

September 14, 2001

Mr. Ray Tsukimura, President
Aerotest Operations, Inc.
3455 Fostoria Way
San Ramon, CA 94583

SUBJECT: NRC INSPECTION REPORT NO. 50-228/2001-201

Dear Mr. Tsukimura:

This refers to the inspection conducted on August 20-23, 2001, at your Aerotest Radiography and Research Reactor facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Various aspects of your safety program were inspected including selective examinations of procedures and representative records, interviews with personnel, and observation of activities in progress. Based on the results of this inspection, no safety concern or noncompliance to NRC requirements was identified. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/NRC/ADAMS/index.html>.

Should you have any questions concerning this inspection, please contact Craig Bassett at (404) 562-4712.

Sincerely,

/RA/

Patrick M. Madden, Chief
Non-Power Reactors and Financial Section
Operational Experience and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-228
License No. R-98

Enclosure: NRC Inspection Report

cc w/encl: Please see next page

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Aerotest Operations, Inc.

Docket No. 50-228

cc:

Mr. Fred Meren, President
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3455 Fostoria Way
San Ramon, CA 94583

Director
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Radiological Health Branch
State Department of Health Services
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Sacramento, CA 94234-7320

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Reactor Newsletter
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University of Florida
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California Department of Health
ATTN: Chief, Environmental
Radiation Control Unit
Radiologic Health Section
714 P Street, Room 498
Sacramento, CA 95814

U.S. NUCLEAR REGULATORY COMMISSION

Docket No: 50-228

License No: R-98

Report No: 50-228/2001-201

Licensee: Aerotest Operations, Inc.

Facility: Aerotest Radiography and Research Reactor (ARRR)

Location: 3455 Fostoria Way
San Ramon, CA 94583

Dates: August 20-23, 2001

Inspector: C. H. Bassett

Approved by: Patrick M. Madden, Chief
Non-Power Reactors and Financial Section
Operational Experience and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

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: the operations program, the organizational structure and functions program, the design control program, the review and audit program, the operator requalification program, the maintenance program, the surveillance program, the fuel handling program, the experimental program, the procedural control program, and the emergency preparedness program.

Conduct of Operations

- The staffing and organization met requirements specified in Technical Specifications (TS) Sections 10.1 and 12.1.
- Review and oversight functions required by TS Section 12.4 were acceptably completed by the Reactor Safeguards Committee (RSC).
- No changes had been made at the facility since the last NRC inspection.
- Operator requalification was conducted as required by the Operator Requalification Program. Medical examinations were being completed as required.
- Facility procedures were acceptable and satisfied TS and administrative procedure requirements for being revised by the licensee and reviewed and approved by the RSC.
- Fuel movements and inspections were completed and documented in accordance with the requirements specified by procedure.
- The program for surveillance verifications and calibrations was being implemented in accordance with TS requirements.
- Reactor operations and maintenance were being completed as required.
- The program for the control of experiments satisfied regulatory and TS Section 6.7 requirements.

Emergency Preparedness

- The current Emergency Plan used at the facility was dated October 1982. Implementing Procedures were being updated as needed and implemented the provisions of the Emergency Plan acceptably.
- Emergency response facilities and equipment were being maintained as required and responders were knowledgeable of proper actions to take in case of an emergency.

- The Memorandum of Understanding with the local hospital was being maintained and updated as required.
- Semiannual evacuation drills were being conducted as required by the Emergency Plan.
- Emergency preparedness training for staff personnel and familiarization tours for offsite responders were being completed as required.

REPORT DETAILS

Summary of Plant Status

The licensee's TRIGA-conversion research reactor continues to be operated in support of laboratory experiments, reactor operator training, and neutron radiography. During the inspection, the reactor was being started up and operated several hours per day at approximately one hundred and fifty kilowatts (150 kW) to complete neutron radiography operations. The maximum authorized power level is 250 kW but the licensee reduced the typical operating power level to 180 kW and then again to 150 kW in an effort to reduce personnel radiation exposures. This has produced positive results in that the annual personal exposure of some personnel has been decreased by as much as one rem.

1. ORGANIZATION AND STAFFING

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

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Technical Specifications (TS) Sections 10.0 and 12.1 were being met:

- the organizational structure
- management responsibilities
- staffing for safe operation of the ARRR

b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities and the organization at the facility had not changed since the previous NRC inspection in September 2000 (Inspection Report No. 50-228/2000-201). The inspector concluded that the Reactor Supervisor retained direct control and overall responsibility for management of the facility as specified in the TS. The Reactor Supervisor continued to report to the President, Aerotest Operations, Inc. (AO).

Through review of records and logs and discussions with licensee personnel, the inspector determined that the current staffing at the facility was acceptable to support the work and ongoing activities and met the requirements of the TS.

It was also noted that AO continues to be a wholly-owned subsidiary of OEA Aerospace, Inc. OEA, Inc. is a wholly-owned subsidiary of Autoliv ASP, Inc, which in turn is a wholly-owned subsidiary of Autoliv, Inc., a Delaware Corporation.

c. Conclusions

The licensee's organization and staffing remain in compliance with the requirements specified in the Technical Specifications.

2. REVIEW AND AUDIT FUNCTIONS

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in the requirements of TS Section 12.3 were being completed:

- selected ARRR Procedures
- Reactor Safeguards Committee (RSC) meeting minutes
- Duties specified for the RSC by the TS

The inspector also toured the licensee's facility to note any changes or modifications that may have been made since the last inspection.

b. Observations and Findings

The inspector reviewed the RSC's meeting minutes from August 1999 to the time of the inspection. These meeting minutes showed that the RSC had met annually as required and had considered the types of topics outlined by the TS. The meetings were typically attended by all members of the committee.

The inspector verified that committee personnel had completed audits of the reactor facility operations and programs as outlined in the TS. The inspector determined that the audits and the resulting findings were detailed and that the licensee took corrective actions as needed.

The inspector toured the control room, sample preparation area, and various support areas at the facility. No changes from the previously submitted facility descriptions were noted.

c. Conclusions

Audits were being conducted by the RSC according to the requirements specified in the Technical Specifications.

3. DESIGN CHANGE FUNCTIONS

a. Inspection Scope (IP 69001)

In order to verify that any modifications to the facility were consistent with 10 CFR 50.59 and TS Section 6.2, the inspector reviewed:

- Reactor Safety Committee meeting minutes
- completed audits
- reviews of changes made under 10 CFR 50.59

b. Observations and Findings

Through review of applicable records and interviews with licensee personnel, the inspector determined that no changes had been initiated and/or completed at the facility since the last NRC operations inspection. It was noted TS and procedural requirements were in place to ensure that changes, if proposed, would be reviewed by the RSC as required.

c. Conclusions

No changes had been made at the facility since the last NRC inspection.

4. OPERATOR REQUALIFICATION

a. Inspection Scope (IP 69001)

To verify compliance with the Requalification Program, the inspector reviewed:

- the Operator Requalification Program (July 13, 2000, revision)
- status of operator licenses
- operator examination records
- operator physical examination records
- selected ARRR Operation Log Sheets

b. Observations and Findings

The Operator Requalification Program was being maintained up to date. Operator licenses were also current. Records showed that operators were given a biennial requalification examination as required and annual operations tests were conducted. Logs indicated that operators maintained active duty status as required by operating the reactor the required number of hours quarterly and by taking the annual operating examinations. There are currently four Senior Reactor Operators (SROs) employed at the facility.

The inspector also noted that one employee, currently working as the electronics engineer, is in training to become a Reactor Operator (RO). The licensee is also seeking another experienced person to replace a Senior Reactor Operator who resigned recently.

The inspector verified that physical examinations of the operators were conducted biennially as required.

c. Conclusions

Operator requalification was conducted as required by the Operator Requalification Program.

5. PROCEDURES

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the requirements of TS Section 12.2 were being met concerning written procedures:

- selected ARRR procedures
- procedure revision, review, and approval process

b. Observations and Findings

The inspector noted that procedures had been developed for reactor operations and safety. The inspector verified that designated members of the RSC had completed reviews of the procedures as required.

It was also noted that revisions to procedures were presented as needed by the licensee to the RSC for review and approval.

c. Conclusions

Facility procedures were acceptable and satisfied TS and administrative procedure requirements for being revised by the licensee and reviewed and approved by the RSC.

6. FUEL HANDLING

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify that fuel movement and handling was being conducted as required by TS Sections 5.1.1 and 11.0:

- Critical Assembly and Power Calibration Procedures
- fuel handling equipment and reactor instrumentation
- applicable fuel movement logs and data sheets

b. Observations and Findings

The inspector determined that the licensee was maintaining the required records of the various fuel movements that had been completed and verified that the movements were conducted in compliance with procedure. Although reactor fuel was not required to be inspected, the licensee continues to inspect 20 percent (20%) of the fuel elements annually in order to remain cognizant of the physical status of the fuel. The procedures used were acceptable and the various controls specified for these operations were adequate.

c. Conclusions

Fuel movements and inspections were completed and documented in accordance with the requirements specified by procedure.

7. SURVEILLANCEa. Inspection Scope (IP 69001)

To determine that surveillance activities and calibrations were being completed as required by TS Sections 4, 5, 6, and 10, the inspector reviewed:

- Maintenance procedures (including surveillance and calibration information)
- surveillance, calibration, and test data sheets
- ARRR Operation Log Sheets and related records

b. Observations and Findings

Surveillance and test verifications and calibrations were completed on schedule and in accordance with licensee procedures. All the recorded results were within the associated TS requirement and procedurally prescribed parameters or adjustments were made to the equipment as needed. The records and logs reviewed were complete and were being maintained acceptably. Checks, tests, and calibrations were completed as required by TS.

c. Conclusions

The program for surveillance verifications and calibrations satisfied Technical Specification requirements.

8. OPERATIONS AND MAINTENANCEa. Inspection Scope (IP 69001)

The inspector reviewed selected portions and/or aspects of:

- ARRR Operation Log Sheets and related records
- staffing for reactor operations
- reactor startup, operations, and shutdown activities
- maintenance procedures and records
- Operations Request Forms

b. Observations and Findings

The operating logs were clear and provided an acceptable indication of operational activities. Supplemental records documented events that occurred and measures that had been taken to resolve or track the events. Logs and records also showed that operational conditions and parameters were consistent with license and TS

requirements. Observation of actual operational activities further confirmed that these conditions and requirements were satisfied.

The maintenance logs and records indicated that problems were addressed and preventive maintenance operations completed as required by procedure. Records showed that routine maintenance activities were conducted at the required frequency and in accordance with the TS and/or the applicable procedure. Maintenance activities ensured that equipment remained consistent with the Safety Analysis Report and TS requirements. Further, maintenance activities were consistent with the requirements of 10 CFR 50.59.

c. Conclusions

Reactor operations and maintenance were being completed in accordance with Technical Specification and procedural requirements.

9. EXPERIMENTS

a. Inspection Scope (IP 69001)

To ensure that the requirements of TS Section 8.0 were being met concerning experimental programs, the inspector reviewed selected aspects and/or portions of:

- experimental program requirements
- Experiment Review and Approval Procedures, logs, and records
- experimental administrative controls and precautions

b. Observations and Findings

The experiments conducted at the facility were routine types of experiments that have been in place for several years. No new experiments have been initiated, reviewed, or approved since the last inspection. If any experiments were to be initiated, they would be reviewed and approved by the RSC and would be completed under the supervision of the Reactor Supervisor and in accordance with TS requirements (e.g., reactivity limitations, explosive material restrictions, etc.). The results of the experiments were documented in appropriate logs or records.

c. Conclusions

The program for conducting experiments satisfied Technical Specification and procedural requirements.

10. EMERGENCY PREPAREDNESS

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of:

- the Emergency Plan and implementing procedures
- emergency response facilities, supplies, and instrumentation
- training and emergency drill records
- offsite support

b. Observations and Findings

The Emergency Plan (E-Plan) in use at the facility was the same as the version most recently approved by the NRC and was dated October 14, 1982. The E-Plan was audited and reviewed biennially as required. Implementing procedures were reviewed and revised as needed to implement the E-Plan effectively.

In reviewing the E-Plan, the inspector noted that Section VII.A.2 indicated that an alternate Emergency Support Center had been established and was available in the PG&E Offices at 3400 Crow Canyon Road in San Ramon, CA. When the inspector requested to visit this support center, the licensee stated that the facility was no longer needed nor maintained. The inspector indicated that the E-Plan needed to be revised and updated to reflect this situation. The licensee was informed that revision of the E-Plan to reflect the current situation concerning an Emergency Support Center would be followed by the NRC as an Inspector Follow-up Item (IFI) and would be reviewed during a future inspection (IFI 50-228/2001-201-01).

Through records review and through interviews with licensee personnel, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. Emergency response facilities and equipment were being maintained as required. A Memorandum of Understanding with a hospital in nearby Pleasanton, CA, to treat potential victims of a radiological event, had been updated and maintained as necessary. Communications capabilities were acceptable with the support groups. Off-site support organizations visited the facility periodically and were familiar with the facility and what would be required during a response.

Emergency preparedness and response training for staff personnel was being completed annually as required. Evacuation drills had been conducted twice a year as required by the E-Plan. The licensee was again encouraged to conduct more challenging drills in order to test communications procedures and check on the response of facility personnel to a simulated radiological or industrial hazards problem.

c. Conclusions

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

11. FOLLOW-UP ON PREVIOUS OPEN ITEMS

a. Inspection Scope (IP 69001)

The inspector reviewed the actions taken by the licensee following identification of Open Items during a previous inspection.

b. Observations and Findings

- (1) IFI - 50-228/99-201-02 - Follow-up on the licensee's efforts to ensure that the requirements of the Operator Requalification Program are consistent concerning training of operators if they receive less than a specific score on the annual written examinations.

NRC Inspection Report No. 50-228/99-201, dated September 2, 1999, outlined the situation. During this inspection, the inspector reviewed the actions taken by the licensee to change the Operator Requalification Program to make the requirements consistent throughout the entire document. The inspector reviewed the revised program and verified that the actions had been completed. These changes were documented in the licensee's letter to the NRC dated July 13, 2000. The actions were determined to be acceptable. This item is considered closed.

- (2) Unresolved Item (URI) URI - 50-228/2000-201-01 - Follow-up on concerns regarding transfer of license and foreign ownership.

The inspector discussed the issue of the apparent indirect or ultimate transfer of the license which occurred when the ownership of the Aerotest Radiography and Research Reactor (ARRR) was transferred in substantial part to Autoliv, Inc., through an indirect transfer. This issue is still being reviewed by both the licensee and the NRC. This item remains open.

c. Conclusions

Acceptable actions were taken by the licensee regarding the previously identified situation involving the Operator Requalification Plan and this issue is considered closed. The issue involving the potential foreign ownership of AO is still being reviewed.

12. EXIT INTERVIEW

The inspection scope and results were summarized on August 23, 2001, with members of licensee management. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. Although proprietary information was reviewed during the inspection no such material is included in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Bauman, Nuclear Engineer and Senior Reactor Operator
K. Kumar, Electronics Engineer
A. Meren, Reactor Supervisor and Manager, Neutron Radiography
R. Tsukimura, President and Chief Executive Officer, Aerotest Operations, Inc.
S. Warren, Radiological Safety Officer and Manager, Quality Assurance

Other Personnel

M. Dakin, Hazardous Materials Division Coordinator, San Ramon Valley Fire Protection District
D. Jones, Fire Code Compliance Officer, San Ramon Valley Fire Protection District

INSPECTION PROCEDURE USED

IP 69001: Class II Non-Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-228/2001-201-01	IFI	Follow-up on revision of the E-Plan to reflect the fact that an alternate Emergency Support Center is no longer needed nor available at the PG&E Offices.
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Closed

50-228/99-201-01	IFI	Follow-up on the licensee's efforts to ensure that the requirements of the Operator Requalification Program are consistent concerning training of operators if they receive less than a specific score on the annual written examinations.
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Discussed

50-228/2000-201-01	URI	Follow-up on concerns regarding transfer of license and foreign ownership of Aerotest Operations, Inc.
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LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
AO	Aerotest Operations, Inc.
ARRR	Aerotest Radiography and Research Reactor
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
IFI	Inspector Follow-up Item
kW	kilowatt
NRC	Nuclear Regulatory Commission
OEA	OEA Aerospace, Inc.
RO	Reactor Operator
RSC	Reactor Safeguards Committee
SRO	Senior Reactor Operator
TS	Technical Specification
URI	Unresolved Item