HITACHI

GE Hitachi Nuclear Energy

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~~Proprietary Information Notice~~
Attachment 3 to this letter contains GE Hitachi Company ~~proprietary information which is to be withheld from public disclosure in accordance with 10CFR2.390~~. Upon removal of Attachment 3 the balance of this letter may be made public.

M220082

June 10, 2022

Director, Division of Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Document Control Desk

Subject: GEH Request for Renewal - Certificate of Compliance No. 9228 for the Model No. 2000 Package, Revision 28, Docket No. 71-9228

References: 1) Model No. 2000 Shipping Cask-Certification Number 9228 Rev. 28, Docket Number 71-9228, Package Identification USA/9228/B(U)F-96
2) GE Model 2000 Radioactive Material Transport Package Safety Analysis Report, NEDE-33866P, Revision 6, April 2020.

Dear Sir or Madam:

GE Hitachi Nuclear Energy (GEH) hereby submits a request to renew NRC Certificate of Compliance (CoC) No. 9228 for the Model No. 2000 package. Attachment 1 to this letter is a GEH affidavit for Attachment 3. Attachment 2 to this letter is a list of the changes made to the Model 2000 Safety Analysis Report (SAR) made since Revision 4 which are now included in Revision 6.

The current Model 2000 SAR designated as NEDE-33866P Revision 6 is provided as Attachment 3 to this letter. The SAR is formatted consistent with NRC Regulatory Guide 7.9 "Standard Format and Content of Part 71 Packages for Radioactive Material" to aid NRC staff review and approval. Please note this version of the SAR contains company proprietary information and is requested to be withheld from public disclosure.

A redacted public version of the SAR designated as NEDO-33866 Revision 6 is provided as Attachment 4 to this letter.

The Model 2000 package is scheduled to be used in March 2023. For this reason, GEH requests NRC review and issuance of the revised CoC within 6 months of this request.

Please contact Alison Thomas at alison.thomas@ge.com or me if there are questions regarding this request.

Sincerely,

Scott P. Murray

Scott P. Murray, Manager
Facility Licensing

Attachments: 1. Affidavit
2. SAR Change Summary Table.
3. Model 2000 Safety Analysis Report NEDE-33866P Revision 6, April 2020 (Contains Company Proprietary Information)
4. Model 2000 Safety Analysis Report NEDO-33866 Revision 6, April 2020 (Redacted Public Version)

Cc: SPM 22-022

Attachment 1

GE Hitachi Nuclear Energy

AFFIDAVIT

I, Scott P. Murray, state as follows:

(1) I am the Manager, Facility Licensing of GE Hitachi Nuclear Energy (GEH) and have been delegated the function by GEH of reviewing the information described in paragraph (2) which is sought to be withheld and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in Attachment 3 to GEH's letter, M220082, Scott P. Murray to Director, Division of Fuel Management entitled GEH Request for Renewal - Certificate of Compliance No. 9228 for the Model No. 2000 Package, Docket No. 71-9228. GEH proprietary information is contained in Attachment 3 and is identified by the statement "GE Hitachi Proprietary Information".

(3) In making this application for withholding of proprietary information of which it is the owner or licensee, GEH relies upon the exemption from disclosure set forth in the Freedom of Information Act (FOIA), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for trade secrets (Exemption 4). The material for which exemption from disclosure is here sought also qualifies under the narrower definition of trade secret, within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F2d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F2d 1280 (DC Cir. 1983).

(4) The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. Some examples of categories of information that fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GEH's competitors without license from GEH constitutes a competitive economic advantage over GEH and/or other companies.

b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

(5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to the NRC in confidence. The information is of a sort customarily held in confidence by GEH and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, not been disclosed publicly, and not been made available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary and/or confidentiality agreements that provide for maintaining the information in confidence. The initial designation of this information as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure are as set forth in the following paragraphs (6) and (7).

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, who is the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or who is the person most likely to be subject to the terms under which it was licensed to GEH.

Attachment 1

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist, or other equivalent authority for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary and/or confidentiality agreements.

(8) The information identified in paragraph (2) above is classified as proprietary because it contains details of GEH's processes, design and manufacturing facilities.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The facility design and licensing methodology is part of GEH's comprehensive safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH. The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial. GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GEH would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

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

Executed on this 10th day of June 2022.

Scott P. Murray
GE Hitachi Nuclear Energy

STATE OF NORTH CAROLINA)
)
COUNTY OF NEW HANOVER)

Subscribed and sworn to me, a Notary Public, in and for the State of North Carolina, this 10th day of June 2022.

ELIZABETH GALE-ANDERSON NOTARY PUBLIC NEW HANOVER COUNTY, NC

Notary Public in and for the
State of North Carolina

My Commission Expires: 03-04-2023

Changes from Revision 4 to Revision 5 are listed in the following table. No revision bars are used for these changes. As indicated below, some of these changes were included to address NRC RAIs (U.S. NRC ADAMS Accession Number ML19296C273).

Location	Description of Change (Rev. 4 to Rev. 5)	Reason for Change
Chapter 1		
Section 1.2.2.1	Changed Item 3.e from "6 wt%" to "5 wt%."	In response to RAIs 6.1 and 6.2.
Chapter 5		
Section 5.2	Irradiated Fuel Item 4 changed from "6 wt%" to "5 wt%."	In response to RAIs 6.1 and 6.2.
Section 5.3.1.1	Included additional clarification for modeling the irradiated fuel source distribution.	In response to RAI 5.1.
Section 5.4.1.1	Removed the word "since."	Administrative change.
Section 5.4.1.3	Removed the word "since."	Administrative change.
Section 5.4.4.1	Removed enrichment ranges "$5.0 \leq E < 5.5$" and "$5.5 \leq E < 6.0$" from Tables 5.4-3, 5.4-4, 5.4-5, 5.4-6, 5.4-7, 5.4-8, 5.4-9, and 5.4-10.	In response to RAIs 6.1 and 6.2.
Section 5.5.1	Removed enrichment ranges "$5.0 \leq E < 5.5$" and "$5.5 \leq E < 6.0$" from Tables 5.5-2 and 5.5-5. Updated Table 5.5-4 naming convention.	In response to RAIs 6.1, 6.2, and clarification.
Section 5.5.5	Removed enrichment ranges "$5.0 \leq E < 5.5$" and "$5.5 \leq E < 6.0$" from Tables 5.5-33, 5.5-34, and 5.5-35.	In response to RAIs 6.1 and 6.2.
Chapter 6		
Section 6.9.4 was added to address RAI 6.1, which resulted in reducing the allowed content U-235 enrichment to 5 wt% and increasing the minimum pellet outer diameter. The initial baseline analyses and general conclusions presented in Section 6.3 through 6.6 remain applicable and were used as the starting point for the Section 6.9.4 analyses. The USL is based on the H/U-235 ratio of the most limiting evaluation; therefore, the USL decreased from 0.9387 to 0.9370. Additional discussions and administrative changes were included in several locations throughout Chapter 6 for the Section 6.9.4 analyses and the changes to the USL.		
Section 6.1.2	Table 6.1.2-1 updated to include the most limiting results from Section 6.9.4. Added Table 6.1.2-2 for justification of maintaining the 1750 g U-235 mass limit.	In response to RAI 6.1.
Section 6.3.2	Updated Table 6.3.2-5 to a U-235 enrichment of 5 wt%.	In response to RAIs 6.1 and 6.2.

Location	Description of Change (Rev. 4 to Rev. 5)	Reason for Change
Section 6.3.2	Removed Notes 2 and 3 below Table 6.3.2-5 for fissile materials that are not applicable to the approved content.	Administrative change.
Section 6.3.4	Updated USL based on a more conservative H/U-235 ratio from Section 6.9.4 analyses. Corrected the equation H/U-235 ratio calculation equation.	In response to RAI 6.1 and clarification.
Section 6.4.2	Removed statements about the final maximum k_{eff} values; these values are determined by Section 6.9.4. Figure 6.4.2-1 updated with new USL value on plot. Updated Table 6.4.2-2 with the parameters for the cases modeled for fuel rod transport.	In response to RAI 6.1.
Section 6.5.2	Removed statements about the final maximum k_{eff} values; these values are determined by Section 6.9.4. Figure 6.5.2-1 updated with new USL value on plot.	In response to RAI 6.1.
Section 6.6.2	Removed statements about the final maximum k_{eff} values; these values are determined by Section 6.9.4. Figure 6.6.2-1 updated with new USL value on plot.	In response to RAI 6.1.
Section 6.8	Included a statement to justify the use and applicability of using MCNP6 Version 2.0 for the assessments in Section 6.9.4.	In response to RAI 6.1 and 6.5.
Section 6.8.1	Corrected the number of critical experiments from “69” to “36” and the enrichment from “4.92” to “4.306” weight percent.	In response to RAI 6.3.
Section 6.8.2.2.1	Added Section 6.8.2.2.1 to demonstrate that the benchmark data passes the normality tests.	In response to RAI 6.4.
Section 6.9.1	Clarification on the fuel rod pitch uncertainty. Figure 6.9.1-2 updated with new USL value on plot.	Clarification and in response to RAI 6.1.
Section 6.9.2.1.2	Figure 6.9.2-1 updated with new USL value on plot.	In response to RAI 6.1.
Section 6.9.3	Updated Table 6.9.3-1 to include descriptions for additional MCNP input files. Added Tables 6.9.3-6 and 6.9.3-7 for the MCNP results presented in Section 6.9.4.	In response to RAI 6.1.
Section 6.9.4	Included additional sensitivity studies to assess the criticality effects of changing fuel rod height.	In response to RAI 6.1.

Location	Description of Change (Rev. 4 to Rev. 5)	Reason for Change
Section 6.10	Added References 6-6, 6-10, 6-11, and 6-12.	In response to RAI 6.1 and 6.4.
Chapter 7		
Section 7.5.3	Removed enrichment ranges "5.0 ≤ E < 5.5" and "5.5 ≤ E < 6.0" from Table 7.5.3-1.	In response to RAIs 6.1 and 6.2.

Changes from Revision 5 to Revision 6 are listed in the following table. Revision bars are used for these changes.

Location	Description of Change (Rev. 5 to Rev. 6)	Reason for Change
Chapter 1		
Section 1.1	Updated reference to most recent NRC approved GEH Quality Assurance Program.	Administrative change.
Section 1.2.2.1	Changed Item 1.a description: From: "Irradiated hardware components composed of stainless steels, carbon steels, nickel alloys, and zirconium alloys" To: "Irradiated hardware components composed of metallic alloys (e.g., stainless steels, carbon steels, Iron Chromium Aluminum (FeCrAl), nickel alloys, and zirconium alloys)."	Clarification change.
Section 1.4	Updated Reference 1-1 to most recent NRC approved GEH Quality Assurance Program.	Administrative change.
Chapter 5		
Section 5.2	Irradiated Hardware and Byproducts Item 1 description changed: From: "Hardware: Irradiated metals composed of materials such as SS, carbon steels, nickel alloys, and zirconium alloys." To: "Hardware: Irradiated components composed of metallic alloys (e.g., SS, carbon steels, FeCrAl, nickel alloys, and zirconium alloys)."	Clarification change.
Chapter 8		
Section 8.1	Updated references to most recent NRC approved GEH Quality Assurance Program.	Administrative change.
Section 8.1.1	Updated reference to most recent NRC approved GEH Quality Assurance Program.	Administrative change.
Section 8.4	Updated References 8-1 and 8-2 to most recent NRC approved GEH Quality Assurance Program.	Administrative change.