



South Texas Project Electric Generating Station P.O. Box 289 Wadsworth, Texas 77483

September 29, 2016
NOC-AE-16003356
10 CFR 50.54(f)

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

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
STP Nuclear Operating Company Flooding Mitigating Strategies Assessment (MSA) Report Submittal

References:

1. Letter from E.J. Leeds, NRC, to All Power Reactor Licensees, "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", March 12, 2012 (AE-NOC-12002269) (ML12053A340)
2. Letter from G.T. Powell, STPNOC, to NRC Document Control Desk, "Response to NRC Request for Information Pursuant to 10 CFR 50.54(f) Regarding Recommendation 2.1 Flooding of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident, Enclosure 2, Required Response 2, Flood Hazard Reevaluation Report", March 11, 2013 (NOC-AE-13002975)(ML13079A806)
3. Letter from G.T. Powell, STPNOC, to NRC Document Control Desk, "STPNOC Partial Response to Request for Additional Information Associated With Near-Term Task Force Recommendation 2.1, Flood Hazard Reevaluation (TAC Nos. MF1110 and MF1111)", January 22, 2014 (NOC-AE-14003074)(ML14041A336)
4. Letter from G.T. Powell, STPNOC, to NRC Document Control Desk, "STPNOC Second Partial Response to Request for Additional Information Associated With Near-Term Task Force Recommendation 2.1, Flood Hazard Reevaluation (TAC Nos. MF1110 and MF1111)", February 13, 2014 (NOC-AE-14003085)(ML14056A195)
5. NRC Staff Requirements Memoranda to COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards", March 30, 2015 (ML15089A236)
6. Nuclear Energy Institute (NEI) guidance, NEI 12-06, Revision 2, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide, December 2015 (ML16005A625)
7. U.S. Nuclear Regulatory Commission, JLD-ISG-2012-01, Revision 1, "Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events", January 22, 2016 (ML15357A163)

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8. Letter from R.F. Kuntz, NRC, to D.L. Koehl, STPNOC, "South Texas Project, Units 1 and 2 – Staff Assessment of Response to 10 CFR 50.54(f) Information Request Flood-Causing Mechanism Reevaluation (TAC Nos. MF1110 and MF1111)", September 30, 2014 (AE-NOC-14002569)(ML14259A195)
9. Letter from E.J. Leeds, NRC, to All Power Reactor Licensees, "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", March 1, 2013 (AE-NOC-13002407)(ML13044A561)
10. Letter from G.T. Powell, STPNOC, to NRC Document Control Desk, "Notification of Full Compliance with Order EA-12-049 for Mitigation Strategies for Beyond Design Basis External Events and Update for Order EA-12-051 for Reliable Spent Fuel Pool Instrumentation", February 17, 2016 (NOC-AE-15003311)(ML16067A088)

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 Reference 1 directed licensees to submit a Flood Hazard Reevaluation Report (FHRR). For STPNOC, the FHRR was submitted on March 11, 2013 (Reference 2). The reevaluated flood hazard was further developed in response to requests for additional information (References 3 and 4).

Concurrent with the flood hazard reevaluation, STPNOC developed and implemented mitigating strategies in accordance with NRC Order EA-12-049, "Requirements for Mitigation Strategies for Beyond-Design-Basis External Events". In Reference 5, the NRC affirmed that licensees need to address the reevaluated flooding hazards within their mitigating strategies for beyond-design-basis external events. Guidance for performing Mitigating Strategies Assessments (MSAs) is contained in Appendix G of NEI 12-06, Revision 2 (Reference 6). This NEI guidance was endorsed by the NRC in Reference 7.

NEI 12-06 Appendix G describes the MSA for flooding as containing the following elements:

- Section G.2 – Characterization of the Mitigating Strategies Flood Hazard Information (MSFHI)
- Section G.3 – Comparison of the MSFHI and FLEX Design Basis Flood

STPNOC did not include Sections G.4.1, G.4.2, G.4.3, nor G.4.4 in the MSA because the FLEX design basis flood is the same as the site design basis flood and it bounds the MSFHI.

The MSA results for STPNOC are as follows:

Section G.2 – Characterization of the Mitigating Strategies Flood Hazard Information (MSFHI)

A summary of the controlling reevaluated flood-causing mechanisms is included in Table 3.0-1 of the NRC assessment of the STPNOC flood hazard reevaluation submittal (Reference 8). A more detailed description of the MSFHI, along with the basis for inputs, assumptions, methodologies, and models, is provided in the following references:

- Local Intense Precipitation: See Section 2.1 of Reference 2, Enclosure
- Flooding in Streams and Rivers: See Section 2.2 of Reference 2, Enclosure
- Dam Breaches and Failures: See Section 2.3 of Reference 2, Enclosure
- Storm Surge: See Section 2.4 of Reference 2, Enclosure
- Seiche: See Section 2.5 of Reference 2, Enclosure
- Tsunami: See Section 2.6 of Reference 2, Enclosure
- Ice-Induced Flooding: See Section 2.7 of Reference 2, Enclosure
- Channel Migration or Diversion: See Section 2.8 of Reference 2, Enclosure
- Combined Effects (including wind-waves and run-up effects): See Section 2.9 of Reference 2, Enclosure in addition to References 3 and 4
- Flood Event Duration Parameters: See Section 2.3.2 of Reference 2, Enclosure

Based on the results of the reevaluation of each of the applicable flooding mechanisms for the South Texas Project Electric Generating Station (STPEGS) site, STPNOC determined that the current design basis flood protection measures implemented at the site will provide adequate protection against the reevaluated flood hazards. Specifically, as described in Section 3 of the STP FHRR (Reference 2), the flooding reevaluation confirms that the controlling flooding mechanism in the current design basis for the plant structures and the Essential Cooling Water Intake Structure (ECWIS) remains the postulated instantaneous Main Cooling Reservoir (MCR) embankment breach described in the Updated Final Safety Analysis Report (UFSAR).

Further, the results of the flooding reevaluation provided in Section 2 of the STP FHRR (Reference 2) demonstrate that the current design basis flood elevations, which vary between 44.5 and 50.8 feet Mean Sea Level (MSL) for the plant structures within the power block and 40.8 feet MSL at the ECWIS, remain the bounding water levels from all external event flood sources. In addition to the maximum flood elevations, the reevaluation also includes assessments of hazards associated with flooding such as duration of inundation, impact forces on structures, effects of scouring, erosion, sedimentation, waterborne missiles and debris.

Section G.3 – Comparison of the MSFHI and FLEX Design Basis Flood

For STPNOC, the FLEX design basis flood, described in Reference 10, is equivalent to the plant's Current Design Basis (CDB) flood. A complete comparison of the CDB flood hazards and the reevaluated flood hazards is provided in Section 3 of the Enclosure for Reference 2.

In Reference 8, the NRC confirmed STPs conclusions that (a) the reevaluated hazard results for each reevaluated flood-causing mechanism are bounded by the current design basis flood hazard, and (b) an Integrated Assessment is not necessary. Additionally, per Reference 9, the NRC considers the reevaluated flood hazard to be beyond the current design and licensing basis of operating plants and therefore the reevaluated results should not generally be expected to call into question the operability or functionality of structures, systems and components (SSCs).


The FLEX design basis flood bounds the reevaluated flood (i.e. MSFHI) for all applicable flood-causing mechanisms, including associated effects and flood event duration parameters. This conclusion was affirmed by the NRC, therefore STPNOC considers the requirement to address the reevaluated flooding hazards within its beyond-design-basis mitigating strategies as being satisfied with no further action required.

There are no commitments in this letter.

If there are any questions regarding this letter, please contact Wendy Brost at (361) 972-8516 or me at (361) 972-7697.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 9-29-16
Date



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