

August 21, 2015

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

SUBJECT: GE-HITACHI VALLECITOS NUCLEAR CENTER – NRC ROUTINE  
INSPECTION REPORT NO. 50-073/2015-201

Dear Mr. Caine:

From July 20 – 23, 2015, the U.S. Nuclear Regulatory Commission (NRC, the Commission) conducted an inspection at the GE-Hitachi Vallecitos Nuclear Center facility (Inspection Report No. 50-073/2015-201). The enclosed report documents the inspection results which were discussed on July 23, 2015, with you and members of your staff.

This inspection was an examination of activities conducted under your license as they relate to public health and safety and 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. Based on the results of this inspection, no findings of non-compliance were identified. No response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, requests for withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

T. Caine

- 2 -

Should you have any questions concerning this inspection, please contact Mr. Ossy Font at (301) 415-2490 or by electronic mail at [Ossy.Font@nrc.gov](mailto:Ossy.Font@nrc.gov).

Sincerely,

**/RA/**

Kevin Hsueh, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

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

Enclosure:  
NRC Inspection Report No. 50-073/2015-201

cc: See next page

GE-Hitachi Vallecitos Nuclear Center

Docket No. 50-73

cc:

Juan Ayala, Supervisor  
of Radiation Protection  
GE-Hitachi, Vallecitos Nuclear Center  
6705 Vallecitos Road  
Sunol, CA 94586

Mr. Dan Thomas, Manager NTR  
GE-Hitachi, Vallecitos Nuclear Center  
6705 Vallecitos Road  
Sunol, CA 94586

Mr. Carey Fleming  
GE-Hitachi, Vallecitos Nuclear Center  
3901 Castle Hayne Road, SCO 3028  
Wilmington, NC 28402-2819

Commissioner  
California Energy Commission  
1516 Ninth Street, MS-34  
Sacramento, CA 95814

California Department of Health  
ATTN: Chief  
Radiologic Health Branch  
P.O. Box 997414, MS 7610  
Sacramento, CA 95899-7414

Test, Research and Training  
Reactor Newsletter  
P.O. Box 118300  
University of Florida  
Gainesville, FL 32611-8300

T. Caine

- 2 -

Should you have any questions concerning this inspection, please contact Mr. Ossy Font at (301) 415-2490 or by electronic mail at [Ossy.Font@nrc.gov](mailto:Ossy.Font@nrc.gov).

Sincerely,

**/RA/**

Kevin Hsueh, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

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

Enclosure:  
NRC Inspection Report No. 50-073/2015-201

cc: See next page

**DISTRIBUTION**

PUBLIC	PROBReading File	RidsNrrDpr Resource	RidsNrrDprPrta
RidsNrrDprPrta	OFont, NRR	MCompton (Ltr only O5-A4)	
DHardesty, NRR	KHsueh, NRR	RidsOgcRp Resource	

**ADAMS ACCESSION NO.: ML15232A653**

**TEMPLATE #: NRC-002**

OFFICE	NRR/DPR/PROB	NRR/DPR/PROB
NAME	OFont	KHsueh
DATE	8/20/2015	8/21/2015

**OFFICIAL RECORD COPY**

**U. S. NUCLEAR REGULATORY COMMISSION**  
**OFFICE OF NUCLEAR REACTOR REGULATION**

Docket No: 50-073

License No: R-33

Report No: 50-073/2015-201

Licensee: GE-Hitachi Vallecitos Nuclear Center

Facility: Nuclear Test Reactor

Location: Sunol, CA

Dates: July 20-23, 2015

Inspectors: Ossy Font

Approved by: Kevin Hsueh, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

### GE-Hitachi Vallecitos Nuclear Center Nuclear Test Reactor Inspection Report No. 50-073/2015-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the GE-Hitachi Vallecitos Nuclear Center's (the licensee's) Class II research reactor facility safety program including: organization and staffing, operations logs and records, requalification training, maintenance and surveillance, emergency planning, and fuel handling since the last U.S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's programs were acceptably directed toward the protection of public health and safety and were in compliance with NRC requirements.

#### Organization and Staffing

- Organizational structure and responsibilities were consistent with Technical Specification requirements.
- Shift staffing met the minimum requirements for current operations.

#### Operations Logs and Records

- Operation logs and records are maintained as required by the licensee's administrative procedures.

#### Requalification Training

- Operator requalification was conducted as required by the Operator Requalification Plan and the program was being maintained up-to-date.

#### Maintenance and Surveillance

- Maintenance was being completed in accordance with Technical Specifications and procedural requirements.
- The program for surveillance verifications and calibrations was being implemented in accordance with Technical Specifications requirements.

#### Emergency Planning

- The emergency preparedness program, drills, and training of licensee personnel were being conducted in accordance with the Emergency Plan.

#### Fuel Handling

- The licensee did not conduct fuel movement and procedures would be developed if such operations are needed.

## REPORT DETAILS

### Summary of Facility Status

The GE-Hitachi Vallecitos Nuclear Center's (the licensee's) 100 kilowatt research reactor was operated in support of neutron radiography, experiments, reactor operator training, and periodic equipment surveillances. During the inspection, the reactor was operated for radiography for the licensee's clientele.

#### 1. **Organization and Staffing**

##### a. Inspection Scope (Inspection Procedure (IP) 69001)

The inspector reviewed the following to verify compliance with the organizational and staffing requirements in Technical Specifications (TS) 6.1 and 6.6.2.b:

- General Electric Nuclear Test Reactor (NTR) organizational structure and staffing
- Management change letter to the NRC, dated September 11, 2013
- Annual Report No. 54 for the GE-Hitachi NTR, dated March 31, 2014
- Annual Report No. 55 for the GE-Hitachi NTR, dated March 30, 2015
- Standard Operating Procedure (SOP) 6.1, "Staffing Requirements," dated September 8, 2004
- SOP 6.4, "Daily Surveillance Check Sheet," dated June 6, 2013
- NTR Daily Surveillance Check Sheets, from 2014 - present
- SOP 9.1, "Safety Responsibility and Authority," dated September 8, 2004

##### b. Observations and Findings

Since the previous U.S. Nuclear Regulatory Commission (NRC) inspection (Inspection Report 50-073/2013-201), there has only been one change in the organization at the GE-Hitachi NTR; specifically, a Level 3 management change. Mr. Tom Caine is the new Site Manager. Current NTR licensed staff consists of three licensed senior reactor operators (SROs) and one reactor operator (RO). The reactor operations staffs' qualifications satisfied the training and experience requirements stipulated in the TS. The operations logs and associated records confirmed that shift staffing met the minimum requirements for duty personnel. Review of records and staffing procedures verified that management responsibilities were administered as required by TS.

##### c. Conclusion

The NTR organization and staffing was consistent with TS requirements.

## 2. Operations Logs and Records

### a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to ensure that the operations program was being implemented as required in TS Sections 3.0, 4.0, and 6.0:

- NTR Console Log Books, dated from February 24, 2014, to present
- Annual Report No. 54 for the GE-Hitachi NTR, dated March 31, 2014
- Annual Report No. 55 for the GE-Hitachi NTR, dated March 30, 2015
- SOP 6.4, "Daily Surveillance Check Sheet," dated June 6, 2013
- NTR Daily Surveillance Check Sheets, from 2014-present

### b. Observations and Findings

The inspector conducted observations of routine activities and reviewed the NTR console log books, monthly and daily surveillance check sheets, and operation record forms. It was noted that the operators on duty were knowledgeable and proficient.

The inspector verified that the reactor operating characteristics and other procedurally required entries were logged appropriately and that the checklists were completed. A review of the licensee's logs and records indicated that the TS operational limits had not been exceeded and that the shift staffing met the minimum requirements.

A seismic activity occurred the week of the inspection, during off-hours, while the reactor was shut down. Prior to startup, the licensee performed a visual inspection and component testing, paying close attention to safety and control rod drive systems. No abnormal conditions were found and all test parameters were within their specified limits.

### c. Conclusion

Operational activities were consistent with applicable TS and procedural requirements.

## 3. Requalification Training

### a. Inspection Scope (IP 69001)

To verify that the operator requalification activities and training were conducted in accordance with the NRC-approved Operator Requalification Program and other regulatory requirements, including T.S. 6.1.4, the inspectors reviewed selected aspects of:

- Reactor Operator Requalification Program for the General Electric Nuclear Test reactor, dated June 1987
- SOP 9.14, "Reactor Operator Requalification Program," dated November 15, 1994
- NTR Operator Requalification Written and Operating Examination for 2013-present
- Requalification Training Records for 2013-present
- Medical examination records for the past two years
- NTR Console Log Books, dated from February 24, 2014, to present
- NTR Daily Surveillance Check Sheets, from 2014-present

b. Observations and Findings

Current NRC- licensed staff consisted of three SROs and one RO. As of the date of the inspection, all the operators' licenses were current. All operators were enrolled in the licensee's NRC- approved requalification and training program and had completed the minimum required hours per quarter of operating the reactor. The inspector noted that operators were receiving the required biennial medical examinations.

The licensee's requalification program included requirements for an annual operating test and a biennial written examination. The inspector verified that both examinations were administered at the specified frequency and that the level of difficulty was comparable to that of NRC-administered examinations.

The inspector confirmed that the requalification program was being administered in a manner that sufficiently maintains the qualifications and proficiency of all licensed operators.

c. Conclusion

Operator requalification was conducted as required by the Requalification Program and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 55.

4. **Maintenance and Surveillance**

a. Inspection Scope (IP 69001)

To determine that reactor maintenance and surveillance activities, and limiting conditions for operation (LCOs) checks, calibrations, and verifications were being completed as required by TS Sections 3 and 4, the inspector reviewed:

- NTR Console Log Books, dated from February 24, 2014, to present
- NTR Daily Surveillance Check Sheets, from 2014-present
- NTR Monthly Surveillance Check Sheets, dated 2014-present
- NTR Preventive Maintenance Index and Completion Records for 2014, to present

b. Observations and Findings

The inspector reviewed the maintenance records related to 2014 to the present preventive and corrective maintenance activities. Routine and preventive maintenance were well controlled and documented in a tracking system. A review of the NTR Preventive Maintenance Log indicated that all maintenance activities were conducted consistent with applicable requirements and that any modifications had been properly evaluated in accordance with 10 CFR 50.59. After all maintenance items were completed, system operational checks were performed to ensure the affected systems were operable before returning them to service.

During the 2014 inspection, the inspector noted that a temporary instruction was created to replace two pico-amp meter ion-chambers, leaving only one operational, because current procedures only allowed for the replacement of one at a time. Through discussion with the NRC project manager and licensee management, it was determined that the temporary procedure used should become a permanent procedure in order to avoid a similar situation in the future. The inspector is opening Inspector Follow-up Item (IFI) IFI 50-073/2015-201-01 in order to verify incorporation of the temporary procedure into the permanent procedures.

Daily, weekly, monthly and other periodic checks, tests, and verifications for TS required limiting conditions for operation (LCOs) were being completed as required. The inspector performed a random sampling of the required surveillances and verified that all of the recorded results were within the TS and procedurally prescribed parameters. The records and logs were noted to be complete and were being maintained as required.

The inspector paid close attention to safety and control rod drive surveillances and compared the previous results with the testing performed as a result of the seismic activity previously mentioned. The results were similar to previous observations.

c. Conclusion

Maintenance was being completed in accordance with Technical Specifications and procedural requirements.

The program for surveillance and LCOs confirmation was implemented in accordance with TS Section 4.0 requirements.

5. **Emergency Planning**

a. Inspection Scope (IP 69001)

To verify that the licensee was implementing and complying with Emergency Plan (E-Plan) requirements, the inspector reviewed selected aspects of:

- Vallecitos Nuclear Center (VNC) Radiological E-Plan (November 2013)
- GE-Hitachi VNC Site Emergency Procedures, Appendix B, "Emergency Preparedness Instruction"
- Memorandum of understanding (MOU) with Valleycare Medical Center; dated March 2, 2015
- MOU with Alameda County Sheriff's Office; dated February 26, 2015
- MOU with Paramedics Plus; dated February 23, 2015
- Response Letter from Alameda County Fire Department; dated October 1, 2014
- 2014 VNC Biennial Exercise and Building Evacuation Drills
- Various VNC Emergency Training Records

b. Observations and Findings

The E-Plan currently in use was being properly maintained by the licensee. The inspector noted that the E-Plan was applicable to the VNC campus and the NTR has implemented specific procedures. These procedures were readily available in the NTR control room and offices.

The inspector reviewed records for alarm testing and emergency equipment cabinet inventory and found that they were being completed as required. The inspector also reviewed the most recent audit, dated March 13, 2015, and found it appropriate.

Training for the facility operators, staff, and members of the VNC having emergency response duties included completion of an initial training program and the performance of annual review and an examination. Several staffers have completed respirator program training as well which included annual fit test, medical, and equipment checks. The inspector noted through records and interviews with licensee personnel that the training and examination was completed satisfactorily.

The inspector also noted that off-site first responders participated in on-site orientation and training. Participants included Paramedics Plus Alameda, the Alameda County and Cal fire departments. The inspector also noted that the emergency call list was last updated on June 1, 2015.

Through the review of drill scenarios and record reviews, the inspector determined that key emergency response personnel can respond to an emergency condition as required. The annually emergency evacuation drill was conducted as required by the E-Plan. The biennial comprehensive emergency drill, which involved State and local officials, was also completed. The lessons learned were discussed at the end of the drill, but the inspector found that the drill report, which includes the critiques with corrective actions to be completed was not done. This appeared to be a result of personnel transfers and responsibility changes. The inspector discussed the finding with the licensee and opened IFI 50-073/2015-201-02 in order to follow-up on the drill report. Prior to

the issuance of this inspection report, the licensee submitted the drill report to the NRC which also included the Condition Report generated to address the corrective action. The inspector found the report adequate and the IFI is considered closed.

The inspector visited the local fire department for a tour with the Fire Captain. The inspector noted that fire department staff appeared well trained and prepared to respond to an emergency at the VNC.

c. Conclusion

The emergency preparedness program was conducted in accordance with the approved E-Plan and implementing procedures.

6. **Fuel Handling**

a. Inspection Scope (IP 69001)

To determine whether fuel was inspected, handled, and maintained as required, the inspector interviewed licensee personnel and reviewed the following records:

- NTR Console Log Books, dated from February 24, 2014, to present
- Annual Report No. 54 for the GE-Hitachi NTR, dated March 31, 2014
- Annual Report No. 55 for the GE-Hitachi NTR, dated March 30, 2015

Observations and Findings

The licensee did not conduct fuel movements and fuel inspection is not required by TS. In the event fuel handling is required, the licensee indicated that they would develop procedures to conduct such operations.

b. Conclusion

The licensee did not conduct fuel movement and procedures would be developed if such operations are needed

7. **Exit Meeting Summary**

The inspector reviewed the inspection results with members of licensee management and NTR staff at the conclusion of the inspection on July 23, 2015. The licensee acknowledged the inspection findings.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

T. Caine	VNC Manager
M. Leik	EHS Manager
D. Thomas	NTR Manager
J. Ayala	Radiation Protection Supervisor
M. Venters	Emergency Preparedness Manager

## **INSPECTION PROCEDURES USED**

IP 69001      Class II Research and Test Reactors

## **ITEMS OPENED, CLOSED, AND DISCUSSED**

### Opened

IFI 50-073/2015-201-01      Incorporation of the temporary procedure to replace multiple pico-amp meters into the permanent procedures.

IFI 50-073/2015-201-02      Follow-up on the 2014 drill report

### Closed

IFI 50-073/2015-201-02      Follow-up on the 2014 drill report

### Discussed

None

## **LIST OF ACRONYMS USED**

ADAMS	Agencywide Document Access and Management System
EHS	Environmental Health and Safety
E-Plan	Emergency Plan
IP	Inspection Procedure
LCOs	Limiting Conditions for Operation
MOU	Memorandum of Understanding
NRC	U. S. Nuclear Regulatory Commission
NTR	Nuclear Test Reactor
RO	Reactor Operator
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TS	Technical Specifications
VNC	Vallecitos Nuclear Center