U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 11, 30, 31, 32, 33, 34, 35, 36, 39, 40, 70, 73, and 74 and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the U.S. Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. GE-Hitachi Nuclear Energy Americas LLC	3. License Number: SNM-960
2. 6705 Vallecitos Road	4. Expiration Date: August 9, 2027
Sunol, California 94586	5. Docket No. 70-754

6. Source, Special Nuclear Material, By-product Material	7. Chemical and/or Physical Form	8. Maximum amount that Licensee May Possess at Any One Time Under This License
A. Uranium enriched to less than 5 percent ^{235}U	A. Solid form; unirradiated or mixed oxide fuel; irradiated with its attendant byproduct and reactor-produced transuranics	A. **[Security-Related Information – Withheld Under 10 CFR 2.390]**
B. Uranium enriched from 5 percent to less than 20 percent ^{235}U	B. Solid form; unirradiated or mixed oxide fuel; irradiated with its attendant byproduct and reactor-produced transuranics	B. **[Security-Related Information – Withheld Under 10 CFR 2.390]**
C. Uranium enriched to greater than 80 percent ^{235}U	C. Solid form; unirradiated or mixed oxide fuel; irradiated with its attendant byproduct and reactor-produced transuranics	C. **[Security-Related Information – Withheld Under 10 CFR 2.390]**
D. Plutonium	D. Solid form	D. **[Security-Related Information – Withheld Under 10 CFR 2.390]**
E. Special Nuclear Material	E. In any form.	E. **[Security-Related Information – Withheld Under 10 CFR 2.390]**

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9. Authorized use:

   a) 6A through 6D: for storage only

   b) 6E: in process or storage for lab analysis/engineering studies or in radioactive waste

10. Authorized Place of Use: The licensee's facilities in the Vallecitos Nuclear Center located near Pleasanton, California, as described in Section 1.1.1 of GE-Hitachi's March 18, 2015, license renewal application and revision dated February 26, 2016.

11. The licensee shall conduct authorized activities at the Vallecitos Nuclear Center located near Pleasanton, California, in accordance with the statements, representations, and conditions in its March 18, 2015, license renewal application and revision dated February 26, 2016.

12. This license shall be deemed to contain three sections: Safety Conditions, Safeguards Conditions, and Transportation Conditions. All these sections are part of the license, and the licensee is subject to compliance with all listed conditions in each section.

13. The licensee is hereby granted the special authorizations and exemptions identified in Section 1.3 of the license renewal application dated February 26, 2016.

14. At intervals not to exceed three years from its approval by the U.S. Nuclear Regulatory Commission (NRC), the licensee shall update the Decommissioning Funding Plan and provide it to the NRC for review and approval. After resolution of any NRC comments, the licensee shall submit final executed copies of the financial assurance instruments to the NRC.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: August 9, 2017

By: /RA/
Craig G. Erlanger, Director
Division of Fuel Cycle Safety, Safeguards, and Environmental Review
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

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SAFETY CONDITIONS

S-1. The licensee shall conduct activities at the Vallecitos Nuclear Center in accordance with statements, representations and conditions as described in the following documents:

a. License renewal application dated March 18, 2015, and its subsequent revision dated February 26, 2016.

b. Decommissioning Funding Plan dated January 31, 2014; Decommissioning Funding Plan Supplemental Information dated August 1, 2014; and Revised Decommissioning Funding Plan dated February 7, 2017, as amended.

S-2. Sealed Plutonium sources shall be subject to the leak testing and actions specified in the attached "License Condition for Leak Testing Sealed Plutonium Sources," dated April 1993.

S-3. Release of equipment or materials for unrestricted use shall be in accordance with the attached "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," April 1993.

S-4. The licensee shall provide to the Commission copies of its annual report summarizing the effluent monitoring and environmental surveillance programs at the Vallecitos Nuclear Center. This report shall be sent to the Division of Fuel Cycle Safety, Safeguards, and Environmental Review, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and the NRC Regional Office-Region IV at the address specified in Appendix D of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20.

S-5. Exemptions to the requirements of 10 CFR 70.24, “Criticality Accident Requirements,” are hereby granted according to 10 CFR 70.24(d). The exemptions are granted in accordance with Section 1.3.2, “Exemptions to Criticality Monitoring System Requirements,” of the February 26, 2016, license renewal application as follows:

The following areas are exempted from monitor alarm requirements:

a. Areas where special nuclear material (SNM) is stored in locations within the United States provided that the SNM is fully packaged as for transport in containers meeting all of the general license requirements of 10 CFR Part 71 or in containers owned by the General Electric Company and certified for transport under the provisions of 10 CFR Part 71 in accordance with the conditions of a Certificate of Compliance authorizing delivery of such containers to a carrier for Fissile Class I transport,

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b. Individual areas where there is negligible risk of criticality due to the amount or configuration of fissile material. In these areas, an evaluation has determined the risk of criticality is very low such that no credible accident sequence can be identified that results in criticality.

S-6. The licensee is hereby authorized to release radioactive materials in accordance with the Enclosure to this license.

Enclosure: Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material (April 1993)

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SAFEGUARDS CONDITIONS

SG-1.0 PHYSICAL PROTECTION REQUIREMENTS

SG-1.1: The licensee is authorized to possess or use, at the Vallecitos Nuclear Center, special nuclear material in the quantities specified in Conditions 6, 7, and 8, above, in accordance with the Physical Security Plan dated March 21, 2016, as approved by the Commission. The licensee shall maintain and follow the Physical Security Plan in accordance with Confirmatory Order EA-14-144, dated April 22, 2015.

SG-2.0 FACILITY OPERATION

SG-2.1: Notwithstanding those sections within Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 70 and 74 which establish requirements for licensees authorized to possess unirradiated special nuclear material (SNM) in quantities exceeding one effective kilogram, the licensee may follow the applicable requirements of 10 CFR Part 74 as though only authorized to possess less than one effective kilogram of SNM, provided that the licensee does not possess at any one time unirradiated SNM in quantity equal to or greater than one effective kilogram.

SG-2.2: A Fundamental Nuclear Material Control Plan which addresses the material control and accounting requirements of 10 CFR Sections 74.31; or Sections 74.41, 74.43, and 74.45; or Sections 74.51, 74.53, 74.55, 74.57, and 74.59, as appropriate, shall be submitted to and approved by the U.S. Nuclear Regulatory Commission prior to increasing the actual holdings of unirradiated SNM under License SNM-960 beyond one effective kilogram.

SG-2.3: The licensee shall maintain and follow its Material Control and Accounting (MC&A) Program Description for GE Hitachi Nuclear Energy Vallecitos Nuclear Center, Revision 0, dated June 17, 2015, in accordance with Confirmatory Order EA-14-144 dated April 22, 2015. Changes to the MC&A Program Description shall be submitted to the Commission for review and approval prior to implementation.

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TRANSPORTATION CONDITIONS

T-1.0 TRANSPORTATION SECURITY

T-1.1: The licensee shall not import, export, transport in a single shipment, or take delivery of a single shipment free on board at the point where it is delivered to an agent or carrier, quantities of special nuclear material as specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 73.1(b)(2) until a detailed plan as described in 10 CFR 70.22(g) has been submitted and approved by the U.S. Nuclear Regulatory Commission.

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT PRIOR TO RELEASE FOR UNRESTRICTED USE OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

U.S. Nuclear Regulatory Commission
Division of Fuel Cycle Safety
and Safeguards
Washington, DC 20005

April 1993

Enclosure

The instructions in this guide, in conjunction with Table 1, below, specify the radionuclides and radiation exposure rate limits which should be used in decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table 1 do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control is considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table 1 prior to the application of the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to anther organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment, or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes contamination is within the limits specified in Table 1. A copy of the survey report shall be filed with the Division of Fuel Cycle Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and also the Administrator of the NRC Regional Office having jurisdiction. The report shall be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

   a. Identify the premises.
   b. Show that reasonable effort has been made to eliminate residual contamination.
   c. Describe the scope of the survey the general procedures followed.
   d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

TABLE 1

ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES (1)	AVERAGE (2, 3, 6)	MAXIMUM (2,4,6)	REMOVABLE (2,5,6)
U-nat, U-235, U-238, and associated decay products	5,000 dpm a/100 cm2	15,000 dpm a/100 cm2	1,000 dpm a/100 cm2
Transuranics, Ra-226, Ra-228, Th-230, Th-22, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm2	300 dpm /100 cm2	20 dpm/100 cm2
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm2	3000 dpm/100 cm2	200 dpm/100 cm2
Beta-gamma-emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm by/100 cm2	15,000 dpm b/100 cm2	1000 dpmby/100 cm2

(1) Where surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

(2) As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

(3) Measurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

(4) The maximum contamination level applies to an area of not more than 100 cm2.

(5) The amount of removable radioactive material per 100 cm2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

(6) The average and maximum radiation levels associated with surface contamination resulting from beta-gamma-emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.