

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-228/94-01

Docket No. 50-228

License No. R-98

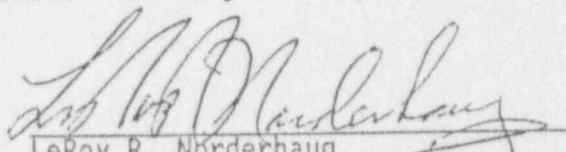
Licensee: Aerotest Operations, Inc.
3455 Fostoria Way
San Ramon, California 94583

Facility Name: Aerotest Radiography and Research Reactor

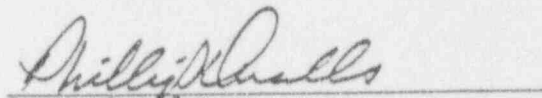
Inspection at: San Ramon, California

Inspection Conducted: January 3 - 11, 1994.

Inspectors:

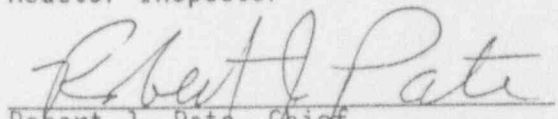

LeRoy R. Norderhaug
Senior Material Control Analyst

1/19/94
Date Signed


P. M. Qualls
Reactor Inspector

1/20/94
Date Signed

Approved by:


Robert J. Pate, Chief
Safeguards, Emergency Preparedness
and Non-Power Reactor Branch

1/21/94
Date Signed

Summary:

Inspection on January 3 - 11, 1994 (Report No. 50-228/94-01)

Areas Inspected: This special, announced inspection of the operation of the Aerotest Radiography and Research reactor included: organization, management review and audit, experiments, reactor operator requalification training, environmental monitoring program, operating procedures, radiation protection activities, transportation activities, emergency preparedness program and drills, a tour of the facilities and discussions of relevant Information Notices and Generic Letters. Inspection procedures 30703, 40750, and 86740 were used.

Results: In the areas inspected, the licensee's programs appeared fully capable of meeting their safety objectives. No violations or deviations were identified.

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DETAILS

1. Persons Contacted

- * R. Tsukimura, General Manager
- * S. Warren, Radiation Safety Officer (RSO)
- * A. Meren, Reactor Supervisor
- T. Wisse, Senior Reactor Operator

(*) Denotes those individuals present at the exit interview.

In addition to the individuals identified above, the inspectors met and held discussions with other members of the licensee's staff.

2. Class II Research and Test Reactor Operations (40750)

The licensee's reactor operations program was reviewed for compliance with the requirements of 10 CFR Parts 19, 20, 50 and 55; including Technical Specifications and licensee procedures. The inspection included a review of reactor operating records, tours of the licensee's facility and the review of selected procedures.

The licensee's performance in this area appeared to be fully capable of meeting its safety objectives.

a. Reactor Operations

Information Notice (IN-93-57): Software Problems Involving Digital Control Console Systems at Non-Power Reactors, dated July 23, 1993, was issued to alert addressees to software problems involving digital control console systems at two non-power reactors. The inspectors determined that the information notice had been received and reviewed by the licensee's staff, with no followup actions identified. This item is considered closed.

A review of licensee records and discussions with staff members established that no new experiments have been performed. Reactor operations have been limited to neutron radiography and sample irradiations.

b. Organization

The licensee's organization is generally as specified in Section 12 of the Technical Specifications with adequate numbers of licensed Senior Reactor Operators to maintain the technical coverage required.

c. Operations and Maintenance Records

A review of reactor operating logs such as startup and shutdown check lists and maintenance records for the period of January through December, 1993, was conducted. The reactor operating logs, check lists and maintenance logs were adequately filled out

and were consistent with facility operating procedures and the Technical Specifications. The inspectors concluded that reactor operations met the conditions prescribed in the Technical Specifications.

Preventative maintenance activities had been factored into the facilities operating procedures. The inspectors concluded that the licensee was implementing an effective maintenance program.

d. Procedures

The inspection disclosed that the licensee maintains and follows reactor operating procedures as described in the Technical Specifications. The inspectors reviewed the licensee's operating procedures. The inspectors noted that the procedures are routinely reviewed annually and whenever changes occur that may require revisions.

e. Changes

Discussions with the Reactor Supervisor and the review of reactor operating records for the period of January to December, 1993, disclosed that no changes were made to the facility or procedures that would require a safety evaluation pursuant to 10 CFR Part 50.59. A modification to the shielding for the demineralizer system had received proper review.

f. Experiments

Information Notice (IN-93-86): Identification of Isotopes in the Production and Shipment of Byproduct Material at Non-Power Reactors, dated October 29, 1993, was issued to alert addressees to a problem with the identification of isotopes in byproduct material produced and shipped at a non-power reactor. The inspectors determined that the information notice had been received and reviewed by the licensee's staff, with no followup actions identified. This item is considered closed.

The inspectors verified that no new experiments were conducted since the last inspection. No discrepancies were identified.

g. Surveillance

Records for the surveillance program prescribed in the Technical Specifications were examined. All surveillance procedures were performed at the frequencies specified in the Technical Specifications. The inspectors reviewed completed check off sheets for the period: January through December, 1993. No deficiencies were identified.

h. Review and Audit

Reactor Safeguards Committee (RSC) minutes for the period of January through December, 1993, were reviewed.

The review and discussions disclosed that members of the committee were conducting routine audits of the facilities activities. The audits were broad in scope and were designed to assure that the activities were performed in accordance with the Technical Specifications. None of the audit findings appeared to represent a significant safety finding. Audit findings were effectively corrected in a timely manner. The inspectors concluded that the licensee's review and audit program met or exceeded the requirements for RSC oversight prescribed in Section 12 of the Technical Specifications.

i. Reactor Operator Requalification Program

The licensee's implementation of the NRC-approved Reactor Operators requalification program was examined.

Records of each Reactor Operator (RO) and Senior Reactor Operator (SRO) examination are maintained by the Reactor Supervisor. These records are routinely reviewed by members of the Reactor Safeguards Committee for compliance with the licensee's approved SRO/RO requalification program.

Annual written examinations that were administered since the previous inspection were reviewed. The inspectors concluded that the records that were reviewed in this subject area demonstrated that the SRO/RO requalification program was consistent with 10 CFR Part 55 and the licensee's approved program.

j. Radiation Protection Program

The licensee's radiation protection program for assuring compliance with 10 CFR Parts 19 and 20 and the Technical Specifications was examined.

Records involving personnel dosimetry, contamination surveys, radiation measurements and measurement of airborne concentrations obtained at the reactor facility since the previous inspection were reviewed.

The inspectors noted that posting and labeling practices were consistent with 10 CFR Part 19.11 and 20.203 and radiation measurements were consistent with the requirements of 10 CFR Part 20.201. Licensee records continue to indicate that radiation levels at the reactor facility are low and that contamination levels and airborne concentrations are essentially undetectable.

Personnel exposure records were reviewed for calendar year 1992 and the first ten months of calendar year 1993. The maximum individual exposure for 1992 was 4.43 rem and the maximum dose received by an individual in the first ten months of calendar year 1993 was 2.49 rem. The licensee has made several modifications to decrease the personal dose in accordance with ALARA practices including the use of faster film to minimize the neutron activation in the film cassettes. However, since the licensee has had to reduce the staffing, there are fewer persons to "share" the exposure inherent to the process and individual doses remain relatively high.

Anomalous neutron exposure values were recorded for the east and south perimeter fences (230 and 170 mrem, respectively) for the 1993 calendar quarter ending September 30, 1993. The plant area historically having the highest neutron exposure is the "n-ray" room which had only 160 mrem for that quarter.

Previous recorded exposures have been zero for both fence monitors since December 31, 1991 (with the exception of 30 mrem exposure reported for the east fence for the quarter ending March 31, 1992). The remaining fence line monitors (north and west) have consistently detected no neutron exposure over the last 8 quarters.

No operational or design changes which could have caused the higher than normal values were noted. The license believes the exposure values to be erroneous and is treating them as "suspect" pending further evaluation upon receipt of the December 1993 (fourth quarter) values. The licensee agreed to verbally notify Region V of the results of their evaluation (expected to be available within 30 to 45 days).

The inspectors conducted a survey of the reactor room and outside areas and found no discrepancies with licensee surveys.

Portable radiation measurement instruments and pocket ionization chambers used by the reactor facility were observed to be in current calibration.

The licensee's radiation protection program was determined to be capable of protecting the health and safety of the reactor staff and the public. The licensee is currently in the process of converting their administrative limits and exposure records to be consistent with 10 CFR Part 20 as revised and effective January 1, 1994.

k. Emergency Preparedness Program

The licensee's capability for responding to emergencies as specified in their NRC approved Emergency Plan and for demonstrating compliance with 10 CFR Part 50.54 was examined.

Based on the review of records and discussions with licensee staff, the inspectors noted that the licensee appeared to have an adequate program. Training drills and exercises appeared to have been properly performed. The inspectors also noted that required emergency response equipment was available and properly maintained. No additional concerns were identified in this area.

1. Facility Tour

The inspectors toured the licensee's facility. Posting and labeling were found to be consistent with 10 CFR Part 19.11 and 20.203 requirements.

All fixed and portable radiation monitoring instruments were in current calibration and the reactor facility housekeeping, significantly impacted by a recent consolidation of activities, was considered to be adequate.

m. Annual Reports

The licensee's annual report covering the period of July 1, 1992, through June 30, 1993, was reviewed. The report summarized plant operations, changes, tests, experiments, surveillance and maintenance activities. The information was found to be consistent with the inspectors' observations discussed in this report. No errors or anomalies were identified.

3. Transportation of Radioactive Materials (86740)

The licensee's program for assuring compliance with applicable Department of Transportation (49 CFR Parts 171 through 178) and 10 CFR Parts 20 (paragraphs 205 and 311), 61 and 71 requirements associated with the packaging and shipment of radioactive materials was reviewed.

Discussions with the licensee's staff and the review of records disclosed that transfer and/or shipment of radioactive materials from the reactor facility are made under the authority of the licensee's State of California radioactive material license. No violations, deviations or other concerns were identified in this area.

The licensee seemed to be maintaining their previous level of performance in this area and their program appeared capable of accomplishing its safety objectives.

4. Exit Interview

The inspectors met with the individuals denoted in paragraph 1 at the conclusion of the inspection on January 11, 1994. The scope and findings of the inspection were summarized. The licensee was informed that no violations or deviations were identified. The inspectors concluded that the facility was being operated in a safe and conservative manner.