~~OFFICIAL USE ONLY – SECURITY-RELATED INFORMATION~~

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
1600 E. LAMAR BLVD
ARLINGTON TX 76011-4511

November 24, 2015

Mr. Thomas Caine, Site Manager
Vallecitos Nuclear Center
GE-Hitachi Nuclear Energy Americas LLC
6705 Vallecitos Road
Sunol, CA 94586

SUBJECT: NRC INSPECTION REPORT 070-00754/15-002

Dear Mr. Caine:

This refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted from October 27-28, 2015, at the Vallecitos Nuclear Facility in Sunol, California. The purpose of the inspection was to determine whether licensed activities were being conducted safely and in conformance with the NRC requirements. The results of the inspection were discussed with you and members of your staff at the conclusion of the onsite inspection on October 28, 2015. No violations were identified and no response to this letter is required.

During this inspection, NRC staff examined activities conducted under the NRC Materials License SNM-960 as they relate to public health and safety and to confirm compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response, if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

"Enclosure 2 transmitted herewith contains SUNSI. When separated from Enclosure 2, this transmittal document is decontrolled."

~~OFFICIAL USE ONLY – SECURITY-RELATED INFORMATION~~

Should you have any questions concerning this inspection, please contact Ms. Rachel S. Browder, Senior Health Physicist, at 817-200-1452 or the undersigned at 817-200-1191.

Sincerely,

/RA/

Ray L. Kellar, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket No. 070-00754
License No. SNM-960

Public Enclosure:
1. Inspection Report 070-00754/14-001
w/Attachment: Supplemental Information

Non-Public Enclosure:
2. Material Control and Accountability

U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket:	070-00754
License:	SNM-960
Report:	070-00754/15-002
Licensee:	GE-Hitachi Nuclear Energy Americas LLC
Facility:	Vallecitos Nuclear Center
Location:	Sunol, California
Dates:	October 27-28, 2015
Inspector:	Rachel S. Browder, Senior Health Physicist Fuel Cycle & Decommissioning Branch
	David Ditto, Senior Project Manager Material Control and Accountability Program
Approved by:	Ray L. Kellar, Chief Fuel Cycle & Decommissioning Branch Division of Nuclear Materials Safety
Attachment:	Supplemental Inspection Information

EXECUTIVE SUMMARY

GE-Hitachi Nuclear Energy Americas LLC
U.S. Nuclear Regulatory Commission (NRC) Inspection Report 070-00754/15-002

This inspection was a routine, announced inspection of licensed activities being conducted at the Vallecitos Nuclear Center. In summary, the licensee was conducting site activities in accordance with license and regulatory requirements.

Management Organization and Controls

- The licensee provided oversight and control of site activities in accordance with regulatory, license, and procedure requirements. Site staffing was adequate to fulfill the requirements of the license. The licensee implemented the onsite safety review committee as stipulated in the license. (Section 1.3)

Training

- The licensee had procedures in place to implement its training program. The training programs were provided as required by license condition and regulatory requirements. The facility personnel were found to be knowledgeable and qualified to perform their assigned functions. The training program met the requirements of the license. (Section 2.3)

Operational Safety

- The licensee consolidated the onsite SNM in accordance with its SNM consolidation plan. The limited-use SNM that remains outside of the designated storage area was being controlled by the licensee in a secured location. (Section 3.3)

Maintenance and Surveillance of Safety Controls

- The licensee was implementing its criticality alarm system in accordance with regulatory requirements and site procedures. While the criticality alarm system was inoperable, the licensee had not, and was not handling or moving SNM at its facility. (Section 4.3)

Fire Protection and Emergency Preparedness

- The licensee implemented its emergency response and fire protection program in accordance with procedural, license, and regulatory requirements. The licensee trained to realistic scenarios and provided adequate training to licensee staff and offsite entities. The licensee effectively maintained fire protection features and good housekeeping to minimize any impacts to fire protection controls. (Section 5.3)

Report Details

Summary of Plant Status

At the time of the inspection, the licensee continued to possess special nuclear material (SNM) at the Vallecitos Nuclear Center. Historically, the licensee performed activities under its license that included fuel examinations within various hot cells. At the time of this inspection, the majority of SNM was consolidated in containers at the designated storage area. The remaining SNM was located in a designated vault and consisted of standards used for creating primary control standards. These type of standards may be created once or twice a year. As a result, there has been a significant reduction in work activities under the SNM license. Other radioactive material activities were performed under the licensee's State of California license.

By letter dated April 30, 2015, the NRC found the licensee's decommissioning financial assurance documents acceptable, and that the General Electric Company guarantee was acceptable financial assurance for decommissioning. By letter dated March 18, 2015 (ML15077A495), the licensee submitted a revised license renewal application to the NRC. The request, if granted, would authorized General Electric-Hitachi (GEH) to continue licensed activities at the Vallecitos Nuclear Center for 10 years. The current license expired on June 30, 2010; however, the license is under timely renewal as provided in 10 CFR 2.109(a) because GEH filed an original renewal application on September 30, 2009, and subsequent revisions. The NRC accepted the revised license renewal application submitted on March 18, 2015, which supersedes previous submitted license renewal applications. The NRC formal technical review of the license renewal application was continuing at the time of this inspection.

1 Management Organization and Controls (88005)

1.1 Inspection Scope

The inspector reviewed the licensee's oversight and control of licensed activities.

1.2 Observations and Findings

The inspector reviewed the general administrative requirements as provided in License Condition S-1, Appendix A, Section 4 of the license. There had not been any changes to the organization since the last NRC inspection. At the time of the inspection, all managerial and staff positions were filled with qualified individuals. The radiation safety staff included the radiation safety officer, radiation protection supervisor, and four technicians. Other site staff that provided support to the radiation protection department included the instrument technician who performed instrument calibrations and the radiochemistry leader who was responsible for onsite radiological sample analyses. In summary, site staffing was adequate to fulfill the requirements of the license.

The licensee's procedure that controls changes to the facility, equipment, or procedures is implemented by Vallecitos Safety Standard No. 2.0, "Change Authorization," Revision 16, dated October 23, 2015. This recent revision incorporated security systems and features into the scope of the procedure, as well as additional control of items associated with the designated storage area and movement of SNM into, out of, or within the designated storage area. There were no change authorizations performed since the last NRC inspection.

The Vallecitos Technological Safety Council (VTSC) is an independent review body for licensed activities at VNC, including matters affecting nuclear safety, industrial safety, and safety-related compliance aspects of operations at the site. The NRC license requires the VTSC to meet at least quarterly and discuss relevant topics including radiation and criticality safety. Since the last NRC inspection, the VTSC met twice, on May 13, 2015, and August 12, 2015. The meeting minutes and summaries discussed operational experiences from other facilities, such as loss of coolant at Zion 2 nuclear power plant on May 13, 1992, reporting requirements, personnel exposures as they related to site goals, status of quarterly compliance audits, and industrial safety issues such as tripping hazards. The meeting minutes indicate that the council members were engaged and were proactive in addressing nuclear and industrial safety issues at the facility, instead of being reactive to such issues.

The inspectors questioned the licensee as to why the out-of-service criticality alarm located at the designated storage area had not been discussed during one of the VTSC meetings. The licensee explained that the matter was being worked under maintenance, and since no SNM was being moved, it was decided that it did not have to be discussed at the VTSC meeting because there was not a requirement to perform a nuclear safety evaluation nor was there any hazard associated with the maintenance issue. The NRC inspector determined that was reasonable and concluded the VTSC was functioning in accordance with license requirements.

1.3 Conclusions

The licensee provided oversight and control of site activities in accordance with regulatory, license, and procedure requirements. Site staffing was adequate to fulfill the requirements of the license. The licensee implemented the onsite safety review committee as stipulated in the license.

2 Training (88010)

2.1 Inspection Scope

The inspector reviewed the licensee's training program for compliance with regulations and license requirements.

2.2 Observations and Findings

NRC regulation 10 CFR 19.12 requires the licensee to provide instructions to workers who are likely to receive occupational doses in excess of 100 mrem. The extent of the instructions must be commensurate with potential radiological health protection problems present in the work place. Additional training requirements are provided in Appendix A, Section 4.3 of the license. The licensee's procedure was documented under Vallecitos Safety Standard 8.1, "Radiological Training," Revision 9, dated November 19, 2014.

The training records were computerized and electronically linked to the Radiation Work Permit (RWP) system, so that only authorized individuals with approved training could log onto a respective permit. Radiation Work Permit (RWP) 2015-05 Task 22 was reviewed. This RWP task involved high risk maintenance repair of the sump pump under hot cells number 1 and 2. The training records for the respective individuals authorized on Task #22 of the RWP were verified to have current training in the system, so that they were authorized on the respective task.

Other training records reviewed included: General Emergency Training on March 24, 2015; Building Emergency Team Training on March 24, 2015; Radiation Protection Refresher Training on January 28, 2015; and Department of Transportation training on September 14, 2014. Respiratory protection training, medical review, and fit tests were provided to site workers in June – August 2015.

2.3 Conclusions

The licensee had procedures in place to implement its training program. The training programs were provided as required by license condition and regulatory requirements. The facility personnel were found to be knowledgeable and qualified to perform their assigned functions. The training program met the requirements of the license.

3 Operational Safety (88020)

3.1 Inspection Scope

The inspector reviewed the licensee's control of operational activities to ensure compliance with license and procedure requirements.

3.2 Observations and Findings

The licensee has completed its consolidation of SNM at its facility. This effort was to implement a storage area for possession-only SNM and a separate area for limited-use SNM, under its NRC license. The licensee submitted a consolidated status report by letter dated November 20, 2014. The licensee has since moved the identified SNM from

the radiological laboratory building to storage containers at the designated storage area. As a result, only the SNM source samples stored in the vault are being used in a very limited manner.

The other SNM that remains outside the designated storage area includes SNM in evaporated sludge material. The licensee plans to dispose of the material as radioactive wastes.

3.3 Conclusions

The licensee consolidated the onsite SNM in accordance with its SNM consolidation plan. The limited-use SNM that remains outside of the designated storage area was being controlled by the licensee in a secured location.

4 Maintenance and Surveillance of Safety Controls (88025)

4.1 Inspection Scope

The inspector conducted a review of the licensee's criticality alarm system to ensure compliance with regulatory and procedure requirements.

4.2 Observations and Findings

NRC regulation 10 CFR 70.24 requires licensees to maintain criticality alarm systems for accident detection when a licensee is authorized to handle, use, or store certain gram quantities of SNM as specified in the respective regulation. The facility's license specifies under Appendix A, Section 5.9, "Criticality Monitoring," that the licensee shall not transfer fissile materials between criticality limit areas unless the [criticality] system is operable. On May 6, 2015, the criticality monitoring system failed the functional test while connected to a back-up power supply. The licensee determined that the uninterruptible power supply (UPS) was not functioning properly. The inspector determined that the licensee had not moved any SNM while the criticality monitoring system was inoperable, as required by the license, under Appendix A, as noted above.

The inspector reviewed the licensee's criticality testing system as described in the licensee's instrument maintenance procedure number 3.5.2, "Criticality Detector Maintenance and Source Checks," Revision 4. The licensee conducted criticality system functional tests on a monthly basis and after any maintenance that had been performed in accordance with the procedure. The functional tests were performed on all three detectors, in which two of the three detectors are required to confirm an alarm. The tests reviewed verified that the criticality alarm system responded at two alarm set points, the alert and the high level alarm.

The criticality alarm system is calibrated to cobalt-60. The licensee used a neutron-to-gamma dose ratio of 0.3 for its facility, which is similar to the ratio for moderated assemblies. This is reasonable for the moderated facility at the designated storage area.

Based on the failure of the functional test on May 6, 2015, the licensee posted the designated storage area, to inform employees that the criticality alarm system was not operable. The licensee planned to restore the criticality alarm to an operable status before moving any SNM requiring the alarm.

During a previous NRC inspection documented in report number 070-00754/14-002, the inspector questioned the technical bases for the default instrumentation efficiencies used for alpha particulate measurements and for beta-gamma measurements. At the time of this inspection, the licensee had completed its assessment of the default instrumentation efficiencies and was preparing the documentation. The licensee's documented evaluation will be reviewed during a future inspection.

The inspector observed the licensee conduct surveys of one of its laboratories. The licensee used good radiological practices in performing surveys of the laboratory. The licensee performed alpha scan, along with gross beta/gamma surveys for the laboratory. The licensee did not identify any contamination that was distinguishable from background levels during the gross survey of the radiological laboratory.

4.3 Conclusions

The licensee was implementing its criticality alarm system in accordance with regulatory requirements and site procedures. While the criticality alarm system was inoperable, the licensee had not, and was not handling or moving SNM at its facility.

5 Fire Protection and Emergency Preparedness (88050 and 88055)

5.1 Inspection Scope

The inspector reviewed the licensee's fire protection program to evaluate the operational status of material condition of the fire protection systems. The inspector also reviewed the licensee's emergency preparedness program to ensure compliance with license and regulatory requirements.

5.2 Observations and Findings

The inspector observed that licensee employees had multiple job responsibilities. Most individuals were involved in emergency preparedness and fire protection, along with their primary job responsibility. The licensee had an onsite fire team and each building has a responsible individual assigned as a "Building Emergency Coordinator (BEC)."

The inspector reviewed licensee's procedures C-5, "Fire Protection Procedure," Revision 7, dated September 23, 2014 and procedure A-5, "Emergency Control Procedure," Revision 10, dated July 16, 2015. Based on discussions with several staff members and the fire chief, the inspector concluded that the licensee was very knowledgeable of its responsibilities for emergency response and fire protection. In addition, individuals interviewed acknowledged that offsite responders would not enter the facility unless escorted by licensee personnel. This is consistent with the licensee's procedure.

The licensee provided training to outside response organizations. These entities included Cal Fire, Alameda County Fire Department, and Paramedics Plus. In addition to training, the licensee developed realistic emergency scenarios for the licensee and responding entities. These scenarios involved grass fires and a dumpster fire outside a radiological area. The inspector reviewed the scenario records for the response times and responding actions for several scenarios. The inspector concluded there was prompt response by the participants and responding actions were appropriate.

The licensee has memorandums of understanding in place with responding entities. These included: 1) Valley Care Medical Center, and 2) Paramedics Plus. The inspector reviewed the emergency response communications check as documented in the weekly equipment test and maintenance record. The communications check included, but not limited to Valley Medical Center, and a weekly all-call test for licensee responders.

The inspector reviewed the fire control system, (e.g., detection and suppression) in the radiological laboratory building to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the area. The inspector noted that the licensee effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition. The inspector verified that fire hoses and extinguishers were in good condition and available for immediate use, and that fire detectors and sprinklers were unobstructed. There was good housekeeping in the facility and there was not any unnecessary transient materials that could impact fire protection controls.

5.3 Conclusions

The licensee implemented its emergency response and fire protection program in accordance with procedural, license, and regulatory requirements. The licensee trained to realistic scenarios and provided adequate training to licensee staff and offsite entities. The licensee effectively maintained fire protection features and good housekeeping to minimize any impacts to fire protection controls.

6 Exit Meeting

The inspector reviewed the inspection scope and findings with licensee management at the conclusion of the onsite inspection. During the inspection, the licensee did not identify any information reviewed by the inspector as proprietary.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

J. Ayala, Leader, Environmental Health and Safety
T. Caine, Site Manager, Vallecitos Nuclear Center
H. Stuart, Technician, Environmental Health and Safety
M. Leik, Manager, Environmental Health and Safety

INSPECTION PROCEDURES USED

IP 88005	Management Organization and Controls
IP 88010	Training
IP 88020	Operational Safety
IP 88025	Maintenance and Surveillance of Safety Controls
IP 88050	Emergency Preparedness
IP 88055	Fire Protection
IP 92703	Follow-up of Confirmatory Action Letters or Orders

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

CFR	*Code of Federal Regulations*
ICA	Item Control Area
MBA	Material Balance Area
NRC	U.S. Nuclear Regulatory Commission
RWP	Radiation Work Permit
SNM	Special Nuclear Material
TID	Tamper Indicating Device

Should you have any questions concerning this inspection, please contact Ms. Rachel S. Browder, Senior Health Physicist, at 817-200-1452 or the undersigned at 817-200-1191.

Sincerely,

/RA/

Ray L. Kellar, Chief
Fuel Cycle and Decommissioning Branch
Division of Nuclear Materials Safety

Docket: 070-00754
License: SNM-960

Public Enclosure:
1. Inspection Report 070-00754/14-001
w/Attachment: Supplemental Information

Non-Public Enclosure:
2. Material Control and Accountability

Distribution:
See next page

Security-Related Enclosure 2 Report - OUO:
SUNSI Review Completed: RSB _____ ADAMS: ☒ Yes Initials: RSB
☒ Non-Publicly Available ☒ Sensitive-Security- Related-Periodic Review Required

Letter and Enclosure 1 Only:
SUNSI Review Completed: RSB ADAMS: ☒ Yes Initials: RSB
☒ Publicly Available ☒ Non-Sensitive **ADAMS Accession Number: ML15328A526**

OFFICE	RIV:DNMS:FCDB	HQ:NMSS	C:FCDB			
NAME	RSBrowder	DDitto	RLKellar			
SIGNATURE	*/RA/*	*Email*	*/RA/*			
DATE	11/23/2015	11/23/2015	11/24/2015			

OFFICIAL RECORD COPY

Letter to Thomas Caine from Ray L. Kellar, dated November 24, 2015

SUBJECT: NRC INSPECTION REPORT 070-00754/15-002

cc w/encl:
S. Murray, Manager, GE-Hitachi Nuclear Energy
R. Weisenmiller, Commissioner, California Energy Commission
G. Perez, Chief, California Dept. of Public Health
R. Rogus, Senior Health Physicist, California Dept. of Public Health
K. Prendergast, Senior Health Physicist, California Dept. of Public Health
M. Kelley, Executive Director, Tri-Valley CARES
Pleasanton Public Library

Electronic distribution w/encl:
T. Grice, BC:NMSS/FCSE/ECB
O. Siurano-Perez, PM:NMSS/FCSE/ECB
M. Shaffer, D:DNMS
L. Howell, DD:DNMS
J. Weil, Congressional Affairs Officer
R. Kellar, C:FCDB
R. Evans, FCDB
G. Schlapper, FCDB
C. Rosales-Cooper, ETA
M. Herrera, Fee Coordinator, DRMA
D. Ditto, PM:NMSS/FCSE/MCAB

GE-Hitachi Service List

Scott P. Murray, Manager
Licensing & Liabilities COE, Nuclear
GE-Hitachi Nuclear Energy
P.O. Box 780
Wilmington, NC 28402

Dr. Robert B. Weisenmiller, Commissioner
California Energy Commission
1516 Ninth Street (MS 33)
Sacramento, CA 95814

Gonzalo Perez, Chief
California Dept. of Public Health
Radiologic Health Branch, MS 7610
P.O. Box 997414, MS 7610
Sacramento, CA 95899-7414

Ron Rogus, Senior Health Physicist
California Dept. of Public Health
Radiologic Health Branch, MS 7610
P.O. Box 997414, MS 7610
Sacramento, CA 95899-7414

Kent M. Prendergast, Senior Health Physicist
California Dept. of Public Health
Radiologic Health Branch
850 Marina Bay Parkway
Building P, 1st Floor
Richmond, CA 98404-6403

Marylia Kelley
Executive Director, Tri-Valley CARES
2582 Old First Street
Livermore, CA 94551

Pleasanton Public Library
Attn: Ms. Karol Sparks
400 Old Bernal Avenue
Pleasanton, CA 94566