

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-70/82-01 (GETR)
50-73/82-01 (NTR)

Docket No. 50-70 50-73 License No. TR-1 (GETR) R-33 (NTR)

Licensee: General Electric Company

Vallecitos Nuclear Center

Pleasanton, California 94566

Facility Name: General Electric Test Reactor (GETR), Nuclear Test Reactor (NTR)

Inspection at: Vallecitos Nuclear Center

Inspection conducted: June 29-30 and July 1, 1982

Inspectors: H. S. North 7/9/82
H. S. North, Radiation Specialist Date Signed

Approved by: F. A. Wenslawski 7/9/82
F. A. Wenslawski, Chief, Reactor Radiation Protection Section Date Signed

Approved by: H. E. Book 7/9/82
H. E. Book, Chief, Radiological Safety Branch Date Signed

Summary:

Inspection on June 29-30 and July 1, 1982 (Report No. 50-70/82-01 and 50-73/82-01)

Areas Inspected: Routine, unannounced inspection by a regionally based inspector of licensee actions to correct previously identified noncompliance, organization and staffing, radiation protection, environmental protection, emergency preparedness, NTR Technical Specification requirements and independent measurements. The inspection involved 18 inspector hours on-site by one inspector.

Results: In the 7 areas inspected, no items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*W. King, Manager, Nuclear Safety and Quality Assurance
R. Berryman, Nuclear Safety Technician, Dosimetrist
D. Bowden, Senior Engineer, Radiation Monitoring and Dosimetry
G. Cunningham, Senior Licensing Engineer and Environmental Protection
C. Leighty, Manager, NTR
P. Swartz, Manager, Plant Engineering and Maintenance (GETR)
E. Strain, Compliance Engineer, Nuclear Safety and Emergency Planning
P. Webb, Specialist Radiological Training

*Denotes attendance at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (50-70/81-02): Failure to evaluate the possible use of process or engineering controls. The inspector found that applicable procedures had been revised and approved to require evaluation of process or engineering controls prior to the approval of the use of respiratory protective equipment. (81-02-03)

(Closed) Noncompliance (50-70/81-02): Failure to measure airborne radioactive materials prior to specific tasks. The inspector found that applicable procedures had been revised and approved to address the need for a comprehensive air sampling program and to suggest methods for remote sample collection. (81-02-04)

(Closed) Noncompliance (50-70/81-02): Failure to limit use of respirators to those for which the individual has been specifically trained and fitted. The inspector found that applicable procedures had been revised and approved to limit use of respirators to those specifically fitted and for which training had been provided. (81-02-05)

3. Organization and Staffing

The licensee's organization and staffing as it relates to GETR and NTR was examined. NTR, GETR and the Nuclear Safety and Quality Assurance functions report to the Manager, Irradiation Processing Operation (IPO). The Manager and staff of NTR report through the Manager, Advanced Nuclear Operations. The radiation and environmental protection and emergency planning functions report through the Manager, Nuclear Safety and Quality Assurance. A GETR operations organization no longer exists. Twenty-four hours surveillance of the facility is maintained under the direction of the Manager, Plant Engineering and Maintenance reporting through the Manager, Engineering and Support Services. The number of monitors (5), reporting to the Manager, Nuclear Safety has dropped to a level where full time

coverage at GETR is no longer possible. The licensee has provided a 96 hour radiation safety training program based on Radiation Safety Technician Training Course, Moe, et al, ANL-7291 Revision 1, to a total of 12 persons including four GETR Shift Supervisors and two others assigned to GETR and to the radiation monitor staff. The training was a formal course with progress and comprehension evaluated by examinations.

The NTR operations group consists of two licensed operators, including the Manager NTR, and technical support personnel.

No items of noncompliance or deviations were identified.

4. Radiation Protection

During the inspection the inspector verified that current forms NRC-3 and appropriate notices as required by 10 CFR 19 were posted at the NTR and GETR facilities. During tours of the NTR and GETR facilities it was observed that access was controlled, areas were appropriately posted as required by 10 CFR 20.203, that appropriate protective clothing was used and that personnel monitoring devices were used as required.

The licensee uses TLD's supplied by Radiation Detection Company. Personnel exposure records for NTR, GETR and monitoring personnel were examined for the period 1981 through May 31, 1982. Finger rings are used to evaluate extremity exposure on an as needed basis. The highest NTR personnel exposures were 1752 mrem whole body and 2640 mrem extremity for 1981 and 865 mrem whole body and 230 mrem extremity through May 31, 1982.

The highest GETR exposures were 1630 mrem whole body in 1981 and 240 mrem through May 31, 1982. For the same periods the highest monitor exposures were 1265 and 345 mrem, respectively. The inspector examined selected files and verified that the files included a completed, signed form NRC-(AEC) 4. The files of a number of terminated employees from each group were examined. Copies of timely letters required by 10 CFR 19.13(a) were contained in each file which reported exposure to the individual.

Whole body counts using a moving bed, shadow shielded NaI system are performed on a scheduled basis. In addition bioassays for Pu²³⁹, enriched U, natural U and tritium are performed. The frequency for whole body counting and type of bioassays are based on work experience and previous count or analytical results. Selected records were examined and no significant depositions identified.

Routine survey (dose rate and contamination) programs are specified in Nuclear Safety Procedures, 3400 GETR Work Routines and 3550, NTR Work Routines. The procedures address air sampling and specify fixed and removable contamination limits in terms of specific survey instrument response. Available portable survey instruments at NTR and GETR were examined and found to be in calibration.

Surveys at NTR, operating at full power, and at GETR were performed by the inspector using a Keithley, Model 36100, ion chamber instrument (Serial No. 10444, NRC008917, due for calibration October 23, 1982). NTR survey records for the period January 1, 1982 (survey F-001) through June 11, 1982 (survey F-123) were examined. Dose rates reported in the licensee's surveys between March and May 1982 were 4 mr/hr in the control room general area and at the console and 19-20 mr/hr at the reactor cell door in an inaccessible area. The inspector's survey found dose rates of 1.5-1.8 mr/hr at the control room console and up to 19-20 mr/hr at the reactor cell door in the same location as the licensee's surveys.

GETR survey records for the period January 1, 1982 (survey C-01) through February 21, 1982 (survey C-100) were examined and in addition records were sampled for the period June 2, 1982 (survey C-279) through June 27, 1982 (survey C-323). The results of the inspector's survey, which identified dose rates of approximately 2 and 5 mr/hr respectively at the boundary of the corner storage area and the resin pad in the GETR facility yard and 3 mr/hr on the GETR missile shield and up to 20 mr/hr at the edge of the EEHS door, were essentially comparable with the licensee's survey results.

The licensee's records of unusual radiological occurrences since the last inspection were examined. No items of significance were identified.

No items of noncompliance or deviations were identified.

5. Environmental Protection

Paragraph 7 of Inspection Reports 50-70/82-02 (GETR) and 50-73/82-02 (NTR) discuss the methods of effluent monitoring at NTR and GETR. The methods for monitoring airborne effluents remain unchanged.

Records of airborne effluents from NTR for the period January 1 - December 31, 1981 and January 1 - May 31, 1982 were examined. The recorded airborne release from NTR during 1981 and the first five months of 1982 were:

<u>Activity (Units)</u>	<u>1981</u>	<u>1982 (5 months)</u>
Noble Gases (Curies)	192.47	68.6
Iodine (uCi)	71.48	6.74
Beta-Gamma Particulates (uCi)	2.73	0.39
Alpha Particulates (uCi)	0.13	0.04

Based on a continuously operating stack flow rate of 3,000 cfm the releases were significantly less than 1% of the airborne activity release rates specified in Table II of the Technical Specifications.

The recorded airborne releases from GETR during 1981 and the first five months of 1982 were:

<u>Activity (Units)</u>	<u>1981</u>	<u>1982 (5 months)</u>
Noble Gases (Curies)	235.09	78.69
Iodine (uCi)	166.7	42.41
Beta-Gamma Particulates (uCi)	65.5	11.0
Alpha Particulates (uCi)	1.33	0.24

The values reported represent the sum of positive statical variations above background without credit for negative statical variations. The reported releases were substantially below one percent of the limits specified in the GETR Technical Specifications TABLE I GETR Stack Limits.

The licensee conducts an extensive radiological environmental sampling and analysis program including environmental TLDs, surface and ground water, airbornes, and vegetation as well as certain nonradiological samples. The licensee's report of the environmental program, Effluent Monitoring and Environmental Surveillance Programs - Annual Summary-1981 Vallecitos Nuclear Center, was examined. No significant radiological impact was identified.

No items of noncompliance or deviations were identified.

6. Emergency Preparedness

The licensee's emergency planning and preparedness were last examined and reported in paragraph 9 of IE Inspection Report Nos. 50-70/81-02 (GETR), 50-73/81-02 (NTR) and paragraph 8 of 70-754/81-01. The licensee confirmed that the previously described plan was still in effect although changes are being prepared. The inspector verified that the previously described agreements for off site fire protection assistance, law enforcement, hospital and ambulance service and on site medical support are still in effect.

As a result of a continued loss of personnel not all the positions described in the emergency plan can be filled by single individuals and some persons are required to assume added responsibilities. The recent loss of the Safety and Fire Protection Specialist (Site Fire Marshall) may cause the loss of availability of the on-site fire truck since a qualified instructor in its use is no longer available. The duties of this individual have been partially assumed by the Supervisor Facilities Maintenance.

The licensee noted that since all on site structures are now sprinklered, fire response will be limited to incipient fires and interior structural fires will be fought by fire units responding from offsite. Regular criticality and fire drills are conducted.

The emergency kits identified in previous inspection reports are maintained at various locations on site. The criticality and fire alarm panel formerly only located at GETR has been extended to a repeater panel at the site security office.

No items of noncompliance or deviations were identified.

7. NTR Technical Specification (T.S.) Requirements

Licensee records including Daily Operational Check Sheets, Monthly Operational Check Sheets and Control Room Data Sheets were examined and NTR operation was discussed with the Manager NTR to verify that the licensee had satisfied the following T.S. requirements: T.S. 2.1, 2.2, 7.2, 9.1.4, 9.3.1(f), 9.3.2, 9.3.3, 9.6, 10.3, 10.4, 10.5 and 10.6.

No items of noncompliance or deviations were identified.

8. Exit Interview

At the conclusion of the inspection the results of the inspection were discussed with the individual denoted in paragraph 1. The licensee was informed that no items of noncompliance or deviations had been identified.