



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

June 18, 2020

Mr. Matthew Feyrer, Site Manager  
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Vallecitos Nuclear Center  
6705 Vallecitos Road  
Sunol, CA 94586

SUBJECT: GE-HITACHI NUCLEAR ENERGY AMERICAS LLC – REMINDER OF  
EXPIRATION OF FACILITY LICENSE NO. R-33 FOR THE NUCLEAR TEST  
REACTOR AND OPPORTUNITY TO SUBMIT AN APPLICATION FOR  
LICENSE RENEWAL

Dear Mr. Feyrer:

This letter is a reminder that Facility License No. R-33 for the Nuclear Test Reactor (NTR), held by the GE-Hitachi Nuclear Energy Americas LLC (GEH), is scheduled to expire on April 20, 2021. If GEH intends to request renewal of the license, submit an application in accordance with the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.4, "Written communications," and include the information required by 10 CFR 50.33, "Contents of applications; general information," and 10 CFR 50.34, "Contents of applications; technical information." The regulations in 10 CFR 2.109, "Effect of timely renewal application," allow continued operation of the NTR under Facility License No. R-33 until the U.S. Nuclear Regulatory Commission (NRC) makes a final determination on the application for renewal, provided the application is received at least 30 days prior to the expiration date of your current license.

Your renewal application should address the requirements in applicable sections of NRC regulations and demonstrate that the reactor can continue to be operated safely and without adverse impact on the environment or the public during the period of the renewed license. The guidance in NUREG-1537, Part 1, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors, Format and Content" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML042430055), provides a format and content for the application that is acceptable to the NRC staff. The NRC staff will use NUREG-1537, Part 2, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors, Standard Review Plan and Acceptance Criteria" (ADAMS Accession No. ML042430048), to review the application.

For the NRC staff to perform an adequate review, GEH is requested to include in its application, as a minimum, the following information:

## 1. Updated Safety Analysis Report

An updated version of your safety analysis report (SAR) is required to be submitted with your renewal application. The updated SAR should include information that describes the facility and all changes made during the current license period; the design bases and limits on its operation; and a safety analysis of the structures, systems, and components that shows they will be able to continue to perform their intended functions. Potential and reasonable accident scenarios and their consequences should be analyzed using the best current input data and computational techniques. Information should be compared, wherever possible, with facility operating experience.

Furthermore, the updated SAR should include, if applicable, current information and analyses on demography, meteorology, geology, seismology, and other natural and manmade phenomena.

## 2. Financial Qualifications

Pursuant to 10 CFR 50.33(f)(2), "...Applicants to renew or extend the term of an operating license for a nonpower reactor shall include the financial information that is required in an application for an initial license." To comply with this requirement, you are requested to provide the following information, appropriately certified:

- a. A statement as to whether GEH is owned, controlled, or dominated by an alien, a foreign corporation, or foreign government, and if so, give details; and
- b. A statement providing the information of 10 CFR 50.33(d) that applies to GEH.

As required by paragraph (b) of 10 CFR 50.71, "Maintenance of records, making of reports," the NRC staff will analyze the financial statements for the current year to determine if the applicant is financially qualified to operate the reactor. To facilitate our review, you are requested to provide the most recently published annual financial statement for GEH.

Pursuant to 10 CFR 50.33(f)(2), you are requested to provide the estimated annual operating costs for the first 5-year period after the projected license renewal, the underlying assumptions and bases of the estimate, and the source(s) of funding to cover these costs.

You are also requested to provide information to demonstrate that GEH NTR continues to satisfy the requirements in 10 CFR 50.21, "Class 104 licenses; for medical therapy and research and development facilities," paragraph (c). The regulation in 10 CFR 50.22, "Class 103 licenses; for commercial and industrial facilities," states, in part, "That in the case of a production or utilization facility which is useful in the conduct of research and development activities of the types specified in section 31 of the Act, such facility is deemed to be for industrial or commercial purposes if the facility is to be used so that more than 50 percent of the annual cost of owning and operating the facility is devoted to the production of materials, products, or energy for sale or commercial distribution, or to the sale of services, other than research and development or education or training."

The Nuclear Energy Innovation and Modernization Act (NEIMA) was signed into law on January 14, 2019. This law, among other things, established a criterion in Section 104(c) of the Atomic Energy Act of 1954, as amended (AEA), for the NRC to use to determine whether a utilization facility is licensed as a commercial or industrial facility (Class 103

license issued pursuant to 10 CFR 50.22) or a research and development facility (Class 104(c) license issued pursuant to 10 CFR 50.21(c)).

Section 106 of NEIMA, "Encouraging private investment in research and test reactors," amended Section 104(c) of the AEA by adding the following text:

The Commission is authorized to issue licenses under this section for utilization facilities useful in the conduct of research and development activities of the types specified in section 31 in which the licensee sells research and testing services and energy to others, subject to the condition that the licensee shall recover not more than 75 percent of the annual costs to the licensee of owning and operating the facility through sales of nonenergy services, energy, or both, other than research and development or education and training, of which not more than 50 percent may be through sales of energy.

This criterion is in addition to, and different than, the criterion in 10 CFR 50.22, and the application should include information that demonstrates that the GEH NTR will meet this additional statutory requirement during the period of the renewed license. The same information may be used to demonstrate that the facility will meet both the requirements in 10 CFR 50.22 and Section 104(c) of the AEA, but the application should include separate descriptions of how the information shows compliance with each requirement.

Financial Assurance for Decommissioning: 10 CFR 50.75, "Reporting and recordkeeping for decommissioning planning"

Pursuant to 10 CFR 50.33(k), the NRC requires that an application for an operating license for a utilization facility to provide information to demonstrate how reasonable assurance will be provided that funds will be available to decommission the facility. Under 10 CFR 50.75(d), each non-power reactor applicant for or holder of an operating license shall submit a decommissioning report that contains a cost estimate for decommissioning the facility, an indication of the funding method(s) to be used to provide funding assurance for decommissioning, and a description of the means of adjusting the cost estimate and associated funding level periodically over the life of the facility. For the NRC staff's review, the following information is requested to be included in the renewal application:

- a. A current cost estimate to decommission the GEH NTR (to meet the NRC's radiological release criteria for decommissioning the facility for unrestricted use), as well as the basis for the cost estimate. Also, provide a summary of total decommissioning costs by labor, waste disposal, other items (such as energy, equipment, and supplies), and a 25 percent contingency factor;
- b. An indication of the funding method(s) to be used to provide funds for decommissioning; and
- c. A description of the means of adjusting the cost estimate and associated funding level periodically over the life of the facility. Also, provide a detailed numerical example updating the cost estimate.

Regarding the funding method(s) GEH intends to use to provide funds for decommissioning, it is the NRC staff's understanding that GEH currently relies on Surety Bond riders for decommissioning financial assurance. The GEH NTR license renewal application (LRA)

should contain information about the surety GEH plans to use, as described in 10 CFR 50.75(e)(1);

3. Environmental Report (10 CFR 51.45, “Environmental report”)

The environmental report should include sufficient operational data, analyses, and discussions to provide a substantial basis for NRC to develop its environmental assessment.

4. Technical Specifications

The content and format of technical specifications (TSs) should be developed considering the guidance in NUREG-1537, Part 1, Appendix 14.1, as supplemented by the American Nuclear Standards Institute/American Nuclear Society-15.1-2007, “The Development of Technical Specifications for Research Reactors.” In addition, ensure that each TS is supported by an analysis in the SAR. Any proposed changes to the current TSs should be described in detail, justified, and supported by its respective SAR analysis in the renewal application so these changes can be evaluated during the review.

5. Operator Regualification Program (10 CFR 50.54, “Condition of licenses,” paragraph (i-1) and 10 CFR Part 55, “Operators’ Licenses”)

The current NTR operator regualification plan will be reviewed with your renewal application to ensure it meets current NRC requirements. Submit a copy of your current operator regualification plan. However, if you wish to modify your approved operator regualification plan, changes should be submitted for the NRC review in accordance with the regulations cited above.

6. Emergency Plan (10 CFR 50.54(q) and (r), and 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” Appendix E, “Emergency Planning and Preparedness for Production and Utilization Facilities”)

The current NTR emergency plan will be reviewed with your renewal application to ensure it meets current NRC requirements. Submit a copy of your current emergency plan. However, if you wish to modify your approved emergency plan, changes should be submitted for the NRC review in accordance with the regulations cited above.

7. Physical Security Plan (10 CFR 73.67, “Licensee fixed site and in-transit requirements for the physical protection of special nuclear material of moderate and low strategic significance”)

The current NTR physical security plan (PSP) will be reviewed with your renewal application to ensure it meets current NRC requirements. Submit a copy of your current PSP. However, if you wish to modify your approved PSP, changes should be submitted for the NRC review in accordance with the regulations cited in 10 CFR 50.54(p).

## 8. Filing of Application

The requirements for submitting your renewal application and all other formal documentation relating to your license with respect to addressee, notarization, signatory and number of copies are given in 10 CFR 50.4 and 10 CFR 50.30, "Filing of applications for licenses; oath or affirmation." Also, information included in your renewal application that is considered sensitive or proprietary, that you seek to have withheld from the public, must be marked in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Any information related to security should be submitted in accordance with 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

The NRC staff request that the application for renewal be submitted to the NRC Document Control Desk no less than 30 days prior to the license expiration date, and earlier if possible, to allow the NRC staff adequate time to perform an acceptance review of the application.

## 9. NRC Staff Visits

As a part of our review of your LRA, members of the NRC licensing staff and its contractor, if applicable, may visit your facility to conduct regulatory audits. These visits will be coordinated with you following receipt of your application for renewal. An audit plan will be issued prior to the NRC staff's visit and an audit report will be issued following completion of the audit to document the results.

## 10. Acceptance Review

The NRC staff will perform an acceptance review of your application and make a determination as to whether it includes sufficient information for the NRC staff to begin its detailed technical review. Notwithstanding the acceptance review, the NRC staff may require additional information to complete the detailed technical review. If needed, the NRC staff will request this information by separate correspondence.

Based on the acceptance review [and any discussions during the pre-licensing meeting or by telephone], the NRC staff will provide an acceptance letter with an estimated schedule to complete its review and make a final determination on the application for license renewal. This date will be subject to change based on several factors, including requests for additional information, unanticipated changes to the scope of the review, unsolicited supplements to the license amendment request, and others. If the forecasted date changes, the NRC staff will notify you in writing of the new date and an explanation of the reason for the change.

The NRC staff plans to use the "Interim Staff Guidance [ISG] on Streamlined Review Process for License Renewal for Research Reactors" (ADAMS Accession No. ML092240244), to complete its review of your LRA. As discussed in the ISG, the NRC staff's review of your facility LRA will be based on the facility's power level. Since the NTR's maximum power level is 100 kilowatts thermal, the NRC staff is planning to use the focused review process. Additional details and our planned review are discussed in the enclosure.

If you have any questions, please contact me at (301) 415-3724, or by e-mail at [Duane.Hardesty@nrc.gov](mailto:Duane.Hardesty@nrc.gov).

Sincerely,

/RA/

Duane A. Hardesty, Senior Project Manager  
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Division of Advanced Reactors and Non-Power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

Docket No. 50-073  
License No. R-33

Enclosure:  
Reviewing License Renewal Application  
in Accordance with the Interim Staff  
Guidance Process and Schedule

cc: See next page

GE-Hitachi Nuclear Energy Americas LLC

Docket No. 50-073

cc:

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SUBJECT: GE-HITACHI NUCLEAR ENERGY AMERICAS LLC – REMINDER OF  
EXPIRATION OF FACILITY LICENSE NO. R-33 FOR THE NUCLEAR TEST  
REACTOR AND OPPORTUNITY TO SUBMIT AN APPLICATION FOR  
LICENSE RENEWAL DATE: JUNE 18, 2020

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## **Reviewing License Renewal Application in Accordance with the Interim Staff Guidance Process and Schedule**

### Introduction

The "Interim Staff Guidance [ISG] on the Streamlined Review Process for License Renewal for Research Reactors" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092240244), was developed to streamline the research and test reactor license renewal review process and to develop guidance for the U.S. Nuclear Regulatory Commission (NRC) staff for reviewing license renewal applications (LRAs). Although the NRC's review process has changed, the licensee/applicant is still required to submit its application in accordance with the applicable regulations contained in Title 10 of the *Code of Federal Regulations* Parts 50, 51, 55, and 73, and the recommendation provided in NUREG-1537, Part 1, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors, Format and Content."

### Background

In SECY-08-0161, "Review of Research and Test Reactor License Renewal Applications," dated October 24, 2008 (ADAMS Accession No. ML082550140), the NRC staff provided the Commission with information about the NRC staff's plans to improve the review of LRAs for research and test reactors. The Commission issued the staff requirements memorandum (SRM) for SECY-08-0161 on March 26, 2009 (ADAMS Accession No. ML090850159). The SRM directed the NRC staff to streamline the renewal process for such reactors, using some combination of the options presented in SECY-08-0161. The SRM also directs the NRC staff to implement a graded approach whose scope is commensurate with the risk posed by each facility. The graded approach incorporates elements of the alternative safety review approach discussed in Enclosure 1 of SECY-08-0161. In the alternative safety review approach, the NRC staff should consider the results of past NRC staff reviews when determining the scope of the review. A basic requirement, as contained in the SRM, is that licensees must be in compliance with applicable regulatory requirements.

The NRC staff developed the ISG to assist in the review of LRAs. The streamlined review process is a graded approach based on licensed power level. Under the streamlined review process, the facilities are divided into two tiers. Facilities with licensed power level of 2 megawatts thermal (MW(t)) and greater would undergo a full review using NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors." Facilities with a licensed power level less than 2 MW(t) would undergo a focused review that centers on the most safety significant aspects of the renewal application and will rely on past NRC reviews for certain safety findings.

### Streamlined Review Process

#### *Facilities with licensed power less than 2 MW(t) (FOCUSED review):*

The NRC staff will perform a focused review that centers on the most safety significant aspects of the renewal application and will rely on past NRC reviews for certain safety findings. Specifically, for reactors with licensed power levels less than 2 MW(t), the review will center on the sections of the safety analysis report (SAR) that are most significant to safety. Specifically, the focus will be on reactor design and operation, accident analysis, technical specifications

(TSs), radiation protection, waste management programs, financial requirements, environmental assessment, and changes to facility after submitting application.

The review will start with a familiarization site visit to the facility. The NRC team would comprise of, but not limited to, the NRC license renewal project manager, the NRC environmental assessment reviewer, the NRC financial reviewer, and, if applicable, the NRC's contractors. The purpose of this visit is to observe the site configuration and to conduct general discussions regarding LRA with the licensee.

After the first site visit, the NRC staff will conduct a comprehensive review of the LRA in accordance with the guidance provided in the ISG. The NRC staff will determine the application's conformance to the regulatory requirements and consistency with NRC guidance and, if needed, perform independent calculations to verify the applicant's statements in the SAR and proposed TSs. The NRC staff will identify the portions of the application needing further clarification to complete its review.

Prior to providing the formal request for additional information (RAI) to the licensee, the NRC staff will conduct a regulatory audit. The audit may be conducted by virtual conference, or if necessary, a site visit with the licensee to discuss the draft RAIs. This will provide an opportunity for the licensee to provide clarification related to the NRC staff's draft RAIs. Once the licensee receives the formal RAIs, the NRC staff will hold another conference call, if necessary, to clarify any questions that the licensee may have regarding the formal RAIs and ensure that the RAIs are understood by the licensee.

Prior to submitting its final responses to the RAIs, the NRC staff will hold a conference call or if necessary, a site visit, with the licensee to discuss its draft responses to the RAIs to ensure that the responses will enable the completion of the review of the LRA. The NRC staff will also be requesting that the licensee submit a draft of the proposed facility TSs incorporating all the applicable responses to the RAIs.

The NRC staff will review and evaluate the licensee's responses to the final RAI to determine adequacy and acceptability for the supporting safety conclusions based on the guidance provided in the ISG.

During its final phase of reviewing the LRA, the NRC staff may have further need for additional clarifications. The NRC staff will hold conference calls with the licensee, as necessary, to obtain the additional information necessary to complete its review of the LRA and to close the regulatory audit.

#### Streamlined Review Schedule

##### *Facilities with licensed power less than 2 MW(t) (FOCUSED review):*

The NRC staff will inform the licensee of the projected date for the issuance of the facility renewal license to permit adequate time for the licensee to prepare proper documentation and training once the facility renewal license is issued. It is estimated that a focused review of the LRA will be completed within 24 months, provided that the licensee provides adequate and timely responses to the NRC's RAI. The actual schedule will be provided in correspondence from the NRC staff accepting the GE-Hitachi Nuclear Energy Americas LLC, Nuclear Test Reactor renewal application for review.