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U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-73/80-02

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

Licensee: General Electric Company
Vallecitos Nuclear Center
Pleasanton, California 94566

Facility Name: Nuclear Test Reactor (NTR)

Inspection at: Vallecitos Nuclear Center

Inspection conducted: April 21 and 22, 1980

Inspectors: G. B. Zwetzig, Reactor Inspector — June 3, 1980 Date Signed

Date Signed

Date Signed

Approved By: B. H. Faulkenberry, Chief, Reactor Projects Section 2 — June 3, 1980 Date Signed
Reactor Operations and Nuclear Support Branch

Summary:

Inspection on April 21 and 22, 1980 (Report No. 50-73/80-02)

Areas Inspected: A routine, unannounced inspection of facility organization, logs and records; review and audit functions; operator requalification training; facility procedures, surveillance, and experiments; and followup on licensee reported events. The inspection involved 15 inspector-hours onsite by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

RV Form 219 (2)

DETAILS

1. Persons Contacted

*E. Strain, Engineer, GETR and NTR Compliance
W. King. Manager, Nuclear Safety Technology
*C. Leighty, Manager, Nuclear Test Reactor
*B. Johnson, Operations Supervisor, Nuclear Test Reactor
*D. Gilliland, Manager, Reactor Irradiations

*Denotes those attending the exit interview.

2. Organization, Logs and Records

The inspector determined by discussions and review of the annual report that the facility operating organization was consistent with technical specifications. In addition, on the basis of the observations made during the inspection it appeared that the minimum staffing required by the technical specifications was being met or exceeded.

The inspector examined the control room operator's logs for the period from March 30 to December 29, 1979 and made the following observations:

(1) On April 24, 1979 there was a notation in the log to the effect that the reactor was placed on a slight negative period during the lunch period. When the inspector inquired as to the meaning of this notation, he was told this was done on infrequent occasions when non-work activities were performed in the control room during lunch hour.

(2) On June 13, 1979 there was a notation indicating that maintenance performed the preceding operating day was determined to be defective during the performance of startup checks. The notation also indicated that the problem had arisen because unmarked electrical leads had been reversed.

These observations were discussed with licensee representatives when noted and at the exit interview (see Paragraph 9).

The inspector examined the maintenance log (preventive maintenance cards) and the corrective maintenance log on a sampling basis for the 1979 calendar year but did not identify any significant problem areas.

The inspector also examined the control console log N and primary coolant flow strip chart records for the period from January 21 to 31, 1980 (the first Livermore, California earthquake was on January 24, 1980). No significant problem areas were identified with respect to either meeting regulatory requirements or response to the earthquake.

The inspector also examined the following maintenance procedures and reviewed the results of the maintenance performed on the indicated dates:

Procedure 12.3, Safety Rod Drive (4/30/80)
Procedure 12.23, Picoammeters (4/7/80)
Procedure 12.22.2, High Voltage Power Supply No. 2 (4/7/80)
Procedure 12.12, Primary Flow Transmitter (1/30/80)

On the basis of this review the inspector did not identify any problems in the first three procedures listed. In the fourth procedure, the inspector noted that the data points selected for calibration of the transmitter did not correspond with those specified in the procedure. Although it did not appear that this lack of conformance would affect the validity of the calibration, it did indicate a procedural problem that should be corrected. The inspector brought this to the attention of the licensee representative who agreed to look into the matter.

No items of noncompliance or deviations were identified.

3. Review and Audit

The inspector determined that the review and audit function for this facility is performed by an independent safeguards group as permitted by the technical specifications. The inspector also reviewed the charter of this organization (set forth in VNC Safety Standard No. 1.2, Rev. 2) and discussed the qualifications of the members of the group (Nuclear Safety Technology) with the manager of the group. On the basis of this review and discussion the inspector concluded that the charter and membership of the group were in conformance with the technical specification requirements appropriate to this type of organization.

The inspector verifed that the nine facility changes reported by the licensee in the Facility Annual Report for calendar year 1979 had been properly reviewed and approved as required by regulatory requirements.

The inspector also performed a review of the specific change involving modification of a primary water flow orifice (CA-133). This change involved four separate sub-procedures involving modification, installation, calibration and evaluation of results. Because the basic orifice plate was a standard vendor catalog item, no specific drawing of the part was available. Accordingly, a revision of the drawing could not be made, but a copy of the change authorization was inserted in the Primary Water System file folder.

The inspector verified that audits had been performed by the designated safeguards group. During 1979 these included audits of the Operator Requalification Program, the Change Authorization Procedure, SNM and By-Product Material, and Criticality. Needed corrective action identified by the audits had been or was being implemented.

No items of noncompliance or deviations were identified.

4. Licensed Operator Requalification Program

The inspector examined the records related to the licensed reactor operator requalification program. These records included copies of the examinations administered and the answers given by each operator, records of reactor manipulations, operator evaluation records and lecture schedules. In performing this examination the inspector noted that separate documentation (i.e. other than the console operating log) was not maintained for reactivity manipulations during 1979 but was being maintained during 1980. This change in procedure therefore corrects what would otherwise be a concern.

No items of noncompliance or deviations were identified.

5. Reactor Procedures

The inspector reviewed facility procedure 9.25, "Standard Operating Procedures" and verified that methods for changing procedures and the approval required were clearly established and appeared to conform with technical specifications requirements.

The inspector also reviewed Procedure 6.2, "Startup Summary" and performed a walk-through of the procedure. Based on this review and walk-through the inspector concluded that the procedure was technically adequate, satisfied technical specification requirements and could accomplish its intended purpose.

The inspector also verifed on a sampling basis that the procedures provided for use by the operators at the console were the latest revisions and that they had been reviewed and approved in accordance with the applicable requirements.

No items of noncompliance or deviations were identified.

6. Reactor Surveillance

The inspector reviewed the procedures for performing surveillance on the manual, seismic and low coolant flow scram circuits and for measuring the inflight time of the safety rods. Based on the review, the procedures appeared to be technically adequate and appropriate to the as-built condition of the facility.

The inspector selected two limiting conditions for operation which do not have an established surveillance frequency stated in the technical specification and inquired as to how the licensee was assured that these limits were met. With respect to maintaining the core tank full of water (TS 3.2) the licensee's representative stated that a water level alarm was provided and that this was checked monthly. Regarding limiting excess reactivity available through rod movement, the licensee's representative described how this was verified during the daily startup check.

The inspector also reviewed on a sampling basis surveillance records (Daily Operational Check Sheets, Shutdown/Restart Sheets and Control Room Data Sheets) for 1979 to verify that surveillance was performed as required by the technical specifications. Specific surveillances reviewed included: linear high power trip setpoints (3 channels), log N trip setpoint, manual trip, and short reactor period trip setpoint. Based on this review it appeared that surveillances were being performed as required.

No items of noncompliance or deviations were identified.

7. Reactor Experiments

The inspector selected two experimental procedures for review: Procedure 10.5, "Neutrography of Explosives" and Procedure 10.10, "Small Sample Activation". The review examined whether the experiments had received the required approvals, had been reviewed to determine that they did not represent an unreviewed safety question, potential hazards had been identified, reactivity effects had been considered as appropriate, and whether radiation protection measures were specified as appropriate. Based on this review the inspector concluded that these procedures satisfied regulatory requirements.

No items of noncompliance or deviations were identified.

8. Review of Nonroutine Event Reported by the Licensee

By letter dated January 11, 1980, the licensee reported that while testing Safety Rod No. 3, the separation switch for this rod did not open as required when the rod was scrammed. The separation switch is intended to cause all safety rods to scram if any one rod becomes separated from its electromagnet. (This is merely a backup to the normal scram action which was unaffected by the malfunction). Upon investigating the malfunction, the licensee determined that it was caused primarily by misalignment of the switch, with the misalignment partially caused by the fact that the offending switch and one other were slightly different that the switches performing this function on two other safety rods. As corrective action, the licensee replaced the misaligned switch and the other switch of that type with the preferred type which were on the other two safety rods, added lock washers to the switch brackets and stated he would revise the maintenance procedure to require quarterly checks of switch alignment. The inspector examined the safety rod drive units and the new separation switches and concluded that the licensee's corrective action was acceptable.

No items of noncompliance or deviations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on April 22, 1980. The inspector summarized the scope and findings of the inspection. Specific items emphasized by the inspector during the exit interview were:

(1) The inadvisability of the conduc of nonwork-related activities in the control room while the reactor was operating, and

(2) A possible trend indicating deterioration in the quality of instrumentation maintenance as evidenced by the observation in Paragraph 2, above, and other minor incidental observations by the inspector.

The licensee representative indicated that both of these matters would receive management attention. (Note: On April 30, 1980, the inspector received a copy of a procedure change which became effective two days following the exit interview. This procedure change clearly prohibited non-work related activities from the control room and other specified NTR work areas).