

May 6, 2016

Mr. Jerald G. Head
Senior Vice President, Regulatory Affairs
GE-Hitachi Nuclear Energy Americas, LLC
P.O. Box 780, M/C A-18
Wilmington, NC 28401-0780

SUBJECT: DRAFT SAFETY EVALUATION FOR GE HITACHI NUCLEAR ENERGY AMERICAS, LLC AMENDMENT TO NEDO-11209-A REVISION 12, "GE HITACHI NUCLEAR ENERGY QUALITY ASSURANCE PROGRAM DESCRIPTION" (CAC N0. MF7028)

Dear Mr. Head:

By letter dated October 14, 2015 (Agencywide Documents Access and Management System Accession No. ML15287A009), GE Hitachi Nuclear Energy Americas (GEH) submitted Amendment to NEDO-11209-A Revision 12, "GE Hitachi Nuclear Energy Quality Assurance Program Description" to the U.S. Nuclear Regulatory Commission (NRC) staff for review. Enclosed for GEH review and comment is a copy of the NRC staff's draft safety evaluation (SE) for the Licensing Topical Report.

Twenty working days are provided for you to comment on any factual errors or clarity concerns contained in the draft SE. The final SE will be issued after making any necessary changes. The NRC staff's disposition of your comments on the draft SE will be discussed in the final SE.

To facilitate the NRC staff's review of your comments, please provide a marked-up copy of the draft SE showing proposed changes and provide a summary table of the proposed changes.

J. Head

- 2 -

If you have any questions, please contact Joseph Golla at 301-415-1002.

Sincerely,

/RA/

Kevin Hsueh, Chief
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 710

Enclosure:
Draft Safety Evaluation

cc w/o encl: See next page

J. Head

- 2 -

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DATE	05/5/2016	5/4/2016	05/6/2016

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Project No. 710

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DRAFT SAFETY EVALUATION BY THE
OFFICE OF NEW REACTORS
OF GENERAL ELECTRIC HITACHI NUCLEAR ELECTRIC, QUALITY
ASSURANCE TOPICAL REPORT NEDO-11209-A, REVISION 12, "GE HITACHI
NUCLEARENERGY QUALITY ASSURANCE PROGRAM DESCRIPTION"
(CAC NO. MF7028)

1.0 INTRODUCTION

By letter dated October 14, 2015 (Reference 1), General Electric Hitachi Nuclear Energy (GEH) submitted an amendment to Quality Assurance Topical Report (QATR) NEDO 11209-A, Revision 12, "GE Hitachi Nuclear Energy Quality Assurance Program Description," to the U.S. Nuclear Regulatory Commission (NRC) for review and approval in accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.4(b)(7)(ii). GEH proposed that this updated QATR would replace the current QATR for GEH, which was approved by NRC as documented in a safety evaluation report (SER) dated October 20, 2014 (Reference 6).

During its review, the NRC staff determined that additional information was required to complete its review. On February 8, 2016 (Reference 2) and April 11, 2016 (Reference 3), the NRC transmitted two requests for additional information (RAIs) that were necessary complete the staff's review of QATR Revision 12. By letter dated March 2, 2016, and electronic correspondence dated April 15, 2016, GEH responded to the staff's RAIs (Reference 4 and Reference 5).

2.0 REGULATORY BASIS

The Commission's regulatory requirements related to Quality Assurance (QA) programs for non-licensees are set forth in 10 CFR 50.4(b)(7)(ii). This regulation requires that a change to a NRC-accepted QA program description from non-licensees (i.e., architect/engineers, nuclear steam system suppliers, fuel suppliers, constructors, etc.) must be submitted to the NRC. The NRC will review the proposed QATR for acceptability to ensure the applicable requirements of Appendix B to 10 CFR Part 50 will be satisfied.

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 establishes QA requirements for the design, fabrication, construction, and testing of structures, systems, and components (SSCs) of the facility. The pertinent requirements of Appendix B to 10 CFR Part 50 apply to all activities affecting the safety-related functions of SSCs and include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying.

1 3.0 EVALUATION

2
3 In evaluating the adequacy of the GEH QATR, the NRC staff used the guidance
4 contained in NUREG-0800, "Standard Review Plan for the Review of Safety Analysis
5 Reports for Nuclear Power Plants," SRP Section 17.5, "Quality Assurance Program
6 Description – Design Certification, Early Site Permit and New License Applicants,"
7 Revision 1, dated August 2015 (Reference 7) hereafter referred to as standard review
8 plan (SRP) Section 17.5, which provides acceptance criteria for design certification,
9 early site permit, combined operating license, construction permit, and operating license
10 applicants. SRP Section 17.5 is based on American Society of Mechanical Engineers
11 (ASME) Standard NQA-1-2008 Edition and the NQA-1a-2009 Addenda, as
12 supplemented by additional regulatory and industry guidance for nuclear operating
13 facilities. ASME Standard NQA-1-2008 Edition and the NQA-1a-2009 Addenda, upon
14 which the GEH QATR is based, incorporated the supplemental guidance into a single
15 document, and is therefore in alignment with SRP Section 17.5. In addition,
16 NQA-1-2008 Edition and the NQA-1a-2009 Addenda, is endorsed by NRC Regulatory
17 Guide (RG) 1.28, "Quality Assurance Program Requirements (Design and
18 Construction)," Revision 4.

19
20 The proposed changes made to QATR Revision 12, include the following:

- 21
- 22 • Minor editorial changes spelling corrections, punctuation, administrative
23 improvements, and clarifications to reflect the current organization within General
24 Electric and GEH. The staff verified that the revised GEH QATR continues to
25 ensure that persons and organizations performing quality assurance functions
26 have the required authority and organizational freedom, and remain sufficiently
27 independent from cost and schedule when opposed to safety considerations.
28
 - 29 • In addition to the minor editorial changes, GEH added Section 4.4,"Graded
30 Approach to Quality," to PART III, "Supplemental Details," of the QATR. The
31 NRC staff submitted RAI 1 (Reference 2) requesting additional details how GEH
32 planned to implement Section 4.4. GEH's response to RAI 1 (Reference 4)
33 described that the graded approach to quality only applies to non-basic
34 components. For example, it applies to SSCs with a Safety-Related
35 Classification of "S" (Special) in Tier 2 Table 3.2-1 of the Economic Simplified
36 Boiling Water Reactor Design Control Document (ESBWR DCD), Revision 10
37 dated April 2014, as certified by the US NRC (Reference 8). The ESBWR DCD
38 elevates many SSCs that would have been classified as "Non-Safety Related"
39 under Appendix B to 10 CFR Part 50, in order to apply more rigorous quality
40 requirements (see Note 5 of Tier 2 Table 3.2-1 of the ESBWR DCD). In addition,
41 GEH in their response described that they may apply the classification of Special
42 to products and services provided to international nuclear power plants not
43 covered by Appendix B to 10 CFR Part 50 or 10 CFR Part 21 to ensure that
44 applicable international regulations, codes, and standards are met. GEH's use of
45 a graded approach to quality meets the requirements of Appendix B to 10 CFR
46 Part 50 in that GEH applies all applicable Appendix B to 10 CFR Part 50
47 requirements, as described by ASME in NQA-1-2008 Edition and supplemented

1 by NQA-1a-2009 Addenda, to all basic components as defined by 10 CFR
2 Part 21. The NRC staff found this approach to be acceptable.

- 3
- 4 • The proposed amendment to QATR Revision 12 also included a commitment to
5 implement the quality assurance program alternative of the Nuclear Energy
6 Institute (NEI) Technical Report NEI 14-05, Revision 1, "Guidelines for the Use of
7 Accreditation in Lieu of Commercial Grade Surveys for Procurement of
8 Laboratory Calibration and Test Services," dated August 2014 (Reference 9).
9 The NRC staff concluded, in an SER dated February 9, 2015 (Reference 10),
10 that NEI 14-05, Revision 1, provided an acceptable approach for licensees and
11 suppliers subject to the QA requirements of Appendix B to 10 CFR Part 50, for
12 using laboratory accreditation by Accreditation Bodies that are signatories to the
13 International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition
14 Arrangement (MRA) in lieu of performing commercial-grade surveys as part of
15 the commercial-grade dedication process for procurement of calibration and
16 testing services performed by domestic and international laboratories accredited
17 by signatories to the ILAC MRA.

18

19 The proposed change was deemed to constitute a reduction in commitment. The NRC
20 staff's review verified that GEH correctly implemented the requirements of NEI 14-05,
21 Revision 1. NEI 14-05, Revision 1, Section 4, "Purchaser's Quality Assurance Program,"
22 states, in part, that "Purchasers that rely on the accreditation by ILAC signatories in lieu
23 of commercial-grade surveys are required by 10 CFR Part 50, Appendix B to document
24 this alternative method in their QA Program. A Template for describing the use of the
25 ILAC process in lieu of a commercial-grade survey in a Purchaser's QA Program is
26 provided in Appendix A. Although a Purchaser is not required to use the Template in
27 Appendix A, all of the actions and steps described in Appendix A need to be included in
28 the Purchaser's QA Program."

29

30 Section 7.10, "Commitment," of PART II, "QAPD Details," was revised to include
31 guidance proposed by GEH to implement the requirements of NEI 14-05, Revision 1.
32 The proposed change to this section, as described, did not address the requirements of
33 this alternative as outlined in NEI 14-05, Revision 1. The NRC staff electronically
34 transmitted RAI 2 (Reference 3) requesting clarification on how GEH planned to meet
35 the requirements of NEI 14-05, Revision 1 in its QATR. In response (Reference 5), GEH
36 revised Section 7.10 to include all the requirements listed in Appendix A of NEI 14-05,
37 Revision 1. The NRC staff found this approach to be acceptable.

38

39 3.0 CONCLUSION

40

41 The NRC staff used the acceptance criteria of NUREG-0800, Section 17.5 as the basis
42 for evaluating the acceptability of the GEH QATR, NEDO-11209-A, Revision 12 for
43 conformance with the applicable requirements of Appendix B to 10 CFR Part 50. The
44 NRC staff concludes that GEH's Quality Assurance Topical Report NEDO-11209-A
45 Revision 12, follows the NRC guidance contained within and conforms to the format of
46 NUREG-0800, Section 17.5, complies with Appendix B to 10 CFR Part 50 requirements
47 for the QA program, and is therefore, acceptable.

48

1 4.0 REFERENCES

- 2
- 3 1. GE Hitachi Nuclear Energy Amendment to NEDO-11209-A, Revision 12, dated
4 October 14, 2015, "GE Hitachi Nuclear Energy Quality Assurance Program
5 Description" (Agencywide Documents Access and Management System (ADAMS)
6 Accession No. ML15287A009).
- 7
- 8 2. NRC letter to GE Hitachi Nuclear Energy, "Request for Additional Information
9 Regarding Review of Amendment to NEDO-11209-A Revision 12, GE Hitachi
10 Nuclear Energy Quality Assurance Program Description," dated February 8, 2016
11 (ADAMS Accession No. ML16005A572).
- 12
- 13 3. NRC electronic correspondence to GE Hitachi Nuclear, "Request for Additional
14 Information Regarding Review of Amendment to NEDO-11209-A Revision 12, "GE
15 Hitachi Nuclear Energy Quality Assurance Program Description," dated April 11,
16 2016 (ADAMS Accession No. ML16102A443)
- 17
- 18 4. GE Hitachi Nuclear Energy letter to NRC, "NRC Request for Additional Information
19 Regarding Review of Amendment to NEDO-11209-A Revision 12, GE Hitachi
20 Nuclear Energy Quality Assurance Program Description," dated March 2, 2016
21 (ADAMS Accession No. ML16063A013)
- 22
- 23 5. GE Hitachi Nuclear Energy electronic correspondence to NRC, "NRC Request for
24 Additional Information Regarding Review of Amendment to NEDO-11209-A
25 Revision 12, GE Hitachi Nuclear Energy Quality Assurance Program Description,"
26 dated April 15, 2016 (ADAMS Accession Nos. ML16106A162, ML16106A163, and
27 ML16106A164).
- 28
- 29 6. Safety Evaluation of General Electric Hitachi GE Hitachi Nuclear Energy, Quality
30 Management System, Quality Assurance Topical Report, NEDO-11209, Revision 11,
31 Quality Assurance Program Description (TAC NO. MF3792), dated October 20, 2014
32 (ADAMS Accession No. ML14267A483)
- 33
- 34 7. NUREG-0800, Standard Review Plan for the Review of Safety Analysis Reports for
35 Nuclear Power Plants: LWR Edition, Section 17.5 Revision 1, "Quality Assurance
36 Program Description – Design Certification, Early Site Permit and New License
37 Applicants," dated August 2015, (ADAMS Accession No. ML15037A441).
- 38
- 39 8. NUREG-1966 "Final Safety Evaluation Report Related to the Certification of the
40 Economic Simplified Boiling-Water Reactor Standard Design" (ADAMS Accession
41 No. ML14100A304)
- 42
- 43 9. Submittal of NEI 14-05, Revision 1, "Guidelines for the Use of Accreditation in Lieu of
44 Commercial-Grade Surveys for Procurement of Laboratory Calibration and Test
45 Services," dated August 31, 2014 (ADAMS Accession No. ML14245A392).
- 46
- 47

1 10. Final Safety Evaluation for Technical Report NEI 14-05, Guidelines for the use of
2 Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory
3 Calibration and Test Services, Revision 1 dated February 9, 2015 (ADAMS
4 Accession No. ML14322A535)

5
6 Principal Contributor: Jonathan Ortega-Luciano, NRO

7
8 Date: May 6, 2016

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