October 14, 2015

MEMORANDUM TO: Ronaldo V. Jenkins, Branch Chief
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

FROM: Adrian Muñiz, Project Manager **/RA/**
Licensing Branch 3
Division of New Reactor Licensing
Office of New Reactors

SUBJECT: OCTOBER 28, 2015, AUDIT PLAN TO VERIFY EVALUATIONS OF IMPACT OF THE SUPPRESSION POOL HYDRODYNAMIC LOADS

GEH-Hitachi Nuclear Energy (GEH) evaluated the impact of the suppression pool hydrodynamic loads on the suppression pool wall boundaries, the access tunnel, and the structures submerged in the suppression pool. The purpose of this audit is to verify the design evaluations performed by GEH. The audit will take place at the GEH office in Washington, DC on October 28, 2015. A copy of the audit plan is enclosed.

Docket No.: 52-045

Enclosure:
As stated

CONTACT: Adrian Muñiz, NRO/DNRL
301-415-4093
Adrian.Muniz@nrc.gov

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ADAMS ACCESSION NO.: ML15274A398 **NRC-001**

OFFICE	PM:DNRL/LB3	LA:DNRL/LB3	BC:DSRA/SCVB	BC:DE/SEB2	PM:DNRL/LB3
NAME	AMuñiz	SGreen	JSegala	JXu	AMuñiz
DATE	10/13/15	10/13/15	10/14/15	10/14/15	10/14/15
OFFICE	PM:DSRA/SCVB	PM:DE/SEB2			
NAME	HWagage	AIstar			
DATE	10/13/15	10/14/15			

OFFICIAL RECORD COPY

AUDIT PLAN TO VERIFY EVALUATIONS OF IMPACT OF THE SUPPRESSION POOL HYDRODYNAMIC LOADS

A. Background and Regulatory Audit Bases

In a letter, dated March 31, 2014, GEH-Hitachi Nuclear Energy (GEH) provided the U.S. Nuclear Regulatory Commission (NRC) a "10 CFR Part 21.21(a)(2) 60-Day Interim Report Notification: Containment Loads Potentially Exceed Limits with High Suppression Pool Water Level in the ABWR Design" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14090A068) that this letter states the following: Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply: Advanced boiling-water reactor (ABWR) hydrodynamic loads have been calculated with the Suppression Pool water level defined at the Technical Specification Suppression Pool High Water Level (HWL). The suppression pool level during the postulated loss-of-coolant accident vessel blowdown may be greater than the suppression pool HWL during the pertinent timeframe for hydrodynamic loads because vessel coolant inventory is transferred into the suppression pool during blowdown. Additionally, certain containment structures previously thought uncovered may be submerged with the higher suppression pool water level. Increased hydrodynamic loads may correspondingly increase the totals in the design load combinations for which containment structures are designed to withstand.

In a letter, dated August 29, 2014, GEH informed the NRC that "[t]he GEH assessment has concluded that the predicted increase in the suppression pool water level above the value used for defining the ABWR loads and applied in the structural analysis will not result in the creation of a Substantial Safety Hazard nor will it lead to exceeding a Technical Specification Safety Limit for the US ABWR Certified Design." (ADAMS Accession No. ML14241A306).

10 CFR 52.57(a) requires that an application for design certification renewal contain all information necessary to bring up to date the information and data contained in the previous application. The NRC staff views this requirement as including the correction of known errors. Therefore, in a letter dated April 20, 2015, the NRC requested GEH to describe the following related to the ABWR Design Certification Rule Renewal Application: The impact of the error on loads on suppression pool wall boundaries, the access tunnel, and structures submerged in the suppression pool in terms of loads from pool swell, condensation oscillation, chugging, and safety relief valve discharge. In a letter, May 29, 2015, GEH responded to the above NRC request (ADAMS Accession Nos. ML15149A233, ML15149A234 and ML15149A235).

B. Regulatory Audit Scope or Methodology

The scope of the audit is to verify the design evaluations of impact of the suppression pool hydrodynamic loads on the suppression pool wall boundaries, the access tunnel, and the structures submerged in the suppression pool supported by analysis and other documents developed by GEH.

Any significant concerns identified will be documented in the audit summary report and requests for additional information may be issued, if necessary.

C. Information and Other Material Necessary for the Regulatory Audit

Documentation supporting the evaluation of changes on loads on suppression pool wall boundaries, the access tunnel, and structures submerged in the suppression pool in terms of loads from pool swell, condensation oscillation, chugging, and safety relief valve discharge.

D. Audit Team

The audit team will include:

- Adrian Muñiz, Project Manager
- Ata Istar, Structural Engineer
- Hanry Wagage, Senior Reactor Engineer

E. Logistics

Date:	October 28, 2015
Time:	9:00 AM – 5:00 PM
Location:	Warner building, 9th floor Conference room: Brian Rowe Room 1299 Pennsylvania Ave Washington, DC 20004
Point-of-Contact:	Hugh Upton, GEH

F. Deliverables

A summary report of the audit will be prepared and issued in accordance with NRO-REG-108 within 90 days following completion of the audit.

G. References

- NRO Office Instruction NRO-REG-108 (Revision 0), “Regulatory Audits.”
- Letter from GEH to NRC, March 31, 2014, ADAMS Accession No. ML14090A068
- Letter from GEH to NRC, August 29, 2014, ADAMS Accession No. ML14241A306
- Letter from GEH to NRC, May 29, 2015, ADAMS Accession Nos. ML15149A233, ML15149A234 and ML15149A235