

SAFETY EVALUATION REPORT

DOCKET NO: 70-0754

LICENSE NO: SNM-960

LICENSEE: GE Hitachi Nuclear Energy
Vallecitos Nuclear Center

SUBJECT: UPDATED DECOMMISSIONING FUNDING PLAN FOR THE VALLECITOS
NUCLEAR CENTER–COST ACTIVITY CODE/ENTERPRISE PROJECT
IDENTIFICATION NUMBER 000224/07000754/L-2020-DFA-0002

1. BACKGROUND

By letter dated March 6, 2020, General Electric-Hitachi (GEH or the licensee) submitted its triennial update to the decommissioning funding plan (DFP), (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20066J977) for the Vallecitos Nuclear Center (VNC). The triennial update reflected a decrease of approximately \$7,400,000 when compared to the 2017 decommissioning costs estimate (DCE). The U.S. Nuclear Regulatory Commission (NRC) staff performed an acceptance review of GEH's submittal and determined that it did not provide sufficient information to proceed with its detailed technical review. For this reason, by letter dated May 8, 2020 (ADAMS Accession No. ML20119A872), the NRC staff notified GEH of its determination and declined to accept the submittal. In its letter, the NRC staff enclosed a request for supplemental information (RSI) discussing the specific information that was needed for the NRC staff to accept the submittal and proceed with detailed technical review. Subsequently, by letter dated June 2, 2020 (ADAMS Accession No. ML20154K650), GEH provided its responses to the RSI. The NRC staff conducted a review of GEH's responses to the RSI and determined that GEH provided sufficient information to proceed with the detailed technical review. Therefore, by letter dated July 7, 2020 (ADAMS Accession No. ML20174A276), the NRC staff informed GEH that it was accepting the initial submittal and supplemental information, and proceeding with the full technical review of the updated DFP.

The licensee remains responsible for the current status and future decommissioning of the licensed site and facility, will continue to abide by all commitments and representations previously made to NRC, and will continue to abide by all constraints, conditions, requirements, representations, and commitments identified in the license. Additionally, as required by Title 10 of the *Code of Federal Regulations* (10 CFR), Paragraph 70.25(e), GEH must continue to submit an updated DCE for NRC's review and approval at intervals not to exceed 3 years. After resolution of any NRC comments on the estimate, GEH must submit signed originals of the financial instruments reflecting an amount sufficient to cover the approved cost estimate. The licensee remains liable for any decommissioning costs not covered by the financial instruments referenced above.

2. REGULATORY REQUIREMENTS AND GUIDANCE

Nuclear facilities licensed under 10 CFR, Part 70, are required to provide adequate financial assurance for decommissioning, decontamination, and reclamation pursuant to 10 CFR 70.25, "Financial assurance and recordkeeping for decommissioning." As the holder of Special Nuclear Material License Number 960 (SNM-960) for the VNC located in Sunol,

Enclosure

CA, and pursuant to 10 CFR 70.25(e)(2), GEH is required to submit a DCE and financial assurance for the VNC every 3 years for NRC review and approval to account for changes in costs and the extent of contamination.

Guidance for conducting the NRC staff review of the GEH DFP is provided in NUREG-1757, Vol. 3, Rev. 1, "Consolidated Decommissioning Guidance Financial Assurance, Recordkeeping, and Timeliness," and "Interim Staff Guidance on Decommissioning Funding Plans for Materials Licensees," June 2019 (ADAMS Accession No. ML19079A314) for evaluating DFPs submitted by 10 CFR Part 70 licensees.

3. NRC STAFF EVALUATION

In its submittal dated March 6, 2020, GEH proposed a DCE of approximately \$40.6 million, a decrease of approximately \$7.4 million relative to their 2017 DCE (ADAMS Accession No. ML17097A188) and noted that the DCE properly incorporated the following specific attributes:

- Assumes that all decommissioning activities will be performed by third-party contractors,
- Presents estimated costs in current, 2019 dollars;
- Includes an adequate contingency factor (25 percent), and
- Does not take credit for salvage value.

The NRC staff noted that, in Section 5 of the updated DFP, GEH provided justification for the key assumptions used in the preparation of the DFP and cost estimate for the decommissioning of the VNC. In addition, the NRC staff noted that in Table 6.6 through Table 6.8 of its 2020 DCE, GEH provided the cost to perform decommissioning activities based on the billing rates of an independent third-party engineering firm experienced in preparing cost estimates and completing decommissioning-related services for the nuclear industry. In its response to the RSI, GEH further stated that decommissioning costs were based on long-term inflation rates related to nuclear facility retirement costs and that, for the VNC, a long-term average inflation rate of 4.09 percent was used. The licensee also stated that the DCE was based on unrestricted use and used a contingency factor to estimate the total decommissioning costs.

The NRC staff noted that, in its key assumptions in Section 5 of the 2020 DFP, GEH did not include information on how the disposition of inventory at the time of decommissioning is incorporated in the DCE. In its May 8, 2020, RSI letter, the NRC staff requested GEH to provide this information. In response, GEH stated that SNM inventory at the VNC is typically small quantities of uranium that will be or has been used during licensed operations in fuel development studies, laboratory analyses, reference standards, or instrument calibrations. The licensee further stated that this material is not waste, contamination, or residual radioactivity but rather inventory used in principle licensed activities with established pathways and that the limited amount of SNM inventory can easily be removed by GEH personnel or a contractor by transferring it to another licensee. The NRC staff evaluated this response and determined that it still did not adequately address the NRC staff question and concerns since it did not discuss where and how the associated costs for removing this material were addressed in the DFP.

While reviewing the information provided by GEH in its March 6, 2020, submittal, and its responses to the RSI, the NRC staff determined that additional information was still needed to determine whether GEH's triennial updates to the DFP met the requirements in 10 CFR 70.25(e). As such, by letter dated October 9, 2020 (ADAMS Accession

No. ML20209A067), the NRC staff issued a request for additional information (RAI). The RAI included five questions for GEH to respond to. By letter dated November 5, 2020 (ADAMS Accession No. ML20310A274), GEH provided its response to the RAI. The NRC staff evaluated GEH's responses to the RAI and determined that GEH's response to a question regarding inventory disposition was inadequate and placed the review of GEH's updated DFP and supplemental information on hold while internal discussions on the appropriate approach and next steps for obtaining the needed information were completed. This information was communicated to GEH via phone call. Nevertheless, following a routine communication with GEH at a later time to discuss the status of the NRC staff's review of the updated DFP, in an electronic communication dated March 2, 2021 (ADAMS Accession No. ML21294A077), GEH provided additional details to supplement their response regarding disposition of inventory, including the likely common carrier to transport the material, the established pathways the VNC has in place with its GEH's sister companies, and the nominal costs. The NRC staff determined that the information provided in the communication addressed its concerns and resumed the review of GEH's updated DFP and supplemental information.

The NRC staff noted that, in its March 6, 2020, submittal, GEH proposed a DCE for its NRC DFP of approximately \$40.6 million, which is a decrease of approximately \$7.4 million relative to their 2017 NRC-approved DCE. In its responses to the NRC's May 8, 2020, RSI, GEH stated that this decrease resulted from a review conducted in 2019 by an independent third-party engineering firm, experienced in preparing cost estimates, which identified a volume of waste material totaling 79,163 ft³ outside the Hillside storage building that did not contain SNM and was incorrectly included in the previous SNM-960 DFP. GEH further stated that this waste volume contained radioactive material, such as by-product, fission, and activation isotopes licensed by the Agreement State of California (CA) under CA license number CA-0017-01 and is now included in the cost estimate and DFP for that license. The NRC staff noted, however, that GEH did not discuss how it determined that this waste material did not contain SNM. To address this issue, by letter dated December 14, 2021 (ADAMS Accession No. ML21336A318), the NRC staff issued a second RAI. In this RAI, the NRC staff, requested GEH to discuss the basis for determining that this waste material should no longer be included in the NRC DFP for the SNM-960 materials license (i.e., records review, physical/chemical/radiological analysis, other). By letter dated January 12, 2022 (ADAMS Accession No. ML22012A148), and subsequent communications, GEH provided its response to the second RAI (see discussion under "Waste inventory increasing above the amount previously estimated" section below).

When updating the DFP, a licensee must consider the effect of eight factors outlined in 10 CFR 70.25(e)(2) on the DCE. The 2020 DFP states that, of the eight factors, "waste inventory and disposal cost decreases occurred since the prior VNC funding plan revision and these were updated in the current document." There were no additional updates or changes required to the information submitted under the previous (i.e., 2017) NRC-approved DFP for the other six events (i.e., spills of radioactive material producing additional residual radioactivity, facility modifications, changes in authorized possession limits, actual remediation costs that exceeded previous cost estimate, on-site disposal, and use of a settling pond). The licensee addressed the eight factors as follows:

1. Spills of radioactive material

The 2020 DFP states that no changes were needed to the information included in the 2017 DFP related to spills of radioactive material producing additional residual radioactivity (2020 DFP, page 1.2).

2. Waste inventory increasing above the amount previously estimated.

The 2020 DFP states that the waste inventory decreased since the 2017 DFP (2020 DFP, page 1.2). The waste inventory is summarized in Table 6-1 of the updated DFP. Most notably, the June 2, 2020, supplemental information stated that during the 2019 independent review, the engineering firm identified a volume of waste material totaling 79,163 ft³ outside the Hillside bunker building that did not contain SNM but was incorrectly included in the previous SNM-960 DFP. This waste volume contains radioactive material such as by-product, fission, activation isotopes licensed by Agreement State License CA-0017-01, and is included in the cost estimate and DFP for that license. The correct SNM-960 DFP waste volume inside the bunker building is shown in Table 6.1 of the updated DFP.

In its 2020 NRC DFP update, the licensee indicated that their 2017 NRC-approved DFP incorrectly included waste material that was to be covered under GEH's State of California (CA) DFP and that, therefore, this material was being removed from the NRC's 2020 DFP. GEH further stated that the reduction in decommissioning costs of approximately \$7.4 million in the 2020 NRC DFP is due to the removal of this material. On December 14, 2021, the NRC staff issued a second RAI to GEH (ADAMS Accession No. ML21336A318) to, in summary, request GEH to provide the basis for its decision to remove the 79,163 ft³ of waste material from the 2020 NRC DFP and its inclusion in the CA-DFP. GEH provided its response by letter dated January 12, 2022 (ADAMS Accession No. ML22012A148). In this response, GEH referenced the 2018 CA-approved DFP but did not a copy of the document. The licensee did, however, provide a copy of the 2018 DFP CA approval letter. The NRC staff requested GEH to provide a copy of the 2018, CA-approved DFP by e-mail dated January 24, 2022 (ADAMS Accession No. ML22025A146). GEH provided its response to this request by letter dated January 24, 2022 (ADAMS Accession No. ML22024A313). The NRC staff reviewed this information and noted that GEH did not provide a copy of the 2018 CA-DFP. Instead, GEH provided a copy of the 2020 CA-DFP update. By e-mail dated January 25, 2022 (ADAMS Accession No. ML22039A241), the NRC staff contacted the CA Radiation Control Program (CA-RCP) to request a copy of the 2018, CA-approved, DFP for the GEH Vallecitos facility. In response, via e-mail dated January 28, 2022 (ADAMS Accession No. ML22039A253), the CA-RCP staff provided a copy of the document (ADAMS Accession No. ML22039A252 - Non-Public). The NRC staff reviewed the CA-approved 2018 DFP and determined that the 79,163 ft³ of waste material previously included/covered under the NRC-approved DFP is covered under the CA-approved 2018 DFP and that it is also included in the 2020 CA-DFP update. Based on the review of this information, the NRC staff concluded that it is appropriate to reduce the 2020 DFP for the SNM-960 materials license by this 79,163 ft³ of waste material as it is being covered under the CA license.

3. Waste disposal costs increasing above the amount previously estimated.

The GEH 2020 update to its NRC-approved DFP states that the waste disposal costs decreased since 2017. The waste disposal costs are summarized in Table 6-8. Waste packaging and shipping decreased by \$1,142,318 from \$3,803,000

in 2017 to \$2,660,682 in 2020. Waste disposal/burial decreased by \$4,307,154, from \$15,733,000 in 2017 to \$11,425,846 in 2020. The June 2020 supplemental information stated that:

“[T]he 2019 independent review firm also updated waste disposal costs shown in Table 6.8 of the updated DFP. Based [on] the 2019 review and quoted disposal rates with disposal companies in Clive, Utah or Andrews, Texas, the independent firm lowered several of the burial costs per ft³ such as oversize debris (\$205/ft³ to \$128/ft³) and Class B waste (\$3,757/ft³ to \$1,428/ft³).”

Note: the proposed disposal costs above are significant reductions from the previous DCE. These do not appear to be from an executed contract to accept the waste, but are, rather, based on a quote. Radiological waste disposal quotes differ from licensee to licensee and from day to day. With potential fluctuations in such quotes, a better methodology is rates based on average actual disposal costs.

4. Facility modifications.

In its 2020 updated DFP, GEH stated that no changes were needed to the information included in the 2017 DFP related to facility modifications.

5. Changes in authorized possession limits.

The GEH 2020 updated DFP stated that no changes were needed to the information included in the 2017 DFP related to authorized possession limits.

6. Actual remediation costs that exceed the previous cost estimate.

The GEH 2020 updated DFP stated that no changes were needed to the information included in the 2017 DFP related to actual remediation costs that exceed the previous cost estimate.

7. On-site disposal.

The GEH 2020 updated DFP stated that no changes were needed to the information included in the 2017 DFP related to on-site disposal (2020 DFP, page 1.2).

8. Use of a settling pond.

The GEH 2020 updated DFP stated that no changes were needed to the information included in the 2017 DFP related to the use of a settling pond.

4. ENVIRONMENTAL REVIEW

Approval of the DCE is subject to the categorical exclusion provided in 10 CFR 51.22(c)(10). The NRC has previously found, as stated in 10 CFR 51.22(a), that this is a category of action that does not individually or cumulatively have a significant effect on the human environment. Therefore, in accordance with 10 CFR 51.22(b), neither an environmental assessment nor an environmental impact statement is required for the proposed action.

5. CONCLUSION

Based on the review of the information provided by GEH in its 2020 DCE, and supplemental information, NRC staff finds that GEH's DCE is based on reasonable, documented, and justified key assumptions, that it adequately reflects the cost of an independent contractor to perform decommissioning activities, is based on unrestricted use, and includes an adequate contingency factor. The NRC staff concludes that GEH's DCE satisfies the requirements of 10 CFR 70.25(e) and generally follows the parameters of NUREG-1757, Volume 3, Rev. 1 for NRC-regulated materials and approves GEH's 2020 DCE. The licensee shall appropriately revise its financial assurance mechanisms and Certification of Financial Assurance and submit them for NRC review and approval within 60 days from the staff's approval date of the 2020 update to the DCE. The licensee remains liable for any costs not covered by the financial instruments.

6. PRINCIPAL CONTRIBUTORS

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