



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

January 5, 2022

Mr. Scott P. Murray  
Manager, Facility Licensing  
GE Hitachi Nuclear Energy  
3901 Castle Hayne Road  
P.O. Box 780, M/C K-84  
Wilmington, NC 28402

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION ANALYSIS OF GE-HITACHI  
NUCLEAR ENERGY AMERICAS, LLC'S INITIAL AND UPDATED  
DECOMMISSIONING FUNDING PLANS FOR THE MORRIS OPERATION  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION

Dear Mr. Murray:

By letter dated December 14, 2012, GE-Hitachi Nuclear Energy Americas, LLC, (GEH) submitted, for U.S. Nuclear Regulatory Commission (NRC) staff review and approval, an initial decommissioning funding plan (DFP) for the Morris Operation Independent Spent Fuel Storage Installation (ISFSI) (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML123520161).

By letter dated December 11, 2015, GEH submitted to the NRC staff review and approval, the 2015 updated DFP, for the Morris Operation ISFSI (ADAMS Accession Package No. ML15345A190). By letter dated December 14, 2018, GEH submitted for the NRC staff's review and approval, the 2018 updated DFP (ADAMS Accession Package No. ML18348A613). By letter dated March 6, 2020, GEH submitted a DFP update for the Morris Operation ISFSI for the year 2020 (ADAMS Accession Package No. ML20066K265) (non-public); (redacted public version) (ADAMS Accession Package No. ML21144A266). By letters dated April 21, 2021, and June 17, 2021, GEH supplemented the 2020 DFP (ADAMS Accession No. ML21111A333 and Package No. ML21168A257, respectively).

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Sections 72.30(b) and (c), and using NUREG-1757, Vol. 3, Rev. 1, "Consolidated Decommissioning Guidance," the NRC staff reviewed GEH's initial and updated DFPs, including the initial and updated decommissioning cost estimates (DCEs) and the method of assuring funds for decommissioning.

**NRC's Review of Initial DFP for 2012**

Pursuant to 10 CFR 72.30(b), each holder of, or applicant for, a license under Part 72 must submit for NRC review and approval a DFP containing information on how reasonable assurance will be provided that funds will be available to decommission its ISFSI. The DFP must contain a detailed DCE, in an amount reflecting: (1) the cost of an independent contractor to perform all decommissioning activities, (2) an adequate contingency factor, and (3) the cost of meeting the 10 CFR 20.1402 unrestricted use criteria (or the cost of meeting the 10 CFR 20.1403 restricted use criteria, provided the licensee can demonstrate its ability to meet these

criteria). The licensee's DFP must also identify and justify using the key assumptions contained in the DCE. Further, the DFP must describe the method of assuring funds for ISFSI decommissioning, including means for adjusting cost estimates and associated funding levels periodically over the life of the ISFSI. Additionally, the DFP must specify the volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination, and contain a certification that financial assurance for ISFSI decommissioning has been provided in the amount of the DCE.

The NRC staff reviewed and analyzed the information submitted by GEH on how reasonable assurance will be provided that funds will be available to decommission the ISFSI, including the amount of the DCE and the method of assuring funds for decommissioning.

In its initial 2012 DFP, GEH estimated the total cost to decommission the ISFSI for unrestricted use was \$82,300,000, in 2012 dollars. Based on its financial analysis of GEH's submittal, the NRC staff finds that the DCE submitted for 2012: (1) is based on reasonable costs of a third-party contractor; (2) includes an adequate contingency factor; (3) reflects the cost of meeting the 10 CFR 20.1402 criteria for unrestricted use; and (4) is based on reasonable and documented assumptions. Therefore, the NRC finds that the 2012 DCE adequately estimates the cost, to carry out required ISFSI decommissioning activities prior to license termination, and that the 2012 DCE is acceptable.

In the initial 2012 DFP, GEH relied on a parent company guarantee as financial assurance for ISFSI decommissioning, a method authorized by 10 CFR 72.30(e)(2). The staff specifically finds that the General Electric Corporation is the guarantor of the parent company guarantee and meets the financial test requirements in 10 CFR Part 30, Appendix A, II(A)(2). In addition, in accordance with 10 CFR 30 Appendix A, III(D), GEH established a standby trust for the benefit of the NRC, in the case of default or inability to direct decommissioning activities by the guarantor. The NRC staff reviewed the licensee's 2012 DFP and finds that the aggregate dollar amount of the licensee's financial instrument provides adequate financial assurance to cover its DCE, and therefore, that the parent company guarantee, and its supporting documents are acceptable and meet the requirements of 10 CFR Part 30, Appendix A.

Based on its financial analyses, the NRC staff finds that the initial 2012 DFP contains the information required by 10 CFR 72.30(b) and that GEH has provided reasonable assurance that funds will be available to decommission the Morris Operation ISFSI.

### **NRC's Review of Updated DFPs for 2015 and 2018**

Pursuant to 10 CFR 72.30(c), at the time of license renewal and at intervals not to exceed 3 years, the DFP required to be submitted by 10 CFR 72.30(b) must be resubmitted with adjustments as necessary to account for changes in costs and the extent of contamination in an updated DFP. The updated DFP must update the information submitted with the original or prior approved plan. If the amount of financial assurance will be adjusted downward, this adjustment cannot be made by the licensee until the updated DFP is approved by the NRC. In addition, the DFP must specifically consider the effect of the following events on decommissioning costs, as required by 10 CFR 72.30(c)(1)–(4): (1) spills of radioactive material producing additional residual radioactivity in onsite subsurface material, (2) facility modifications, (3) changes in authorized possession limits, and (4) actual remediation costs that exceed the previous cost estimate.

### 2015 DFP

GEH submitted a triennial update to the DFP in 2015. The NRC issued a request for additional information (RAI) related to the 2015 update, dated February 28, 2018 (ADAMS Accession Package No. ML18060A330). GEH responded to this RAI on March 26, 2018 (ADAMS Accession No. ML18085A656); this response supplemented the 2015 DFP.

In its 2015 updated DFP, GEH estimated the total cost to decommission the ISFSI for unrestricted use was \$93,200,000, in 2015 dollars. GEH's updated DCE and its RAI supplement provided narratives on each of the requirements of 10 CFR 72.30(c)(1)–(4). Specifically, the licensee explained there were no changes in the factors listed in 10 CFR 72.30(c)(1)–(4).

Based on its review of GEH's 2015 DFP and the supplemental information, the NRC staff finds that the updated DCE: is based on reasonable costs of a third-party contractor; includes an adequate contingency factor; reflects the cost of meeting the 10 CFR 20.1402 criteria for unrestricted use; and is based on reasonable and documented assumptions. Therefore, the NRC staff finds that the 2015 updated DCE adequately estimates the cost, at this time, to carry out required ISFSI decommissioning activities prior to license termination, and that the DCE is reasonable.

In the 2015 updated DFP, GEH continued to rely on a parent company guarantee as financial assurance for ISFSI decommissioning, a method authorized by 10 CFR 72.30(e)(2). The NRC staff confirmed that the General Electric Corporation is the guarantor of the parent company guarantee and continued to meet the financial test criteria of 10 CFR Part 30, Appendix A, II(A)(2) and III(D). The NRC staff reviewed the licensee's 2015 updated DFP and finds that the aggregate dollar amount of the licensee's financial instrument provides adequate financial assurance to cover its DCE, and therefore, that this financial instrument and its supporting documents are acceptable and meet the requirements of 10 CFR Part 30, Appendix A.

Based on its financial analyses, the NRC staff finds that the 2015 DFP contains the information required by 10 CFR 72.30(b) and that GEH has provided reasonable assurance that funds will be available to decommission the Morris Operation ISFSI.

### 2018 DFP

GEH submitted a triennial update to the DFP in 2018. In its 2018 updated DFP, GEH estimated the total cost to decommission the ISFSI for unrestricted use was \$100,700,000 as of December 2017 (in 2017 dollars). GEH's updated DCE provided narratives on each of the requirements of 10 CFR 72.30(c)(1)–(4). Specifically, the licensee stated in its 2018 submission that the factors listed in 10 CFR 72.30(c)(1)–(4) were unchanged from its 2015 DFP.

Based on its review of GEH's 2018 DFP, the NRC staff finds that the updated DCE: is based on reasonable costs of a third-party contractor; includes an adequate contingency factor; reflects the cost of meeting the 10 CFR 20.1402 criteria for unrestricted use; and is based on reasonable and documented assumptions. Therefore, the NRC staff finds that the 2018 updated DCE adequately estimates the cost, at this time, to carry out required ISFSI decommissioning activities prior to license termination, and that the DCE is reasonable.

In the updated DFP for 2018, GEH relied on the payment of a surety bond as financial assurance for ISFSI decommissioning, a method authorized by 10 CFR 72.30(e)(2). The NRC

staff confirmed that the surety bond satisfies the requirements of 10 CFR 72.30(e)(2)(i)-(iii). Specifically, the staff confirmed that GEH established a standby trust for the benefit of the NRC in the case of default or inability to direct decommissioning activities by the guarantor, the General Electric Corporation. The staff finds the standby trust meets all applicable NRC requirements. The NRC staff reviewed the licensee's 2018 updated DFP and finds that the aggregate dollar amount of the licensee's financial instrument provides adequate financial assurance to cover its DCE, and therefore, that this financial instrument and its supporting documents are acceptable.

Based on its financial analyses, the NRC staff finds that the 2018 DFP contains the information required by 10 CFR 72.30(b) and that GEH has provided reasonable assurance that funds will be available to decommission the Morris Operation ISFSI.

## **NRC's Review of the Updated DFP for 2020**

### 2020 DFP

GEH submitted an updated DFP for 2020, which requested the NRC's approval to reduce the DCE and the amount of the financial assurance surety bond. On April 21, 2021, GEH supplemented the 2020 DFP (ADAMS Accession No. ML21111A333), after a teleconference with the staff (ADAMS Accession No. ML21103A429). On June 15, 2021, the NRC staff issued an RAI (ADAMS Accession No. ML21167A332), asking for details on the DCE. On June 17, 2021, GEH again supplemented its 2020 DFP (ADAMS Accession No. ML21168A257). The NRC staff analyzed the information in the 2020 DFP, as supplemented.

In the 2020 DFP, as supplemented, GEH estimated the total cost to decommission the ISFSI for unrestricted use was \$78,900,000 as of June 2021. The revised DCE reflects a reduction in the estimated decommissioning costs reported in 2018. GEH explained how the requirements of 10 CFR 72.30(c)(1)-(4) continue to be met, in the 2020 DFP, as supplemented. Specifically, the licensee explained there were no changes in the factors listed in 10 CFR 72.30(c)(1)-(4).

In the 2020 DFP, as supplemented, GEH requested the NRC's approval to reduce the amount of the DCE from approximately \$104.6 million, the amount of the current financial surety bond, to the newly calculated DCE of \$78.9 million. GEH explained how the requirements of 10 CFR 72.30(c)(1)-(4) continue to be met. Specifically, the licensee explained there were no changes in the factors listed in 10 CFR 72.30(c)(1)-(4). The reduction in the DCE is based on new cost estimates prepared in 2019 by an independent third-party engineering firm. The updated information supporting the reduction in the DCE was provided in GEH's 2020 DFP submittal, as supplemented. In putting together the new cost estimates, the independent review considered site reconnaissance and measurements, scaling factors from building volumes and footprints, interviews with site personnel, and comparisons to previous other decommissioning projects. The revised DCE assumes the waste volume associated with the spent fuel storage system hardware will be Class A waste. The previous DCEs had assumed system hardware would be classified as Class B waste. GEH supported the reclassification of the system hardware as Class A waste with comparisons to cost estimates for the decommissioning of spent fuel pools at nuclear power plants. The new cost estimate calculated for the 2020 DFP, as supplemented, also considered existing facility conditions, notably the interim decontamination and dismantlement activities already completed. Additionally, GEH's 2020 cost estimate also included estimates of the costs of labor, equipment and supplies, radioactive waste disposal, laboratory analyses, and miscellaneous expenses (e.g., NRC fees, utilities and insurance), which are the major cost contributors to the overall decommissioning cost. The inclusion of this

information is consistent with evaluation criteria discussed in NUREG-1757, Vol. 3, Rev. 1, "Consolidated Decommissioning Guidance."

The NRC staff's review of the 2020 DFP, as supplemented, finds that the updated DCE is based on reasonable costs of a third-party contractor; includes an adequate contingency factor; reflects the cost of meeting the 10 CFR 20.1402 criteria for unrestricted use; and is based on reasonable and documented assumptions. In particular, the NRC staff finds that the licensee's reduction the DCE is acceptable because the licensee identified and justified the key assumptions in the DCE, and the DCE is based on reasonable assumptions and costs. Therefore, the NRC staff finds that the updated DCE adequately estimates the cost, at this time, to carry out required ISFSI decommissioning activities prior to license termination, and that the DCE is reasonable.

In the updated 2020 DFP, as supplemented, GEH relied on the payment of a surety bond as financial assurance for ISFSI decommissioning, a method authorized by 10 CFR 72.30(e)(2). The NRC staff confirmed that the surety bond satisfies the requirements of 10 CFR 72.30(e)(2)(i)-(iii). Specifically, the staff confirmed that GEH established a standby trust for the benefit of the NRC in the case of default or inability to direct decommissioning activities by the guarantor, General Electric Corporation. The staff finds the standby trust meets all applicable NRC requirements. The NRC staff reviewed the 2020 DFP, as supplemented, and finds that the aggregate dollar amount of the licensee's financial instrument provides adequate financial assurance to cover its DCE. Therefore, the NRC staff finds the financial instrument and its supporting documents are acceptable.

Based on its financial analyses, the NRC staff finds that the 2020 DFP, as supplemented contains the information required by 10 CFR 72.30(b) and that GEH has provided reasonable assurance that funds will be available to decommission the Morris Operation ISFSI.

### **Summary of the NRC Staff's Findings for GEH's DFP Updates for the Years 2015, 2018, and 2020**


The NRC staff reviewed GEH's updated 2015, 2018, and 2020 DFP submissions and supplements, including the updated DCEs and the methods of assuring funds for decommissioning, in accordance with 10 CFR 72.30(c) and NUREG-1757, Vol. 3, Rev. 1, "Consolidated Decommissioning Guidance." Based on its review, the NRC staff finds that the updated DFPs contain the information required by 10 CFR 72.30(c). The NRC staff finds that GEH provides reasonable assurance that funds will be available to decommission the Morris Operation ISFSI.

In addition to the NRC staff's review of GEH's initial and 2015, 2018, and 2020 DFPs and supplements, the NRC staff completed an environmental review. The NRC staff published a summary of the results of the environmental review in the *Federal Register* in December 2021 for the Morris Operation ISFSI. The environmental assessment and finding of no significant impact is available in <https://www.regulations.gov> under the Docket ID: NRC-2021-0159. The NRC staff determined there were no environmental impacts from the NRC staff's review and approval of GEH's initial and updated DFPs.

If you have any questions regarding this matter, please contact me at (301) 415-8064 or Yaira.Diaz-Sanabria@nrc.gov, or Kristina Banovac of my staff at (301) 415-7116 or Kristina.Banovac@nrc.gov.

Sincerely,

Yaira K. Diaz-  
Sanabria

 Digitally signed by Yaira K. Diaz-  
Sanabria  
Date: 2022.01.05 08:23:26 -0500'

Yaira Diaz-Sanabria, Chief  
Storage and Transportation Licensing Branch  
Division of Spent Fuel Management  
Office of Nuclear Material Safety  
and Safeguards

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cc:  
Morris Operation Service List

cc:

Scott P. Murray  
Manager, Facility Licensing  
GE Hitachi Nuclear Energy  
3901 Castle Hayne Road  
P.O. Box 780, M/C K-84  
Wilmington, NC 28402

Bobbie Lockwood  
General Manager, Services Operations  
GE Hitachi Nuclear Energy  
3901 Castle Hayne Rd  
Wilmington, NC 28402

Tony McFadden  
Site Manager, Morris Operation  
GE Hitachi Nuclear Energy  
7555 East Collins Road  
Morris, IL 60450

Grundy County Clerk  
111 East Washington Street  
P. O. Box 675  
Morris, IL 60450-0675

Adnan Khayyat  
Division Chief, Division of Nuclear Safety  
Illinois Emergency Management Agency  
1035 Outer Park Dr  
Springfield, IL 62704

Steven Reynolds  
Manager, Nuclear Facilities Inspection  
Illinois Emergency Management Agency  
245 W. Roosevelt Rd  
Bldg. 8, Suite 55  
West Chicago, IL 60185

Region III Administrator  
U.S. Nuclear Regulatory Commission  
2443 Warrenville Road, Suite 210  
Lisle, IL 60532 4352

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION ANALYSIS OF GE-HITACHI  
 NUCLEAR ENERGY AMERICAS LLC'S INITIAL AND UPDATED  
 DECOMMISSIONING FUNDING PLANS FOR THE MORRIS OPERATION  
 INDEPENDENT SPENT FUEL STORAGE INSTALLATION DOCUMENT DATE:  
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\*via e-mail

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