

**ENCLOSURE**

**U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV**

Docket No.: 50-70; 50-18; 50-183

License No.: TR-1, DPR-1, DR-10

Report No.: 50-70/99-01

Licensee: General Electric Company

Facilities: General Electric Test Reactor (GETR)  
Vallecitos Boiling Water Reactor (VBWR)  
ESADA Vallecitos Experimental Superheat Reactor (EVESR)

Location: Vallecitos Nuclear Center  
Sunol, California

Dates: October 18-20, 1999

Inspectors: J. V. Everett, Sr. Health Physicist  
R. S. Carr, Health Physicist

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

Attachment: Supplemental Information

## EXECUTIVE SUMMARY

Vallecitos Nuclear Center  
NRC Inspection Report 50-70/99-01

The Vallecitos Nuclear Center consists of one shutdown power reactor, two shutdown test reactors, one operating test reactor, and numerous radioactive material activities conducted under an NRC Special Nuclear Materials License and a State of California Byproduct Materials License. This inspection included review of the status of the three shutdown reactor facilities: General Electric Test Reactor (GETR), Vallecitos Boiling Water Reactor (VBWR) and Empire State Atomic Development Associates Incorporated (ESADA) Vallecitos Experimental Superheat Reactor (EVESR). The SAFSTOR condition of EVESR, GETR and VBWR were evaluated during a tour of the facilities. The facilities showed normal degradation from the many years of being in SAFSTOR. No unusual or unexpected conditions were observed. The licensee's programs to maintain the facilities in a SAFSTOR condition were determined to be adequate.

### Decommissioning Performance and Status Review

- The three reactor facilities at the Vallecitos Nuclear Center were being maintained in a SAFSTOR condition. The facilities were kept closed and locked. A tour of the facilities found no structural or radiological problems. Radiation levels were low and had been relatively constant over the past several years. No significant problems were noted concerning the facilities (Section 1).

### Cold Weather Preparations

- Special provisions were not necessary for cold weather protection at the three shutdown reactor facilities. Water associated with the facilities was not susceptible to freezing problems. No spent fuel was stored at the reactor facilities (Section 2).

### Organization, Management and Cost Controls

- The licensee's current organization was reviewed and found to be in compliance with technical specifications (Section 3).

### Self-Assessments, Auditing, and Corrective Actions

- The licensee was required by technical specifications to periodically audit certain technical areas related to the shutdown reactors. Two audits had been completed. Two additional audits were scheduled (Section 4).

### Safety Reviews, Design Changes and Modifications

- No change authorizations were issued in 1998 or 1999 for GETR, EVESR, or VBWR (Section 5).

## Report Details

### Summary of Plant Status

The Vallecitos Nuclear Center consists of one shutdown power reactor, two shutdown test reactors, one operating test reactor, and numerous radioactive material activities conducted under an NRC Special Nuclear Materials License and a State of California Byproduct Materials License.

The General Electric Test Reactor (GETR) suspended operations in October 1977. All reactor fuel, failed capsules, fuel experiments, and target capsules were removed from the facility. All fuel had been shipped offsite to a Department of Energy facility. The reactor had been used to conduct experiments for General Electric's boiling water reactor program and to produce radioisotopes. Periodic facility entries were completed by the licensee to conduct radiological surveys and verify that general facility conditions had not changed. The facility was being maintained closed and locked.

The Empire State Atomic Development Associates Incorporated (ESADA) Vallecitos Experimental Superheat Reactor (EVESR) suspended operations February 1, 1967. EVESR was a light water moderated, steam cooled, superheat reactor using slightly enriched uranium dioxide as a fuel. The purpose of EVESR was to provide information on the suitability of various types of experimental superheat fuel elements. EVESR achieved initial criticality on November 25, 1963, and operated at a maximum power level of 17 megawatts thermal. After shutdown in 1967, all fuel and special nuclear material was removed from the facility and shipped offsite. All water was drained from the reactor systems and tanks. All nonessential piping systems external to containment and the cooling tower were removed. Annual facility entries were completed by the licensee to perform radiological surveys and verify that general facility conditions had not changed. The facility was being maintained closed and locked.

The Vallecitos Boiling Water Reactor (VBWR) discontinued operation December 9, 1963. The fuel and much of the equipment used in operating the reactor were removed. All fuel was shipped offsite. Annual facility entries had been completed by the licensee to perform radiological surveys and verify that general facility conditions had not changed. The facility was being maintained closed and locked.

## **1 Decommissioning Performance and Status Review (71801)**

### **1.1 Inspection Scope**

The status of the decommissioned reactors was reviewed to verify that facilities were being maintained in a safe condition. This included consideration for structural integrity, fire safety, radiological safety, and control of access to the facilities.

### **1.2 Observations and Findings**

The three shutdown reactors at the Vallecitos Nuclear Center were being maintained in a SAFSTOR condition. A tour of the facilities was conducted. No significant physical

changes to the structures or equipment inside containment had occurred since the last NRC tour conducted in November 1998. Fire loading was minimal. Structurally, the facilities were sound. Some deterioration inside containment was observed during the tours. In particular, the lower level of EVESR had rust and corrosion from the in-leakage of water into the facility which occurred in 1993. During the tour of VBWR, the inspector noted several areas where asbestos had deteriorated significantly from the piping and had fallen on the floor or through the grating. Housekeeping reflected the years of inactivity in the facilities. Access control to the facilities was maintained by keeping the facilities locked. Radiological controls were adequate to limit the potential for spreading contamination. Radiation levels were low in the facilities. All areas inside the containments were properly posted.

The VBWR facility had been shutdown for approximately 36 years. Conditions inside VBWR had remained essentially unchanged since the last NRC inspection. No changes to the facility structures had been made. Radiation levels were relatively constant.

The EVESR facility had been shutdown for approximately 32 years. Conditions at EVESR remained essentially unchanged since the last NRC inspection. No structural changes to the facility were identified. Radiation levels had been relatively constant. A continuous dehumidifier was operated inside the containment building with the discharge collected in a tank located in an adjacent support building. Analysis of the discharge showed no elevated levels of contamination.

The GETR facility had been shutdown for approximately 22 years. Conditions at GETR remained essentially unchanged since the last NRC inspection. Radiological levels were relatively constant with no unusual conditions noted.

### 1.3 Conclusion

The three reactor facilities at the Vallecitos Nuclear Center were being maintained in a SAFSTOR condition. The facilities were kept closed and locked. A tour of the facilities found no structural or radiological problems. Radiation levels were low and had been relatively constant over the past several years. No significant problems were noted concerning the facilities.

## 2 **Cold Weather Preparations (71714)**

### 2.1 Inspection Scope

The three reactor facilities were reviewed to determine if special provisions were needed for freeze protection during cold weather.

### 2.2 Observations and Findings

Winter weather for the GE Vallecitos area is typically mild, resulting in few cold weather problems. Water is present in the GETR reactor vessel, VBWR reactor vessel, and EVESR sump. However, there were no locations identified during this inspection where

water was susceptible to freezing and damage to the facility would occur. No special provisions had been made by the licensee for freeze protection related to the three shutdown reactor facilities. No spent fuel was stored at the shutdown reactor facilities.

### 2.3 Conclusion

Special provisions were not necessary for cold weather protection at the three shutdown reactor facilities. Water associated with the facilities was not susceptible to freezing problems. No spent fuel was stored at the reactors' facilities.

## 3 **Organization, Management, and Cost Controls (36801)**

### 3.1 Inspection Scope

The licensee's current organization was reviewed to determine if any changes to key personnel had been made.

### 3.2 Observations and Findings

The licensee maintained a current organization chart which showed reporting chains and identified, by name, personnel assigned as managers for key functions. Technical Specification 6.1.1 of GETR License 50-70 established reporting chains for the functions of radiation safety, facility supervisor, and facility manager. The licensee's organization satisfied the concept for the organizational structure specified in the technical specifications.

### 3.3 Conclusion

The licensee's current organization was reviewed and found to be in compliance with technical specifications.

## 4 **Self-Assessments, Auditing, and Corrective Actions (40801)**

### 4.1 Inspection Scope

The licensee's internal audit program included audits and assessments of the various site programs to verify compliance with regulations and company policies. Scheduling and completion of the required audits was reviewed.

### 4.2 Observations and Findings

Technical Specification 6.2.4 of the GETR License 50-70 required periodic examination of selected areas of the licensee's programs. Four specific areas were identified in the technical specification. The items requiring examination included: 1) technical specifications and the license, 2) staff qualifications, 3) actions taken onsite to correct deficiencies, and 4) the emergency plan and procedures. The licensee had developed a table for audits and a cross matrix of the required topics to be audited. This matrix

included the four areas defined in Technical Specification 6.2.4. Two of the four areas for GETR had been reviewed. These were Technical Specification 6.2.4.2 "Qualifications of the Staff," and Technical Specification 6.2.4.3 "Action to Correct Deficiencies." Both reviews had been completed on April 26, 1999, and documented in memos. The other two areas were scheduled for future audits.

#### 4.3 Conclusion

The licensee was required by technical specifications to periodically audit certain technical areas related to the shutdown reactors. Two audits had been completed. Two additional audits were scheduled.

### 5 **Safety Reviews, Design Changes, and Modifications (37801)**

#### 5.1 Inspection Scope

The change authorization and modification program implemented by the licensee to comply with 10 CFR 50.59 was reviewed.

#### 5.2 Observations and Findings

VNC Safety Standard 2.0, "Change Authorization," dated May 22, 1990, was used by the licensee to conduct safety evaluations in accordance with the requirements in 10 CFR 50.59. A review of the site change authorization log was completed. No change authorizations had been issued in 1998 or 1999 for GETR, EVESR, or VBWR.

#### 5.3 Conclusion

No change authorizations were issued in 1998 or 1999 for GETR, EVESR, or VBWR.

### 6 **Exit Meeting**

The inspectors presented the inspection results to members of the licensee management at the exit meeting on October 20, 1999. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

## ATTACHMENT

### PARTIAL LIST OF PERSONS CONTACTED

#### Licensee

F. Arlt, Facility Manager  
C. Bassett, Regulatory Compliance Manager  
B. Murray, Licensing Engineer  
R. Pomares, Manager, Engineering and Materials Services  
M. Smith, Safety Evaluation, Procedure, and Training Manager  
G. Stimmell, Vallecitos and Morris Operations Manager  
H. Stuart, Radiological Engineer

### INSPECTION PROCEDURES USED

36801	Organization, Management and Cost Controls
37801	Safety Reviews, Design Changes, and Modifications
40801	Self Assessments, Auditing, and Corrective Actions
71714	Cold Weather Preparations
71801	Decommissioning Performance and Status Review

### ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	None
<u>Closed</u>	None
<u>Discussed</u>	None

### LIST OF ACRONYMS

ESADA	Empire State Atomic Development Associates Incorporated
EVESR	ESADA Vallecitos Experimental Superheat Reactor
GE	General Electric Company
GETR	General Electric Test Reactor
mR/hr	milliRoentgen/hour
NRC	Nuclear Regulatory Commission
SNM	Special Nuclear Material
VBWR	Vallecitos Boiling Water Reactor
VNC	Vallecitos Nuclear Center