 2 -

The NRC staff has reviewed the information submitted by the licensee and has summarized the results of the review in the tables provided as Enclosure 1 to this letter. Table 1 provides the current design-basis flood hazard mechanisms. Table 2 provides reevaluated flood hazard mechanisms; however, reevaluated hazard mechanisms bounded by the current design-basis (Table 1) are not included. Because Table 2 includes security-related information, Enclosure 1 contains the redacted version of Table 2. Enclosure 2 is withheld from public disclosure and restores the security-related information to Table 2.

The NRC staff has concluded that the licensee's reevaluated flood hazards information, as summarized in the Enclosure, is suitable for the assessment of mitigating strategies developed in response to Order EA-12-049 (i.e., defines the mitigating strategies flood hazard information described in Nuclear Energy Institute (NEI) guidance document NEI 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide") for Peach Bottom. Further, the NRC staff has concluded that the licensee's reevaluated flood hazard information is a suitable input for other assessments associated with Near-Term Task Force Recommendation 2.1 "Flooding". The NRC staff plans to issue a staff assessment documenting the basis for these conclusions at a later time.

Revision 2 of NEI 12-06 includes a methodology to perform a Mitigating Strategies Assessment (MSA) with respect to the reevaluated flood hazards. On February 29, 2016, the NRC staff published Japan Lessons-Learned Division (JLD) Interim Staff Guidance (ISG) JLD-ISG-2012-01, Revision 1, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (ADAMS Accession No. ML15357A142) in the *Federal Register* (81 FR 10283). This ISG endorses Revision 2 of NEI 12-06 (ADAMS Accession No. ML16005A625), dated December 2015. Based on the guidance provided in Revision 2 of the NEI 12-06 guidance document, flood event duration parameters and applicable flood associated effects should be considered as part of the Peach Bottom MSA. The NRC staff will evaluate the flood event duration parameters (including warning time and period of inundation) and flood-related associated effects developed by the licensee during the NRC staff's review of the MSA.

As stated above, Table 2 of the enclosure to this letter describes the reevaluated flood hazards that exceed the current design-basis. In order to complete its response to the information requested by Enclosure 2 to the 50.54(f) letter, the licensee is expected to submit an integrated assessment or a focused evaluation, as appropriate, to address these reevaluated flood hazards, as described in the NRC letter, "Coordination of Request for Information Regarding Flooding Hazard Reevaluation and Mitigating Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML15174A257). This letter describes the changes in the NRC's approach to the flood hazard reevaluations that were approved by the Commission in its SRM to COMSECY-15-0019, "Closure Plan for the Reevaluation of Flooding Hazards for Operating Nuclear Power Plants" (ADAMS Accession No. ML15209A682).

B. Hanson

- 3 -

If you have any questions, please contact me at (301) 415-6197 or e-mail at Tekia.Govan@nrc.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tekia Govan', followed by the word 'for'.

Tekia Govan, Project Manager
Hazards Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

Docket Nos. 50-277 and 50-278

Enclosures:

1. Summary of Results of Flooding Hazard
Re-Evaluation Report (Redacted Version)
2. Summary of Results of Flooding Hazard
Re-Evaluation Report (Non-Public Version)

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ENCLOSURE 1:

SUMMARY TABLES OF
REEVALUATED FLOOD HAZARD LEVELS
[REDACTED VERSION]

Table 1. Current Design Basis Flood Hazards for Use in the MSA

Mechanism	Stillwater Elevation	Waves/ Runup	Design Basis Hazard Elevation	Reference
Local Intense Precipitation	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.1
Streams and Rivers				
Probable Maximum Flooding from Rock Run Creek	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.2.2
Probable Maximum Flooding from Susquehanna River	131.4 ft NAVD88	Not applicable	131.4 ft NAVD88	FHRR Section 2.3.2.1
REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Failure of Dams and Onsite Water Control/Storage Structures				
REDACTED	REDACTED	REDACTED	REDACTED	REDACTED
Storm Surge	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.4
Seiche	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.5
Tsunami	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.6

Table 1. Current Design Basis Flood Hazards for Use in the MSA

Mechanism	Stillwater Elevation	Waves/ Runup	Design Basis Hazard Elevation	Reference
Ice-Induced Flooding	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.7
Channel Migrations/Diversions	Not included in DB	Not included in DB	Not included in DB	FHRR Section 2.3.8

Note 1: Reported values are rounded to the nearest one-tenth of a foot.

B. Hanson

- 3 -

If you have any questions, please contact me at (301) 415-6197 or e-mail at Tekia.Govan@nrc.gov.

Sincerely,

/RA by Juan Uribe for/

Tekia Govan, Project Manager
Hazards Management Branch
Japan Lessons-Learned Division
Office of Nuclear Reactor Regulation

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ADAMS Accession Nos.: PKG: ML16091A120; LTR: ML16091A136ENCL1: ML16089A353 (PUBLIC);
ENCL2: ML16089A364 (NON-PUBLIC) *via email

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NAME	MShams	TGovan (JUriebe for)		
DATE	3/ 31/2016	3/ 31/2016		

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