

July 9, 2007

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

SUBJECT: GENERAL ELECTRIC COMPANY - NRC ROUTINE INSPECTION REPORT NO.  
50-73/2007-202

Dear Mr. Turner:

On June 25-26, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the General Electric Nuclear Test Reactor facility. The inspection included a review of activities authorized for your facility. The enclosed inspection report presents the results of that inspection.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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>.

Should you have any questions concerning this inspection, please contact Mr. Kevin M. Witt at 301-415-4075.

Sincerely,

/RA/

Johnny Eads, Branch Chief  
Research and Test Reactors Branch B  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-73  
License No. R-33

Enclosure: NRC Inspection Report No. 50-73/2007-202

cc w/enclosure: See next page

General Electric Company (NTR)

Docket No. 50-73

cc:

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Test, Research, and Training  
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**U. S. NUCLEAR REGULATORY COMMISSION**  
**OFFICE OF NUCLEAR REACTOR REGULATION**

Docket No: 50-73

License No: R-33

Report No: 50-73/2007-202

Licensee: General Electric Company

Facility: Nuclear Test Reactor

Location: Sunol, CA

Dates: June 25-26, 2007

Inspector: Kevin M. Witt

Approved by: Johnny Eads, Branch Chief  
Research and Test Reactors Branch B  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

## EXECUTIVE SUMMARY

### General Electric Nuclear Test Reactor Facility NRC Inspection Report No.: 50-73/2007-202

The primary focus of this routine, announced inspection was the on-site review of selected aspects and activities since the last NRC inspection of the licensee's Class II non-power reactor safety programs including: operations logs and records, operator requalification, surveillance and limiting conditions for operations, emergency planning, maintenance logs and records, and fuel handling logs and records.

The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

#### Operations Logs and Records

- Operational activities were consistent with applicable Technical Specification and procedural requirements.

#### Operator Requalification

- The licensee's requalification program was up-to-date, and plan requirements were met.

#### Surveillance and Limiting Conditions for Operations

- The licensee's program for completing surveillance inspections satisfied Technical Specification and licensee administrative controls.

#### Emergency Planning

- The emergency preparedness program was conducted in accordance with the approved Emergency Plan.

#### Maintenance Logs and Records

- Maintenance logs, records, and performance satisfied Technical Specification and procedure requirements.

#### Fuel Handling Logs and Records

- The licensee does not have a program for fuel handling at the Nuclear Test Reactor.

## REPORT DETAILS

### Summary of Plant Status

The licensee's 100 KiloWatt (kW) research reactor at the General Electric (GE) Vallecitos Nuclear Center (VNC) has been operated in support of operator training, surveillances, and utilization involving neutron radiography. During the inspection the reactor was operated at full power to conduct neutron radiography.

### 1. Operation Logs and Records

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

To verify that the licensee was operating the reactor and conducting operations in accordance with Technical Specification (TS) Sections 3 and 6.7 and procedural requirements, the inspector reviewed selected portions of the following:

- Nuclear Test Reactor (NTR) Console Log Books, dated from September 28, 2006 - present
- General Electric Nuclear Test Reactor Annual Report No. 47 for the Year 2006, dated March 29, 2007
- Scram Reports, dated from January 1, 2006 - present
- Description and Corrective Action for Scram Report 07-02, dated January 15, 2007
- Vallecitos Technological Safety Council (VTSC) meeting minutes, dated January 25 and April 25, 2007
- Administrative Procedure 9.16 "Record Collection and Retention" Revision 857, effective February 13, 1995
- Standard Operating Procedure 6.1 "Staffing Requirements" Revision 941, dated September 8, 2004
- Standard Operating Procedure 6.3 "Reactor Log Books" Revision 746, dated February 14, 1992
- Standard Operating Procedure 6.4 "Daily Surveillance Check Sheet" Revision 985, dated June 13, 2007
- Standard Operating Procedure 6.6 "Startup - Shutdown Report" Revision 921, dated July 12, 2000
- Standard Operating Procedure 6.7 "Startup Summary" Revision 967, dated September 26, 2006
- Standard Operating Procedure 6.8 "Control Room Data Sheet" Revision 973, dated January 8, 2007
- Standard Operating Procedure 6.9 "Scram/Shutdown Report" Revision 810, dated August 25, 1993
- Standard Operating Procedure 6.10 "Shutdown Summary" Revision 804, dated August 25, 1993

#### b. Observations and Findings

Reactor operations were carried out following written procedures and TS requirements. The NTR Facility Manager (FM) directs all operational activities at

the NTR facility. The inspector verified that reactor operating characteristics, and other TS and procedure required entries, were recorded on the appropriate forms and logs. A review of the forms and logs indicated that TS operational limits had not been exceeded. Operations records confirmed that shift staffing met the minimum requirements for duty personnel. The inspector determined that reactor operations were carried out following written procedures. During review of the operations logs, the inspector noted that there were minimal unintentional scrams. When a scram occurs, the root cause analysis is completed by the Senior Reactor Operator (SRO) on duty before the resumption of operations.

The inspector observed the reactor staff operating the reactor on June 25, 2007, and reviewed the operations logs. The inspector noted that the licensed operator on duty was knowledgeable and competent. Observation of operational activities also confirmed that reactor operations were carried out in accordance with written procedures and TS requirements.

c. Conclusions

Operational activities were consistent with applicable TS and procedural requirements.

**2. Operator Requalification**

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements in 10 CFR Part 55 and the requalification program:

- operator active license status
- operator training and examination records
- operator physical examination records
- reactivity manipulation records
- NTR Console Log Books, dated from September 28, 2006 - present
- NTR Watchstanding Proficiency Log per 10 CFR 55.53(e)
- Memorandum to NTR staff from E. Ehrlich, "NTR Operator Re-qualification Admin & Program Schedule for Year 2006," dated February 6, 2006
- Memorandum to NTR staff from E. Ehrlich, "NTR Operator Re-qualification Admin & Program Schedule for Year 2007," dated January 2, 2007
- Requalification Program for The General Electric Nuclear Test Reactor, dated June 1987
- Administrative Procedure 9.14 "Reactor Operator Requalification Program" Revision 855, dated November 15, 1994
- Written Requalification Examination, dated March 31, 2006
- Requalification Training Records for the January 1, 2006 - December 31, 2007 Requalification Cycle

b. Observations and Findings

Current licensed staff consisted of the FM and three other facility staff members, three of whom are qualified SROs. One staff member was a qualified Reactor Operator (RO). One of the SROs was retired, but worked on an infrequent basis to supplement the full time staff. The former FM was still working at the facility and will soon be retiring but is in the process of transferring facility knowledge to the current FM. The licensee's requalification program is described in the program submitted to the NRC. The inspector reviewed the requalification program records for all of the licensed operators at the facility. The FM is responsible for the implementation of the requalification program and designates a SRO to administer the tests. Records showed that the requirements in the requalification program were being followed.

The inspector verified that physical examinations of the operators were conducted biennially as required. The number of hours in the facility performing licensed duties were recorded on a log sheet to ensure that all operators met the required minimum number of hours operating the reactor. The inspector confirmed that the requalification program was being administered in a manner that sufficiently maintains the effectiveness of all licensed operators.

c. Conclusions

The licensee's requalification program was up-to-date, and plan requirements were met.

**3. Surveillance and Limiting Conditions for Operation**

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the surveillance requirements and limiting conditions for operations (LCO) specified in TS Section 4.0 were met:

- surveillance, calibration, and test data sheets and records
- Standard Operating Procedure 6.4 "Daily Surveillance Check Sheet" Revision 985, dated June 13, 2007
- Standard Operating Procedure 6.5 "Monthly Surveillance Check Sheet" Revision 644, dated November 16, 2006
- Preventive Maintenance Procedure 12.1 "Fine Control Rod Drive" Revision 913, dated June 15, 1998
- Preventive Maintenance Procedure 12.2 "Coarse Control Rod Drives" Revision 914, dated June 15, 1998
- Preventive Maintenance Procedure 12.3 "Safety Rod Drives" Revision 511, dated March 6, 1985
- Completed SOP 6.4 forms, dated from January 2006 to present
- Completed SOP 6.5 forms, dated from January 2006 to present
- Completed PM #1 (PMP 12.1) forms, dated January 5, 2006 and January 2, 2007

- Completed PM #2 (PMP 12.2) forms, dated January 5, 2006 and January 2, 2007
- Completed PM #3 (PMP 12.3) forms, dated January 11, 2006 and January 2, 2007

b. Observations and Findings

The inspector noted that daily, monthly, and annual checks, tests, and/or calibrations for TS-required surveillance items were completed as required. The LCO verifications were completed on schedule and in accordance with licensee procedures. 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 procedures for the surveillances provided clear and concise direction and control of reactor operational tests and surveillances.

c. Conclusions

The licensee's program for completing surveillance inspections satisfied TS and licensee administrative controls.

**4. Emergency Planning**

a. Inspection Scope (IP 69001)

- Training Records for Emergency Support, SCBA Training and Fit Test, and General Emergency Response, dated April 10, 2006 and March 28, 2007
- Emergency Drill Summary and Critique for drills held on December 13, 2005 and December 12, 2006
- Vallecitos Nuclear Center Reactor Facilities Radiological Emergency Plan (E-Plan), revised November 2005, dated October 1981
- Memorandum of Understanding (MOU) between ValleyCare Medical Center, Pleasonton and GE VNC, dated February 18, 2004
- MOU between Alameda County Sheriff's Office and GE VNC, dated March 17, 2004
- Site Emergency Procedure A-5, "Emergency Control Procedure - General," Revision 3 dated December 2005
- Site Emergency Procedure C-5, "Fire Protection Procedure," Revision 3 dated November 2005
- Site Emergency Procedure E-5, "Radiation Emergency Procedure - General," Revision 2 dated November 2005
- Site Emergency Procedure Emergency Preparedness Instruction EPI-2, "Tests, Drills and Exercises," Revision 1 dated August 1995
- Site Emergency Alarm System Annunciator and Announcement Manual, dated June 2007
- Emergency Control Organization Call List, dated June 26, 2007
- Quarterly Phone Testing of Off-Site Emergency Numbers, dated from January 2006 to present

- Completed NS-8400 "RM&D Emergency Locker Supplies" forms for Building 105, dated January 8, 2006 and January 8, 2007

b. Observations and Findings

The E-Plan in use at the NTR was verified to be the same as the version most recently approved by the NRC. The E-Plan was audited and reviewed biennially as required. Emergency Procedures were also reviewed and revised as needed to effectively execute the E-Plan. The inspector verified that a list of emergency personnel, management, and offsite agencies was in the Control Room and in the Emergency Support Center (ESC).

Supplies, instrumentation, and equipment maintained at the facility and at the ESC were being controlled and inventoried as required in the E-Plan and Emergency Procedures. This included inspections and testing of the fire extinguishers at the facility. MOUs with offsite support agencies had been established with the sheriffs department and the local hospital. During review of the MOUs with the offsite support agencies, the inspector noted that the letters had not been renewed within a two year period as specified in the MOU. The licensee committed to immediately resolving the issue and getting a new MOU signed with the offsite support agencies. The inspector communicated to the licensee the need for formal agreements with the offsite support agencies on areas of responsibility. The licensee was informed that failure to renew the MOU with the Alameda County Sheriff's Office and the ValleyCare Medical Center was identified as an Unresolved Item (URI)<sup>1</sup> pending corrective actions and implementation of controls to prevent recurrence. This issue will be reviewed during a future inspection (URI 50- 73/2007-202-01).

The documentation of the emergency drills conducted during the past two years were reviewed. Emergency preparedness and response training was being completed on an annual basis. Through drill scenario and record reviews, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. Emergency drills had been conducted annually as required by the E-Plan. Communications capabilities with support groups were acceptable and had been tested as required. Critiques were written following the drills to document the strengths and weaknesses identified during the exercise. Action items were developed to correct the problems identified.

c. Conclusions

The emergency preparedness program was conducted in accordance with the approved Emergency Plan.

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<sup>1</sup>An Unresolved Item is a matter about which more information is required to determine whether the issue in question is an acceptable item, a deviation, a nonconformance, or a violation.

## 5. Maintenance Logs and Records

### a. Inspection Scope (IP 69001)

To verify that the licensee was complying with the applicable regulations, the inspector reviewed selected aspects of:

- General Electric Nuclear Test Reactor Annual Report No. 47 for the Year 2006, dated March 29, 2007
- Memorandum to All VNC Area Managers from H. Stuart, "Change Authorization Writing and Review Checklist," dated September 9, 1998
- Administrative Procedure 9.3 "Engineering Release" Revision 819, dated February 24, 1994
- Administrative Procedure 9.4 "Change Authorization" Revision 821, dated March 16, 1994
- Administrative Procedure 9.15 "Preventive and Corrective Maintenance Programs" Revision 961, dated August 17, 2006
- Completed SOP 9.15 Exhibit #3 forms, dated from January 2006 to present
- Completed NEO 887 "Engineering Release" forms, dated from January 2006 to present
- Completed VNC 3080 "Change Authorization" forms, dated from January 2006 to present

### b. Observations and Findings

The inspector reviewed the maintenance records related to scheduled and unscheduled preventive and corrective maintenance activities that had occurred during the inspection period. Routine and preventive maintenance was controlled and documented on the maintenance log sheets. These documents indicated that all maintenance activities were controlled and documented in accordance with the requirements in 10 CFR 50.59. All maintenance of reactor systems were reviewed and approved by the FM. Implementation of changes to equipment, systems, tests or experiments are generally done by the staff at the facility. After all maintenance items are completed, system operational checks are performed to ensure the affected systems function before returning them to service. During a facility tour, the inspector noted that the Control Room and Reactor Room equipment was operational.

### c. Conclusions

Maintenance logs, records, and performance satisfied TS and procedure requirements.

## **6. Fuel Handling Logs and Records**

### a. Inspection Scope (IP 69001)

To verify that TS and procedural requirements were being met, the inspector reviewed selected aspects of:

- fuel handling equipment and instrumentation
- fuel movement records

### b. Observations and Findings

There are no currently approved fuel handling procedures at the facility. Fuel inspection is not required by the TS nor is fuel handling routinely performed. The inspector noted that the licensee does not currently have a need for fuel movement operations. The licensee indicated that, when the need for refueling or fuel movement arises, special new procedures will be written, reviewed, and approved for the operation.

### c. Conclusions

The licensee does not have a program for fuel handling at the NTR.

## **7. Exit Meeting**

The inspector presented the inspection results to licensee management at the conclusion of the inspection on June 26, 2007. The inspector discussed the findings for each area reviewed. The licensee acknowledged the findings and did not identify as proprietary any of the material provided to or reviewed by the inspector during the inspection.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

J. Ayala, Specialist, Radiation Monitoring  
C. Bassett, Manager, Facilities and Quality Assurance  
E. Ehrlich, Senior Reactor Operator  
L. Martin, Manager, Regulatory Compliance and EHS  
T. McConnell, Reactor Operations Specialist  
R. Pearson, Radiation Monitoring Technician - Facilities Protection  
T. Peterson, Reactor Operator  
H. Stuart, Specialist, Radiological Engineering  
D. Thomas, Manager, Nuclear Test Reactor  
D. Turner, Manager, Vallecitos Nuclear Center

## INSPECTION PROCEDURES USED

IP 69001 CLASS II NON-POWER REACTORS

## ITEMS OPENED, CLOSED, AND DISCUSSED

### OPENED:

50-73/2007-202-01 URI Failure to renew the Memorandum of Understanding with the Alameda County Sheriff's Office and the ValleyCare Medical Center

### CLOSED:

None

### DISCUSSED:

None

## LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
ESC	Emergency Support Center
FM	Facility Manager
GE	General Electric
IP	Inspection Procedure
kW	kilowatt
LCO	Limiting Conditions for Operations
MOU	Memorandum of Understanding
NRC	Nuclear Regulatory Commission
NTR	Nuclear Test Reactor

RO	Reactor Operator
SRO	Senior Reactor Operator
TS	Technical Specification
URI	Unresolved Item
VNC	Vallecitos Nuclear Center
VTSC	Vallecitos Technological Safety Council