PSEG Nuclear LLC
P.O. Box 236, Hancocks Bridge, NJ 08038-0236

PSEG
Nuclear LLC

10 CFR 50.54(f)

LR-N17-0077

JUN 27 2017

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

Hope Creek Generating Station
Renewed Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Focused Evaluation of External Flooding for Hope Creek Generating Station

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 (ADAMS Accession No. ML12053A340).

2. PSEG Letter LR-N14-0041, "PSEG Nuclear LLC's Response to Request for Information Regarding Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident – Hope Creek Generating Station Flood Hazard Reevaluation," dated March 12, 2014 (ADAMS Accession No. ML14071A511).

3. NRC Letter, "Coordination of Requests for Information Regarding Flooding Hazard Reevaluations and Mitigating Strategies for Beyond-Design-Basis External Events," dated September 1, 2015 (ADAMS Accession No. ML15174A257).

4. NRC Letter, "Hope Creek Generating Station – Interim Staff Response to Reevaluated Flood Hazards Submitted in Response to 10 CFR 50.54(f) Information Request – Flood-Causing Mechanism Reevaluation (TAC No. MF3789)," dated September 10, 2015 (ADAMS Accession No. ML15238B655).

5. NRC Letter, "Hope Creek Generating Station - Staff Assessment of Response to 10 CFR 50.54(f) Information Request – Flood-Causing Mechanism Reevaluation (CAC No. MF3789)," dated October 25, 2016 (ADAMS Accession No. ML16266A281).

6. Nuclear Energy Institute (NEI), Report NEI 16-05, "External Flooding Assessment Guidelines," Revision 1 dated June 2016 (ADAMS Accession No. ML16165A178).

7. NRC Interim Staff Guidance JLD-ISG-2016-01, "Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flood Hazard Reevaluation; Focused Evaluation and Integrated Assessment," Revision 0, dated July 11, 2016 (ADAMS Accession No. ML16162A301).

The purpose of this letter is to provide the Hope Creek Generating Station (HCGS) Focused Evaluation of reevaluated external flood hazards in response to the NRC staff's information request (Reference 1) associated with Near Term Task Force (NTTF) Recommendation 2.1, Flooding. Reference 1 directed licensees to submit a Flood Hazard Reevaluation Report (FHRR), which was to be followed by an Integrated Assessment of any flooding mechanisms that are not bounded by the current design basis. PSEG submitted the FHRR via Reference 2, which included a commitment to perform an Integrated Assessment for Local Intense Precipitation (LIP) consistent with the information requested in Reference 1. The NRC staff subsequently revised the regulatory approach for determining the need for and scope of the Integrated Assessment, using a graded approach commensurate with safety significance as described in Reference 3. In addition, NRC staff assessments of the reevaluated flood hazard mechanisms concluded that the LIP is the mechanism of interest for further evaluation because it is the only flood mechanism at HCGS whose reevaluated water surface elevation is not bounded by the current design basis (References 4 and 5).

In order to support implementation of the revised approach to Integrated Assessment, the Nuclear Energy Institute (NEI) issued NEI 16-05 (Reference 6), which was endorsed by the NRC with clarifications via Reference 7. Based on these current guidance documents, Focused Evaluation of the LIP event is applicable to HCGS. Attachment 1 contains the Focused Evaluation, which uses NEI 16-05, Path 2, "Demonstrate Effective Protection." PSEG determined Path 2 to be applicable to HCGS because flood protection features, significant available physical margin (APM) to the LIP flood levels, and PSEG procedures are relied upon to maintain the key safety functions of core cooling, spent fuel pool cooling, and containment function.

This submittal completes the response to NTTF Recommendation 2.1, Flooding, for HCGS, and is the basis for closure of the commitment in Reference 2 to perform an Integrated Assessment.

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There are no regulatory commitments contained in this letter. If you have any questions or require additional information, please do not hesitate to contact Mr. Brian J. Thomas at 856-339-2022.

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

Executed on June 27, 2017
(Date)

Sincerely,

Eric Carr
Site Vice President
Hope Creek Generating Station

Attachment 1: Hope Creek Generating Station Flooding Focused Evaluation

cc: Mr. Daniel Dorman, Administrator, Region I, NRC
Mr. Justin Hawkins, NRC Senior Resident Inspector, Hope Creek
Ms. Lisa M. Regner, Project Manager, NRC/NRR/DORL
Ms. Tekia Govan, Project Manager, NRC/NRR/JLD
Mr. Patrick Mulligan, Chief, NJBNE
Mr. Thomas MacEwen, Hope Creek Commitment Tracking Coordinator
Mr. Lee Marabella, PSEG Corporate Commitment Coordinator

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ATTACHMENT 1

HOPE CREEK GENERATING STATION

FLOODING FOCUSED EVALUATION

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Attachment 1

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HOPE CREEK GENERATING STATION FLOODING FOCUSED EVALUATION

References in this attachment are listed in Section 3.

1 EXECUTIVE SUMMARY

PSEG has reevaluated the Hope Creek Generating Station (HCGS) flooding hazard in accordance with the NRC's March 12, 2012, 10 CFR 50.54(f) request for information (Reference 1), which was issued as part of implementing lessons learned from the Fukushima Dai-ichi accident. The requested flooding hazard reevaluations specifically address Recommendation 2.1 of the NRC's Near-Term Task Force (NTTF) review. PSEG submitted this information to NRC in a flood hazard reevaluation report (FHRR) on March 11, 2014 (Reference 2), with additional information provided via References 3, 4 and 5. The NRC staff's assessment of the reevaluated flooding hazard information is summarized in References 6 and 7, which describe the Mitigating Strategies Flood Hazard Information (MSFHI) as a suitable input to this Focused Evaluation (FE). PSEG did not perform any changes to the reevaluated flooding hazards analyses since the issuance of Reference 6, and the MSFHI based on the flooding analyses serves as the input to this FE. There is one mechanism that was found to exceed the design basis flood level at HCGS. This mechanism is listed below and included in this FE.

Local Intense Precipitation (LIP)

The reevaluated LIP, including associated effects (AE) and flood event duration (FED) parameters, was assessed and submitted as a part of the FHRR and the flooding hazards mitigating strategies assessment (MSA) via References 2 and 8, respectively. This FE concludes that all vulnerabilities due to the LIP mechanism are addressed by permanent flood protection features, and available physical margin (APM) was demonstrated to be adequate to protect Key SSCs (defined in Section 4 below). This FE followed Path 2 of NEI 16-05, Revision 1 (Reference 9), and utilized Appendices B and C for guidance on evaluating the site strategy. This submittal completes the actions related to external flooding required by the March 12, 2012, 10 CFR 50.54(f) letter (Reference 1).

2 BACKGROUND

On March 12, 2012, the NRC issued Reference 1 to request information associated with NTTF Recommendation 2.1 for flooding. Reference 1 directed licensees, in part, to submit a FHRR to reevaluate the flood hazards for their sites using present-day methods and guidance used for early site permits and combined operating licenses. For HCGS, the FHRR was submitted on March 12, 2014 (Reference 2), and it included a commitment to perform an integrated assessment of unbounded flood hazard mechanisms consistent with the NRC information request in Reference 1. PSEG provided additional FHRR information to the NRC in References 3, 4 and 5.

Following the Commission's directive in Reference 10, the NRC staff issued a letter to industry (Reference 11) indicating that new guidance is being prepared to provide for a "graded approach to flooding reevaluations" and "more focused evaluations of local intense precipitation and available physical margin in lieu of proceeding to an integrated assessment." NEI prepared the new "External Flooding Assessment Guidelines" in NEI 16-05 (Reference 9), which was endorsed by the NRC in Reference 12. NEI 16-05 indicates that each flood-causing mechanism not bounded by the design basis flood (using only stillwater and/or wind-wave run-up level) should follow one of the following five assessment paths:

- Path 1: Demonstrate Flood Mechanism is Bounded Through Improve Realism
- Path 2: Demonstrate Effective Flood Protection
- Path 3: Demonstrate a Feasible Response to LIP
- Path 4: Demonstrate Effective Flood Mitigation
- Path 5: Scenario Based Approach

Non-bounded flood-causing mechanisms in Paths 1, 2, or 3 would only require an FE to complete the actions related to external flooding required by the 10 CFR 50.54(f) letter. Mechanisms in Paths 4 or 5 require an Integrated Assessment. HCGS follows Path 2 as described below in Section 5.

3 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 (ADAMS Accession No. ML12053A340).

2. PSEG Letter LR-N14-0041, "PSEG Nuclear LLC's Response to Request for Information Regarding Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident – Hope Creek Generating Station Flood Hazard Reevaluation," dated March 12, 2014 (ADAMS Accession No. ML14071A511).

3. PSEG Letter LR-N14-0170, "PSEG Nuclear LLC's 30-day Response to Request for Additional Information Regarding Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated July 28, 2014.

4. PSEG Letter LR-N14-0207, "PSEG Nuclear LLC's 90-day Response to Request for Additional Information Regarding Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated September 23, 2014 (ADAMS Accession No. ML14268A469).

5. PSEG Letter LR-N15-0100, "Hope Creek Generating Station's Response to Request for Additional Information Regarding Flooding Aspects of Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated May 7, 2015 (ADAMS Accession No. ML15128A370).

6. NRC Letter, "Hope Creek Generating Station – Interim Staff Response to Reevaluated Flood Hazards Submitted in Response to 10 CFR 50.54(f) Information Request – Flood-Causing Mechanism Reevaluation (TAC No. MF3789)," dated September 10, 2015 (ADAMS Accession No. ML15238B655).

7. NRC Letter, "Hope Creek Generating Station - Staff Assessment of Response to 10 CFR 50.54(f) Information Request – Flood-Causing Mechanism Reevaluation (CAC No. MF3789)," dated October 25, 2016 (ADAMS Accession No. ML16266A281).

8. PSEG Letter LR-N16-0112, "Hope Creek Generating Station's Flood Hazards Mitigating Strategies Assessment (MSA) Report Submittal," dated December 29, 2016 (ADAMS Accession No. ML16364A217).

9. Nuclear Energy Institute (NEI), Report NEI 16-05, "External Flooding Assessment Guidelines," Revision 1 dated June 2016 (ADAMS Accession No. ML16165A178).

10. NRC Staff Requirements Memorandum, “Staff Requirements - COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards," dated March 30, 2015 (ADAMS Accession No. ML15089A236).

11. NRC Letter, “Coordination of Requests for Information Regarding Flooding Hazard Reevaluations and Mitigating Strategies for Beyond-Design-Basis External Events,” dated September 1, 2015 (ADAMS Accession No. ML15174A257).

12. NRC Interim Staff Guidance JLD-ISG-2016-01, “Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flood Hazard Reevaluation; Focused Evaluation and Integrated Assessment,” Revision 0, dated July 11, 2016 (ADAMS Accession No. ML16162A301).

13. NEI 12-06, “Diverse and Flexible Coping Strategies (FLEX) Implementation Guide,” Revision 2, dated December 2015 (ADAMS Accession No. ML16005A625).

14. PSEG Document OP-AA-108-111-1001, “Severe Weather and Natural Disaster Guidelines,” Revision 14.

15. PSEG Document HC.OP-AB.MISC-0001, “Acts of Nature,” Revision 30.

16. PSEG Letter LR-N12-0369, “Hope Creek Generating Station Response to Recommendation 2.3: Flooding Walkdown of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident,” dated November 26, 2012 (ADAMS Accession No. ML12334A452).

17. NRC Letter, “Hope Creek Generating Station – Audit Report Regarding Flooding Walkdowns to Support Implementation of Near-Term Task Force Recommendation 2.3 Related to the Fukushima Dai-ichi Nuclear Power Plant Accident (TAC No. MF0236),” dated November 18, 2013 (ADAMS Accession No. ML13266A297).

18. NRC Letter, “Hope Creek Generating Station – Staff Assessment of Flooding Walkdown Report Supporting Implementation of Near-Term Task Force Recommendation 2.3 Related to the Fukushima Dai-ichi Nuclear Power Plant Accident (TAC No. MF0236),” dated June 16, 2014 (ADAMS Accession No. ML14042A329).

19. NEI 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features," Revision 0-A dated May 2012 (ADAMS Accession No. ML12173A215).

20. PSEG Document ER-AA-310-101, “Condition Monitoring of Structures,” Revision 0.

21. PSEG Document HC.FP-SV.ZZ-0026, "Flood and Fire Barrier Penetration Seal Inspection," Revision 7.

22. PSEG Document HC.MD-PM.ZZ-0007, "Missile Resistant and Watertight Doors P.M.," Revision 11.

23. PSEG Document OP-HC-112-101-1001-F2, "Control Room Supervisor – Relief Checklist," Revision 1.

4 TERMS AND DEFINITIONS

- AE – Associated Effects
- APM – Available Physical Margin
- CLB – Current Licensing Basis
- DB – Design Basis
- FE – Focused Evaluation
- FED – Flood Event Duration
- FHRR – Flood Hazard Reevaluation Report
- FIAP – Flooding Impact Assessment Process
- FLEX – Diverse and flexible coping strategies covered by NRC order EA-12-049
- HCGS – Hope Creek Generating Station
- Key SSC – The existing installed design basis structures, systems and components (SSCs) at the site required to support a KSF where a failure of the SSC could lead to the loss of the KSF. These Key SSCs do not include the flood protection features or mitigation equipment (e.g. FLEX equipment).
- KSF – Key Safety Function, i.e. core cooling, spent fuel pool cooling, or containment function.
- LIP – Local Intense Precipitation
- MSA – Mitigating Strategies Assessment as described in NEI 12-06 Revision 2 (Reference 13), Appendix G
- MSFHI – Mitigating Strategies Flood Hazard Information
- NEI – Nuclear Energy Institute
- NTTF – Near-Term Task Force commissioned by the NRC to recommend actions following the Fukushima Dai-ichi accidents
- NWS – National Weather Service
- PQPF – Probabilistic Quantitative Precipitation Forecast
- PSD – Public Service Datum. Nominal site grade elevation at HCGS is approximately 101.5 ft. PSD
- SSCs – Structures, Systems and Components

5 FLOOD HAZARD PARAMETERS FOR UNBOUNDED MECHANISMS

NRC has completed the "Interim Staff Response to Reevaluated Flood Hazards" (Reference 6) which contains the Mitigating Strategies Flood Hazard Information (MSFHI) related to the FHRR for HCGS (Reference 2). In Reference 6, the NRC states that the "staff has concluded that the licensee's reevaluated flood hazards information… is suitable for the assessment of mitigation strategies developed in response to Order EA-12-049 (i.e., defines the mitigating strategies flood hazard information described in guidance documents currently being finalized by the industry and NRC staff) for Hope Creek. 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 enclosure to Reference 6 includes a summary of the current design basis and reevaluated flood hazard parameters, respectively. In Table 1 of the enclosure to Reference 6, the NRC lists the following flood-causing mechanisms for the design basis flood:

- LIP;
- Streams and Rivers;
- Failure of Dams and Onsite Water Control/Storage Structures;
- Storm Surge;
- Seiche;
- Tsunami;
- Ice Induced Flooding; and
- Channel Migrations/Diversions.

In Table 2 of the enclosure to Reference 6, the NRC lists flood hazard information (specifically stillwater elevation and wind-wave run-up elevation) for the following flood-causing mechanism that is not bounded by the design basis hazard flood level:

- LIP

PSEG did not perform any changes to the reevaluated flooding hazards analyses since the issuance of Reference 6. The subsequent NRC staff assessment (Reference 7) supports the conclusions of the interim staff response (Reference 6) and reiterates the expectation that PSEG will perform an FE of the LIP event as the unbounded flood mechanism.

The non-bounded LIP flood mechanism for HCGS is described in detail in References 2, 3 and 5. The following summarizes how the unbounded mechanism was addressed in this external flooding assessment:

Flood Mechanism	Summary of Assessment
Local Intense Precipitation	A1. NEI 16-05 (Reference 9) Path 2, "Demonstrate Effective Protection," was determined to be applicable to HCGS because flood protection features, significant APM to the LIP flood levels, and PSEG procedures are relied upon to maintain KSFs (see Table 6-3, "FIAP Evaluation Path Determination Criteria," in Section 6.3.3. of NEI 16-05).

6 OVERALL SITE FLOODING RESPONSE

6.1 DESCRIPTION OF OVERALL SITE FLOODING RESPONSE

As discussed in Reference 2, the reevaluated LIP event could produce flood levels that are above the watertight door thresholds, but significantly below the plant's minimum flood-protected elevation of 121 ft. Public Service Datum (PSD). The plant's design basis flood protection features are established to mitigate the effects of a hurricane storm surge event that produces a significantly higher flood elevation than the LIP event. A LIP event alone cannot produce a water surface elevation across the site to challenge HCGS's flood protection elevation. Only events where Delaware River water is pushed onto the site from a storm surge could challenge HCGS's installed flood protection features' design elevation. Due to the significant APM during a LIP event, an extended loss of AC power and loss of ultimate heat sink are not credible outcomes of a beyond design basis LIP event. Therefore, HCGS does not consider LIP to be an event that can challenge KSFs.

Protection of safety related SSCs is ensured by implementing severe weather guidance document OP-AA-108-111-1001, "Severe Weather and Natural Disaster Guidelines" (Reference 14) and abnormal operating procedure HC.OP-AB.MISC-0001, "Acts of Nature," (Reference 15) which have been revised as described below in Section 6.2.

6.2 Summary of Plant Modifications and Changes

Following submittal of the FHRR (Reference 2), PSEG revised OP-AA-108-111-1001 (Reference 14) to facilitate tracking and prediction of LIP events with potential to impact the HCGS site, and recommend closure of watertight doors based on LIP forecasts using the National Weather Service (NWS) Probabilistic Quantitative Precipitation Forecast (PQPF). PSEG also revised HC.OP-AB.MISC-0001 (Reference 15) to include actions to close Watertight Perimeter Doors if the PQPF predicts LIP to exceed 6 inches over the next 24 hours.

These measures assure that HCGS maintains significant APM during a LIP event.

7 FLOOD IMPACT ASSESSMENT

7.1 Local Intense Precipitation (Path 2 assessment)

7.1.1 Description of Flood Impact

HCGS relies on both passive and active incorporated flood protection features to establish its design basis flood protection. Doors and penetrations in exterior walls of the Auxiliary and Reactor Buildings are protected against water inflow up to elevation 127 ft. PSD for parts of the south exterior walls and up to elevation 121 ft. PSD of other exterior walls. Penetrations in exterior walls and slabs of the Station Service Water System intake structure are protected against water inflow up to elevation 121 ft. PSD for the north and east exterior walls and up to elevation 128.5 ft. PSD for other exterior walls and slabs. These flood protection features include the buildings themselves, penetration seals, waterproofing, and watertight doors. The flooding walkdown report (Reference 16) provides additional information on the flood protection features credited in the HCGS licensing basis.

In Table 2 of the enclosure to Reference 6, 12.8 ft. NAVD88 (102.6 ft. PSD) is identified as the reevaluated hazard elevation due to the LIP flooding mechanism at HCGS. As shown in Table 2.1-3 of Reference 2, watertight door thresholds at HCGS are at elevation 12.2 ft. NAVD88 (102.0 ft. PSD). The plant's design basis flood protection features are established to mitigate the effects of a hurricane storm surge event, with the flood protection elevations at 121 ft. PSD or higher. Therefore, the APM between the flood protection elevation and maximum LIP water surface elevation is greater than 18 ft. This represents a significant APM versus the LIP water depth of approximately 0.5 to 1.7 ft. above grade.

Key SSCs required for safe shutdown are located inside the flood protected Reactor Building, Auxiliary Building, and Station Service Water System intake structure. Since the maximum flood elevation does not impact any Key SSCs, there is no need to determine the consequential flood for LIP.

7.1.2 Adequate APM Justification and Reliability of Flood Protection

As discussed in Section 7.1.1 above, the APM between HCGS's flood protection elevation and maximum LIP water surface elevation is greater than 18 ft. This represents a significant APM versus the LIP water depth of approximately 0.5 to 1.7 ft.

above grade. Associated Effects during the LIP event were evaluated in References 2 and 8, and they were found to be minimal and bounded by the design basis of HCGS's flood protection features.

The HCGS flood protection features are part of the design and licensing basis of the plant and have clearly defined hydraulic capability characteristics. During HCGS's Response to Recommendation 2.3: Flooding Walkdown of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident (References 16, 17, and 18), HCGS's flood protection features were reviewed and show adequate margin above LIP flood elevations.

Evaluation of the overall effectiveness of the HCGS flood protection features was performed and documented in Reference 16. The review of the flood protection features design and licensing documentation, and subsequent field inspection of the applicable physical flood protection features was implemented per the guidance provided within NEI 12-07 (Reference 19). PSEG Nuclear has implemented ER-AA-310-101 "Condition Monitoring of Structures" (Reference 20) for condition monitoring of Maintenance Rule structures, such as with regard to the monitoring of flood control features: concrete walls and slabs, water-control structure elements, penetration seals, etc. Specific instructions regarding the inspection of HCGS penetration seals are addressed in HC.FP-SV.ZZ-0026, "Flood and Fire Barrier Penetration Seal Inspection" (Reference 21). Instruction regarding the inspection and maintenance of the HCGS watertight doors is addressed in HC.MD-PM.ZZ-0007, "Missile Resistant and Watertight Door P.M." (Reference 22).

7.1.3 Adequate Overall Site Response

Key SSCs are currently protected by means of permanent/passive measures and permanent active features, i.e., watertight doors. The reevaluated LIP event could produce flood levels that are above watertight door thresholds, but significantly below the plant's design basis flood protected elevation described in Section 1.5 of the FHRR (Reference 2). The overall strategy for protecting the HCGS from a LIP event requires simple and straightforward actions. Response to a LIP event begins with the Control Room Supervisor monitoring the National Weather Service for storm warnings once per shift per OP-HC-112-101-1001-F2, "Control Room Supervisor – Relief Checklist" (Reference 23). Plant safety is then ensured by implementing severe weather guidance (Reference 14) and an abnormal operating procedure (Reference 15), which instruct operators to close watertight doors. PSEG updated References 14 and 15 to include guidance on accessing the NWS PQPF. If the NWS PQPF predicts greater than 6 inches of rainfall in the next 24 hours, operators are instructed to close the Watertight Perimeter Doors. Command and control of the response is maintained within the station's organization, with no other resources or specialized equipment required to close the watertight doors. Access to watertight door locations is through the protected plant structures, with the exception of the Service Water Intake Structure. The watertight doors at the Service Water Intake Structure are approximately one quarter of a mile from flood protected power block structures. Given the sufficient warning time in advance of the event, these external actions are expected to be completed prior to

onset of rainfall rates that could cause a LIP event. Therefore, environmental conditions will not adversely affect the ability of the operators performing the actions.

Watertight door closure can be performed within the warning time provided by the 24-hour PQPF trigger, as shown by HCGS operating experience (e.g., the flooding walkdown report in Reference 16 documents actual closure that was performed within approximately one hour following exceedance of a high river water level trigger). Therefore, the manual actions required to implement the flood response strategy (i.e., watertight door closure) are feasible and the overall implementation of the strategy is adequate.

8 CONCLUSION

The FHRR (Reference 2) and the NRC staff's assessment of the reevaluated flooding hazard information (References 6 and 7) conclude only the LIP flooding mechanism is found to exceed the current design basis flood level at HCGS. The reevaluated LIP event produces flood levels significantly below the plant's design basis flood protected elevation. Plant safety can be ensured by implementing severe weather guidance and procedures to close watertight doors based on LIP forecast triggers. Demonstration of effective flood protection is shown through the presence of significant APM, reliable flood protection features and demonstrated site response. PSEG has determined that all vulnerabilities due to the LIP mechanism are considered to be addressed by this effective flood protection strategy and APM was demonstrated to protect Key SSCs. This places HCGS in Path 2, "Demonstrate Effective Flood Protection," of NEI 16-05 (Reference 9), to address the LIP flooding mechanism.

This submittal completes the actions related to external flooding required by the March 12, 2012 10 CFR 50.54(f) letter (Reference 1).