



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

February 5, 2007

Mr. David Turner, Manager
Vallecitos Nuclear Center
General Electric Company
6705 Vallecitos Road
Sunol, CA 94586

SUBJECT: NRC INSPECTION REPORT 050-00183/07-001, 050-00070/07-001 and
050-00018/07-001

Dear Mr. Turner:

This refers to the inspection conducted on January 9-11, 2007, at the General Electric (GE) Vallecitos Nuclear Center in Alameda County, California. The inspection was an examination of decommissioning activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspection included an examination of selected procedures and representative records, observations of activities, and interviews with personnel. Details of the inspection were presented to your staff at the conclusion of the onsite inspection. The enclosed report presents the results of that inspection. The inspection determined that you were maintaining the three units in SAFSTOR in compliance with regulatory and license requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document 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.

Should you have any questions concerning this inspection, please contact the undersigned at (817) 860-8191 or Mr. Robert Evans, Senior Health Physicist, at (817) 860-8234.

Sincerely,

/RA/

D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle and Decommissioning Branch

Docket Nos.: 050-00183; 050-00070; 050-00018
License Nos.: DR-10; TR-1; DPR-1

GE Vallecitos Nuclear Center

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Enclosure: NRC Inspection Report No.
050-00183/07-001, 050-00070/07-001 and 050-00018/07-001

cc w/enclosure:
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FCDB File

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U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 050-00183, 050-00070, and 050-00018

License Nos.: DR-10, TR-1, and DPR-1

Report No.: 050-00183/07-001, 050-00070/07-001 and 050-00018/07-001

Licensee: GE

Facility: Vallecitos Nuclear Center

Location: 6705 Vallecitos Road
Sunol, CA 94586

Dates: January 9-11, 2007

Inspector: Robert J. Evans, P.E., C.H.P., Senior Health Physicist
Fuel Cycle & Decommissioning Branch

Accompanied By: Jason M. Razo, Health Physicist
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John T. Buckley, Project Manager
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Reactor Decommissioning Branch

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Research and Test Reactors Branch

Approved By: D. Blair Spitzberg, Ph.D., Chief
Fuel Cycle & Decommissioning Branch

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

GE Vallecitos Nuclear Center
NRC Inspection Report No. 050-00183/07-001; 050-00070/07-001 and 050-00018/07-001

This inspection was a routine, announced inspection of activities being conducted at the three shutdown research and test reactors located at GE Vallecitos Nuclear Center. The inspection included site tours and verification of compliance with Technical Specifications requirements. In summary, the licensee was maintaining the three reactors in SAFSTOR in compliance with regulatory and license requirements.

Class III Research and Test Reactors

- The licensee had qualified individuals, as required by site surveillance procedures, to maintain compliance with Technical Specifications. The licensee had established a training program for maintaining worker qualifications. Audits were being conducted as required by the licenses (Section 1.2.a).
- The licensee's oversight programs were in compliance with Technical Specifications including development of procedures, conduct of annual inspections, conduct of annual radiological surveys, and documentation of these annual inspections and surveys (Section 1.2.b).
- Surveillances were conducted in compliance with Technical Specifications. Site tours were conducted, and no radiological or safety hazards were identified. Water was identified in the basement of the Vallecitos Boiling Water Reactor, and the licensee was considering options for removing the water. The licensee's records indicated that the safe storage of the three reactors had no impact on the environment (Section 1.2.c).

Report Details

Summary of Plant Status

The GE Test Reactor (GETR) was constructed in 1957. Full power operations were achieved in 1959 at 33 megawatts-thermal (Mw(t)). The reactor was updated to 50 Mw(t) in 1966. The unit was shut down in 1977 in response to an NRC Show Cause Order. The Show Cause Order was issued because of seismic concerns that were identified at that time. In 1982, the NRC lifted the Show Cause Order, but the licensee elected to permanently discontinue operation of the GETR.

The Empire State Atomic Development Associates Incorporated Vallecitos Experimental Superheat Reactor (EVESR) achieved full power operation in 1964 but was shut down in 1967. The reactor achieved a maximum power level of 17 Mw(t). Finally, the Vallecitos Boiling Water Reactor (VBWR) achieved full power operations at 50 Mw(t) in 1957 but was permanently shut down in 1963.

At the time of the inspection, reactor fuel had been permanently removed from all three sites. Each of the three licenses allowed possession of the associated reactor and related byproduct material. The three units were in SAFSTOR, the decommissioning alternative in which a nuclear facility is safely stored for an extended period of time. The main purpose of SAFSTOR is to allow for the decay of cobalt-60 to reduce exposures to occupational workers during future decommissioning activities.

The GETR and EVESR licenses are scheduled to expire in 2016. The VBWR license has no expiration date. The licensee does not intend to decommission the three reactors in the near future. Each of the three licenses allows the licensee to remove and dispose of components other than the reactor pressure vessels. Decommissioning work completed in recent years were conducted in outdoor areas as specifically authorized under the licensee's State of California byproduct material license. This work included boiler and cooling tower removal. Work planned for 2007 includes decommissioning of outdoor tanks under the State license.

1 Class III Research and Test Reactors (69002)

1.1 Inspection Scope

The inspection objective was to determine if site activities were being conducted safely and in accordance with regulatory requirements and licensee commitments. Areas reviewed included site staffing, license audits, Technical Specifications (TS) compliance, radiological surveys, and surveillance activities. The inspection included tours of all three reactor sites. The emergency preparedness program was not reviewed because the licensee maintains a common, site-wide program that is routinely inspected in conjunction with the other NRC licenses.

1.2 Observations and Findings

a. Staffing and Audits

The inspector reviewed site staffing to determine if the licensee had sufficient qualified personnel to implement TS requirements, including routine facility inspections and radiological surveys. The individual responsible for oversight of the three shutdown reactors was the manager, facilities maintenance & quality assurance. Personnel to conduct the radiological surveys was provided by the manager, regulatory compliance. These two groups had a sufficient number of qualified maintenance and radiation safety technicians to implement TS requirements.

The VBWR surveillance procedure provides the experience requirements for the personnel conducting the annual inspections. The inspector reviewed the training records for selected technicians conducting the inspections and concluded that these individuals had received hazardous materials, confined space, and radiation safety training. The inspector noted that the licensee had established and implemented extensive radiological and industrial safety training and retraining programs for all site workers.

By letter dated June 26, 2006, the licensee informed the NRC of several changes in site management. The former regulatory compliance manager was promoted to the position of manager, Vallecitos Nuclear Center. The licensee subsequently hired a new regulatory compliance manager/radiation safety officer. The facilities maintenance and quality assurance manager's position, the individual responsible for oversight of the three shutdown reactors, was not impacted.

Both the EVESR and GETR licenses state that periodic reviews will be conducted by the Nuclear Safety Group. The licensee implemented this requirement through annual audits by a member of the regulatory compliance group. The inspector reviewed the most recent audits. No license violations or unsafe conditions were identified by the auditors for the EVESR and the GETR licenses. The December 2006 audit report for the VBWR documents the discovery of about 2-inches of water on the basement floor. The auditor concluded that the water may have been either condensation or in-leakage from a pipe with a cracked-open valve. Corrective actions included shutting the suspect valve to eliminate the in-leakage of water. As discussed below, the water was still present during the inspector's tour of the VBWR, and the licensee was considering its options for removing the water from the building.

b. Active License Status

The inspector reviewed the licensee's implementation of TS requirements. The TS for the EVESR and the GETR require written procedures for both access control and periodic inspection of the facilities. Facilities Maintenance Procedure 6.1, "Access Control," provided the access control requirements, while Procedure 6.2, "EVESR/VBWR/GETR Surveillance Procedures," provided the inspection requirements. In summary, the licensee had established and implemented these procedures in compliance with TS requirements.

The three licenses require annual inspections, annual radiological surveys, and documentation of these inspections and surveys. The annual inspections and surveys are controlled by Facilities Maintenance Procedure 6.2 which provide the three inspection checklists. The licensee had documentation demonstrating that the inspections and surveys were conducted annually since 2004. Although not required by the licenses, the licensee also conducted weekly exterior inspections of all three facilities and quarterly inspections of the GETR.

The licensee is required to submit annual reports to the NRC. The inspector confirmed that the licensee had submitted annual reports for all three facilities to the NRC since the last inspection.

Since the previous inspection, the licensee had not operated any of the three facility ventilation systems, therefore, the TS requirements for emissions sampling were not implemented. Further, there were no design changes approved since the previous inspection, so the inspector did not verify compliance with 10 CFR 50.59 requirements.

c. Radiological Surveys and Surveillance Activities

The licensee conducted annual radiological surveys including ambient exposure rate measurements, air sampling, and swipe sampling. No acceptance criteria has been established for the sample results, but the licensee compared the year-to-year results to monitor for abnormal changes in radiological conditions. The radiological sample results were included in each of the three annual reports that were submitted to the NRC.

The licensee's occupational exposure records were not reviewed because the licensee had a site-wide monitoring program that is reviewed by the NRC during inspection of the other site licenses. Further, radiation exposures to site personnel during these routine, annual inspections are expected to be small compared to other activities in progress at the Vallecitos Nuclear Center.

The inspector conducted tours of the inside and outside of the three reactor facilities. The tours included an independent radiological survey of ambient exposure rates using a Ludlum Model 2401-P survey meter (NRC No. 21190G, calibration due date of 09/25/07). Radiation protection postings were adequate at each facility. The licensee was observed to have sufficient radiological equipment to conduct the annual surveys. Overall, no significant radiological or safety hazard was identified during the site tours.

The GETR was found to be in good condition for the age of the facility. Some cracking of exterior insulation was observed. The licensee was exploring its options for resolving the problem. The solutions being considered included early removal of the insulation material. No obvious water leaks were observed inside or outside of the building. The licensee stated that the GETR reactor pressure vessel was filled with water. Independent radiological surveys identified exposure rates up to 6 millirems per hour inside the facility, results that were comparable to the licensee's most recent annual survey.

The VBWR was observed to have a thin layer of water on the basement floor, a condition that was previously identified during the licensee's December 2006 annual inspection. As noted above, the fluid was suspected to have originated from either in-leakage or condensation. The licensee was considering its options for removal of the water. The options include pumping the water out of the building and using a de-humidifier to enhance evaporation of moisture from the building. The ambient exposure rates ranged up to 15 millirems per hour in discrete locations in the basement of the building. Similar to the GETR, the VBWR reactor pressure vessel was filled with water.

The EVESR containment was observed to be dry. Water damage was evident in the lower level, a result of a 1993 water intrusion event. The EVESR TS has a special requirement for controlling access to areas below the 549-foot elevation. The licensee previously constructed and installed a locked cover over the access stairs leading to the lower levels. A de-humidifier was used to help keep the EVESR building dry. The condensation was being collected in portable tanks. The exposure rates ranged up to 15 millirems per hour in discrete locations in the building. Unlike the GETR and VBWR, the EVESR reactor pressure vessel was dry.

The inspector observed that the three reactor buildings appeared intact with no obvious liquid or gaseous effluent points. In recent years, the licensee submitted summaries of the site-wide effluent monitoring program with the GETR annual reports. The effluent monitoring information indicated that the shutdown reactors had no impact on the environment.

1.3 Conclusion

The licensee had qualified individuals, as required by site surveillance procedures, to maintain compliance with TS. The licensee had established a training program for maintaining worker qualification. Audits were being conducted as required by the licenses.

The licensee's oversight programs were in compliance with TS including development of procedures, conduct of annual inspections, conduct of annual radiological surveys, and documentation of these annual inspections and surveys.

Surveillances were conducted in compliance with TS. Site tours were conducted, and no radiological or safety hazards were identified. Water was identified in the basement of the VBWR, and the licensee was considering options for removing the water. The licensee's records indicated that the safe storage of the three reactors had no impact on the environment.

2 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the exit meeting on January 11, 2007. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Bassett, Manager, Facilities Maintenance & Quality Assurance
L. Martin, Manager, Regulatory Compliance and Environmental Health & Safety
H. Stuart, Specialist, Radiological Engineering
D. Turner, Manager, Vallecitos Nuclear Center

INSPECTION PROCEDURE USED

IP 69002 Class III Research and Test Reactors

ITEMS OPENED AND CLOSED

Opened

None

Closed

None

Discussed

None

LIST OF ACRONYMS

EVESR	Empire State Atomic Development Associates Incorporated Vallecitos Experimental Superheat Reactor
GETR	GE Test Reactor
IP	NRC Inspection Procedure
Mw(t)	megawatts-thermal
TS	Technical Specifications
VBWR	Vallecitos Boiling Water Reactor