

September 14, 2011

Ms. Sandra Warren, General Manager  
Aerotest Operations, Inc.  
3455 Fostoria Way  
San Ramon, CA 94583

SUBJECT: AEROTEST OPERATIONS, INC. – NRC ROUTINE INSPECTION REPORT  
NO. 50-228/2011-201

Dear Ms. Warren:

On August 15-17, 2011, the U.S. Nuclear Regulatory Commission (NRC, the Commission) completed an inspection at your Aerotest Radiography and Research Reactor facility (Inspection Report No. 50-228/2011-201). The enclosed report documents the inspection results which were discussed on August 17, 2011, with you and other members of your staff.

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. No response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, and requests for withholding", a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Craig Bassett at (301) 466-4495 or by electronic mail at [Craig.Bassett@nrc.gov](mailto:Craig.Bassett@nrc.gov).

Sincerely,

**/JNguyen for RA/**

Johnny H. Eads, Jr., Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

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

Enclosure: NRC Inspection Report No. 50-228/2011-201  
cc w/encl: See next page

Aerotest Operations, Inc.

Docket No. 50-228

cc w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No: 50-228

License No: R-98

Report No: 50-228/2011-201

Licensee: Aerotest Operations, Inc.

Facility: Aerotest Radiography and Research Reactor

Location: 3455 Fostoria Way  
San Ramon, CA 94583

Dates: August 15-17, 2011

Inspector: Craig Bassett

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

## EXECUTIVE SUMMARY

Aerotest Operations, Inc.  
Aerotest Radiography and Research Reactor  
Report No: 50-228/2011-201

The primary focus of this routine, announced inspection was the on-site review of selected aspects of the Aerotest Operations, Inc. (the licensee's) Class II research and test reactor safety program including: 1) organization and staffing, 2) review and audit and design change functions, 3) reactor operations, 4) procedures, 5) operator requalification, 6) maintenance and surveillance, 7) fuel handling, 8) experiments, and 9) emergency preparedness since the last U.S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's actions taken in response to the NRC Confirmatory Action Letter issued on February 26, 2011, were also reviewed. The licensee's program was acceptably directed toward the protection of public health and safety and in compliance with NRC requirements. No violations or deviations were identified.

### Organization and Staffing

- The licensee's organization and staffing were in compliance with the requirements specified in Section 12 of the facility Technical Specifications.
- All salaried personnel had been laid off since the previous routine inspection; five salaried personnel remained.

### Review and Audit Functions and Design Control

- Review and oversight functions required by Technical Specifications Section 12.1.3 were acceptably completed by the Reactor Safeguards Committee.
- No changes had been made at the facility since the last NRC inspection but a process for design change was in place and would be followed if changes were initiated.

### Reactor Operations

- Reactor operations in 2009 and 2010 were conducted in accordance with Technical Specification requirements and applicable procedures.

### Procedures

- Facility procedures were acceptable and were being revised by the licensee and reviewed and approved by the Reactor Safeguards Committee as required by Technical Specifications and administrative procedures.

### Operator Requalification

- Operator requalification was being conducted and completed as required by the Operator Requalification Program.

- Medical examinations were being completed as required.

#### Maintenance and Surveillance

- Maintenance was being completed in accordance with Technical Specifications and procedural requirements.
- The program for completing surveillance checks, tests, verifications, and calibrations was being implemented in accordance with Technical Specifications requirements.

#### Fuel Handling

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

#### Experiments

- The program for the control of experiments satisfied regulatory, procedural, and Technical Specifications Section 6.7 requirements.
- No experiments or irradiations have been conducted since October 15, 2010.

#### Emergency Preparedness

- The current facility Emergency Plan was being reviewed biennially as required and updated as needed.
- Emergency response equipment was being maintained and alarms were being tested monthly as required.
- The Letter of Agreement with the local hospital was being verified annually as required.
- Evacuation drills were being conducted twice each year as required by the Emergency Plan.
- Emergency preparedness training for staff personnel was being completed as required.

#### Compliance with the Confirmatory Action Letter

- The licensee was in compliance with the NRC's Confirmatory Action Letter dated February 26, 2011.

## REPORT DETAILS

### Summary of Plant Status

Aerotest Operations, Inc. (Aerotest, the licensee's) 250 kilowatt (kW) TRIGA conversion research reactor, known as the Aerotest Radiography and Research Reactor (ARRR) had been operated in the past in support of neutron radiography experiments and reactor operator training. However, the licensee had voluntarily ceased to operate the research reactor on October 15, 2010, because of foreign ownership issues. During this inspection, the reactor was not started up or operated.

### 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 10.1 and 12.1 were being met:

- Current staffing of the ARRR
- Management responsibilities and organizational structure indicated in Section 12 of the TS, as implemented through the latest revision to the Facility License Number (No.) 98, Amendment No. 4, dated January 28, 1981
- Section II of the ARRR Procedures Manual entitled, "Operating Procedures," Procedure Change Notice (PCN) No. 2, RSC approval dated June 28, 1990
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2009, to June 30, 2010, issued July 15, 2010
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2010, to June 30, 2011, issued July 28, 2011

#### b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that management responsibilities at the facility had not changed since the previous routine NRC inspection in May 2010 (NRC Inspection Report No. 50-228/2010-201). The inspector noted that the General Manager was the local official in charge of day-to-day activities at the facility. The Reactor Supervisor (who was also assigned the duties of the Reactor Operations Manager) retained direct control over, and overall responsibility for, management of the reactor as specified in the TS. The General Manager and the Reactor Supervisor reported to the President, Aerotest Operations, Inc.

Through review of records and discussions with licensee personnel, the inspector determined that the current staffing at the facility had been cut due to the failure

of the parent company to sell Aerotest and continue operations. This resulted in a problem with foreign ownership of the facility. All of the hourly personnel had been laid off and only five salaried personnel remained. The current staffing at the ARRR consisted of the General Manager (who was also the Security Officer, the Radiation Safety Officer, and a Senior Reactor Operator), the Reactor Supervisor (who was also the Manager of Reactor Operations and a Senior Reactor Operator), a Nuclear Engineer (who was also a Senior Reactor Operator), the Manager of Nuclear Radiography, and the Manager of Quality Assurance. The salaried employees were monitoring the facility and conducting maintenance and surveillance duties as required by the TS.

c. Conclusion

The licensee's organization was as specified in the TS. All hourly personnel had been laid off and only salaried personnel remained at the facility.

**2. Review and Audit and Design Change Functions**

a. Inspection Scope (IP 69001)

In order to ensure that the audits and reviews stipulated in the requirements of TS Section 12.1.3 were being completed and to verify that any modifications to the facility were consistent with 10 CFR 50.59, the inspector reviewed the following:

- Completed audits for 2009, 2010, and 2011
- Changes made under the licensee's 10 CFR 50.59 change process
- Reactor Safeguards Committee meeting minutes for 2009 and 2010
- Duties of the Reactor Safeguards Committee detailed in TS Section 12
- Charter of the Reactor Safeguards Committee outlined in Section I of the ARRR Procedures Manual entitled, "Administrative Procedures," PCN No. 2, RSC approval dated June 28, 1990
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2009, to June 30, 2010, issued July 15, 2010
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2010, to June 30, 2011, issued July 28, 2011

b. Observations and Findings

(1) Review and Audits Functions

The Reactor Safeguards Committee (RSC) met at least once per year in accordance with TS requirements with the last two meetings held on November 13, 2009, and on November 23, 2010. The inspector reviewed the RSC's meeting minutes for these meetings. The meeting minutes showed that the RSC had considered the types of topics stipulated by the TS. It was noted that the meetings were attended by all members of the committee. Review of the minutes also indicated that the committee

provided guidance and direction to ensure suitable oversight of reactor operations.

The inspector verified that the periodic audits specified by TS Section 12.1.3 were being completed as required. The RSC minutes and audit records indicated that the Chair of the RSC and another RSC member conducted unannounced audits of facility operations annually and submitted the results to the President, Aerotest Operations, Inc. The inspector noted that there were no significant issues discovered and that the licensee took appropriate corrective actions in response to those audit findings or recommendations that were noted.

(2) Design Control Functions

Through review of applicable records and interviews with licensee personnel, the inspector determined that some design changes had been considered at the facility but that none had actually been initiated or completed since the last NRC operations inspection. It was noted that TS and procedural requirements were in place to ensure that changes, if proposed, would be reviewed by the RSC and in accordance with 10 CFR 50.59 as required.

c. Conclusion

Review and oversight functions required by TS Section 12.1.3 were acceptably completed by the RSC. No changes had been made at the facility since the last NRC inspection but a process for design change was in place and would be followed if changes were initiated.

**3. Operations**

a. Inspection Scope (IP 69001)

The inspector reviewed selected portions and/or aspects of the following to ensure compliance with TS Sections 10 and 12:

- Staffing for routine reactor operations during 2009 through October 2010
- Selected ARRR Operational Log Sheets for 2009, 2010, and to date in 2011
- Selected ARRR Startup/Shutdown Sheets for operations in 2009 through October 2010
- Operations Request Forms for selected scrams in 2009, 2010 and to date in 2011
- Section II of the ARRR Procedures Manual entitled, "Operating Procedures," PCN No. 2, RSC approval dated June 28, 1990
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2009, to June 30, 2010, issued July 15, 2010

- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2010, to June 30, 2011, issued July 28, 2011

b. Observations and Findings

The inspector reviewed selected ARRR Startup/Shutdown Sheets and Operational Log Sheets for reactor operations dating from May 2009 through October 2010, and for TS required maintenance and other checks and calibrations through the date of this inspection.

The inspector determined that reactor operations were carried out following written procedures as required by TS Section 12.2.1.1. Reactor Safety System scrams were identified in the log as “automatic scrams”, and were reported and resolved as required before the resumption of operations under the authorization of a Senior Reactor Operator (SRO). Logs and records also showed that operational conditions and parameters were consistent with license and TS requirements and that TS operational limits had not been exceeded. Since October 2010, the reactor has not been operated but Startup/Shutdown sheets have been completed to log the completion of various activities including quarterly maintenance, control rod calibration, excess reactivity and loss to power checks, and thermal power calibration.

The operating logs appeared to be complete and provided an acceptable indication of operational (and non-operations) activities. The Annual Summaries of Changes, Tests, and Experiments (the licensee’s annual reports to the NRC) documented the abnormal events that had occurred during the year. For any unresolved scrams, i.e., when the cause had not been determined, an Operations Request Form (ORF) was completed to document the measures that were taken to resolve or track the events. ORFs were also used to provide documentation and the resolution of various reactor-related issues, such as emerging maintenance required on TS required instruments.

c. Conclusions

Reactor operations were conducted in accordance with TS requirements and applicable procedures.

**4. 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:

- Various ARRR procedures
- Procedure Approval Sheets
- Procedure Change Notice forms
- ARRR procedure review sign-off forms

- Section I of the ARRR Procedures Manual entitled, "Administrative Procedures," PCN No. 2, RSC approval dated June 28, 1990, which detailed the process used to review, revise, and approve all facility procedures
- Section II of the ARRR Procedures Manual entitled, "Operating Procedures," PCN No. 2, RSC approval dated June 28, 1990
- Section IV of the ARRR Procedures Manual entitled, "Critical Assembly and Power Calibration Procedures," PCN No. 7, RSC approval dated November 2, 2005
- Section VII of the ARRR Procedures Manual entitled, "Experiment and Approval," PCN No. 2, RSC approval dated June 28, 1990

b. Observations and Findings

The inspector noted that procedures had been developed for reactor operations and safety as required by the TS. The licensee's procedures were found to be acceptable even though no operations were currently in progress. The inspector noted that the administrative procedure specified the responsibilities of the RSC. The inspector verified that a designated member of the RSC had completed biennial reviews of the facility procedures as required. It was noted that the last review of all procedures had occurred on May 16, 2011. The licensee verified that any substantive revisions to procedures would be presented to the RSC for review and approval as required by TS. The inspector verified that the latest revisions to various procedures had been through this review and approval process as required.

c. Conclusion

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

**5. Operator Requalification Program**

a. Inspection Scope (IP 69001)

To verify compliance with the Operator Requalification Program for the ARRR, which was submitted to the NRC on July 13, 2000, the inspector reviewed:

- Status of all qualified operators' licenses
- Operator physical examination records for 2008 and 2010
- Selected ARRR Operational Log Sheets documenting reactivity manipulations for 2009 and 2010
- SRO Licensed Activities Log documenting active operator supervisory and related functions for 2011
- 2010 Senior Reactor Operator Biennial Written Examinations and related records
- 2009 and 2010 Senior Reactor Operator Annual Operating test results and related records

b. Observations and Findings

There were three people who maintained an SRO license at the facility. The inspector verified that the SROs' licenses were current. Records showed that operators were given biennial requalification examinations and annual operations tests as required. Logs indicated that operators maintained active duty status as required by operating the reactor the required number of hours quarterly and completing the required number of reactivity manipulations (prior to October 2010) or by completing supervisory and related licensed operator duties. The Operator Requalification Program was being maintained up to date. The inspector also verified that the operators were reviewing the contents of all abnormal and emergency procedures on a regularly scheduled basis as indicated by a sign off sheet located in the emergency procedures folder.

The inspector further verified that each operator had received a biennial physical examination as required.

c. Conclusion

Operator requalification was being conducted and completed as required by the Operator Requalification Program. Medical examinations for each operator were being completed biennially as required.

**6. Maintenance and Surveillance**

a. Inspection Scope (IP 69001)

To determine that maintenance and surveillance activities were being completed as required by TS Sections 3, 4, 5, 6, and 7, the inspector reviewed:

- ARRR Repair Folders for various instruments
- Reactor Period Data Sheets for the past two years
- Operations Request Forms for 2009, 2010, and to date in 2011
- Monthly Alarm Check Lists for 2009, 2010, and to date in 2011
- ARRR Pool Water Analysis sheets for 2009, 2010, and to date in 2011
- Quarterly Maintenance Check Lists for 2009, 2010, and to date in 2011
- Control Rod Calibration - Rod Drop Data Sheets (Graphic Version)
- Selected ARRR Startup/Shutdown Sheets for 2009, 2010, and to date in 2011
- Section IV of the ARRR Procedures Manual entitled, "Critical Assembly and Power Calibration," PCN No. 7, RSC approval dated November 2, 2005
- Section VIII of the ARRR Procedures Manual entitled, "Maintenance Procedures," PCN No. 2, RSC approval dated January 14, 1993

b. Observations and Findings

- (1) Maintenance

The various Repair Folders and Operations Request Forms maintained by the licensee indicated that emergent problems were addressed by appropriate corrective maintenance as needed. If electrical components for the nuclear instrumentation were replaced, the maintenance procedures required that calibrations and voltage checks occur prior to the instrumentation being placed back into service. The inspector verified that these tests were completed as required. 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.

(2) Surveillance

The inspector verified that, prior to October 2010, daily, monthly, quarterly, semiannual, and annual surveillance tests, checks, verifications, and calibrations were completed on schedule and in accordance with licensee procedures and TS requirements. All of the recorded results for the surveillance checks reviewed by the inspector were within the associated TS and/or procedurally prescribed parameters. The records and logs reviewed were accurate, complete, and being maintained as required.

After October 2010, the licensee continued to complete the monthly, quarterly, semiannual, and annual test and calibrations as required. It was noted that the licensee had developed a checklist to ensure that appropriate oversight was maintained over various other items. These included such things as pool water temperature, air filter changeout, water conductivity, and cycling the pumps. These items were checked on a daily or weekly basis even though this was not required because the reactor was shut down and not operating.

c. Conclusion

Maintenance was being completed in accordance with TS and procedural requirements. The program for surveillance checks, tests, verifications, and calibrations was being implemented in accordance with TS requirements.

**7. 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 Section 5.1.1 and Section 11:

- Fuel movement and examination records
- Fuel handling equipment and reactor instrumentation
- Various records and data sheets related to fuel movement
- Selected ARRR Operational Log Sheets for 2009 and 2010

- Data Sheets for Fuel and Graphite Transfer forms for 2009 and 2010
- Letter from NRC to Licensee, Aerotest Radiography and Research Reactor (ARRR) Fuel Examination, letter dated July 29, 1992
- Section IV of the ARRR Procedures Manual entitled, "Critical Assembly and Power Calibration," PCN No. 7, RSC approval dated November 2, 2005

b. Observations and Findings

As documented in the letter noted above, the licensee had made a commitment to the NRC to inspect twenty percent (20%) of the fuel elements in the core each year. The inspector verified that the licensee continued to conduct these fuel inspections.

Based on the results of past fuel inspections, the licensee noted that several fuel elements had been deformed such that they were "stuck" in the reactor core, making them difficult to remove. As a result of the fuel "sticking" problem, in January 2006 the licensee decided to remove all fuel possible from the core and conduct an inspection of all the fuel elements. Those elements that could be removed were placed in storage. The licensee then used a movable camera and monitor set-up to conduct an inspection of those elements that were "stuck" in place. After that was completed, an inspection of all the remaining elements was also completed and the elements were returned to their original positions in the core. No new or unusual problems were identified during that inspection.

During this inspection, the inspector verified that the fuel movements were conducted in compliance with procedure and pre-planned fuel moves. It was noted that the licensee was documenting the various movements that had been completed and maintaining the required records. Although reactor fuel was not required to be inspected, the licensee typically inspected 20 percent (20%) of the fuel elements annually in order to remain cognizant of the physical status of the fuel.

Fuel inspection was last completed on November 30, 2010. When compared to the results of previous fuel inspections, the licensee noted that the fuel element in core position F-27 had a serial number (S/N) of 11651, the serial number of a stainless steel element. The records indicated that an aluminum fuel element with S/N 598E should be located in position F-27. After reviewing and investigating the issue, the licensee determined that the person who moved the fuel elements during the fuel inspection on January 4, 2011, and the person who was checking the fuel movements had mistaken positions F-27 and F-28 for F-28 and F-29 respectively. Consequently the elements were incorrectly listed as occupying the positions F-27 and F-28. This problem was immediately rectified and the corrected positions and S/N's were entered on the fuel movement sheets and on the Fuel Map located on the wall in the Control Room.

c. Conclusion

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

**8. Experiments**

a. Inspection Scope (IP 69001)

To ensure that the requirements of TS Sections 8 and 9 were being met concerning experimental programs, the inspector reviewed selected aspects and/or portions of:

- Experiment Sheets and Production Log Sheets
- Experimental administrative controls and precautions
- Aerotest Experiment Type Review forms (previously designated as AGNIR Operation Request Forms) documenting experiments approved by the RSC
- Section VII of the ARRR Procedures Manual entitled, "Experiment Review and Approval," PCN No. 2, RSC approval dated June 28, 1990, stipulating experimental program requirement
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2009, to June 30, 2010, issued July 15, 2010
- Annual Summary of Changes, Tests, and Experiments at Aerotest Radiography and Research Reactor (ARRR) for the period from July 1, 2010, to June 30, 2011, issued July 28, 2011

b. Observations and Findings

There were six basic types of experiments that had been approved to be conducted at the ARRR facility. These included: 1) No. 114 - neutron radiography performed in the radiography facilities, 2) No. 116 - activation analysis of hydrocarbon samples, 3) No. 117 - neutron activation of iodine and silver, 4) No. 120 - irradiation of plastic slides impregnated with microscopic quantities of fissionable materials, 5) No. 123 - irradiation of fission detectors, and 6) No. 124 - irradiation of solid state electronic components. However, the inspector verified that the only type of experiment that had been conducted at the facility in 2009 and 2010 was neutron radiography (N-Ray). The typical N-Ray experiment consisted of radiographing various components such as explosive devices for different uses including the space shuttle fuel tank separation system, fighter jet ejection systems, and automobile air bag initiating devices.

All N-Ray experiments were routine in nature and had been conducted for many years. The results of the experiments were documented in the appropriate logs or records. Based on records review, observations of the facility, and radiation surveys, the inspector verified that no experiments had been conducted since October 2010.

c. Conclusion

The program for the control of experiments satisfied regulatory, procedural, and TS Section 6.7 requirements.

**9. Emergency Preparedness**

a. Inspection Scope (IP 69001)

To verify compliance with the facility Emergency Plan, the inspector reviewed selected aspects of:

- Emergency response facilities, supplies, and instrumentation
- Quarterly Maintenance Check Lists for 2009, 2010, and to date in 2011
- Emergency drill records for 2009, 2010, and to date in 2011 documented in the Monthly Alarm Check Lists
- Emergency response training for 2009, 2010, and to date in 2011 documented in the Training Log
- Offsite support as indicated in the current Letter of Agreement with the ValleyCare Health System
- Emergency Plan implementing procedures, Section III of the ARRR Procedures Manual entitled, "General Emergency Procedures," PCN No. 4, last revised January 28, 2005
- Emergency response requirements stipulated in ANSI/ANS 15.16 – 1982 (R1988), "Emergency Planning for Research Reactors"

b. Observations and Findings

The Emergency Plan for the Aerotest Radiography and Research Reactor in use at the facility was the same as the version most recently approved by the NRC with the last revision dated January 14, 2005. The inspector verified that the Emergency Plan (E-Plan) was audited and reviewed biennially as required. The licensee's General Emergency Procedures were being reviewed annually by all licensed operators and revised as needed to implement the Plan effectively.

Through records review and through interviews with staff personnel, emergency responders were determined to be knowledgeable of the proper actions to take in case of an emergency. Emergency response equipment was being maintained and calibrated and alarms were being tested at the frequency stipulated in the E-Plan. Communications capabilities with the various offsite support groups were acceptable. The Notification List was maintained up to date by the alarm contractor, Denalect, and verified by the licensee.

The inspector verified that 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 inspector reviewed the Letter of Agreement (LOA) that had been signed with the ValleyCare Health System which operated a hospital in nearby Pleasanton,

CA. The LOA stated that the hospital would treat potential victims of a radiological event if such were to occur at the ARRR facility. The inspector verified that the hospital had been contacted recently and an updated LOA was being signed to verify that the agreement remained in effect. The Fire Department was also being contacted annually to review emergency interface requirements as required. It was noted that Fire Department personnel had visited the facility on December 15, 2010, and were given a tour.

c. Conclusion

The inspector concluded that the emergency preparedness program was conducted in accordance with the Emergency Plan because: 1) the Emergency Plan and procedures were being reviewed as required and updated as needed, 2) emergency response equipment was being maintained and alarms were being tested monthly as required, 3) the Letter of Agreement with the local hospital was in the process of being signed, 4) evacuation drills were being conducted twice a year as required, and 5) emergency preparedness training for staff personnel was being completed as required.

**10. Compliance with Confirmatory Action Letter**

a. Inspection Scope (Inspection Procedure [IP] 92703)

To verify the compliance with actions specified in the Confirmatory Action Letter (CAL) issued by the NRC to Aerotest Operations, Inc., the inspector reviewed:

- Letter from Licensee to NRC, Status of the Operations at the ARRR, letter dated January 7, 2011
- Letter from NRC to Licensee, Confirmatory Action Letter for Aerotest Operations, Inc., Aerotest Radiography and Research Reactor, CAL No. NRR-2011-001, letter dated February 26, 2011
- Letter from Licensee to NRC, First Response to NRC Letter of February 26, 2011, letter dated March 23, 2011
- Letter from NRC to Licensee, Aerotest Operations, Inc. - Response to Aerotest Re: Confirmatory Action Letter No. NRR-2011-001, letter dated May 24, 2011
- Letter from Licensee to NRC, Response to NRC Letter of May 24, 2011, letter dated June 14, 2011
- Letter from Licensee to NRC, Response to NRC Letters of February 26, 2011 and May 24, 2011, letter dated June 28, 2011
- Letter from Licensee to NRC, Third Response to NRC Letters of February 26, 2011 and May 24, 2011, letter dated July 12, 2011
- Letter from Licensee to NRC, Fourth Response to NRC Letters of February 26, 2011 and May 24, 2011, letter dated July 26, 2011
- Letter from Licensee to NRC, Fifth Response to NRC Letters of February 26, 2011 and May 24, 2011, letter dated August 9, 2011

The inspector also conducted a tour and accompanied the Radiation Safety Officer who conducted a radiation survey inside and outside of the protected and secured area at the facility.

b. Observations and Findings

Because of the 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., the issue of foreign ownership of the facility has been under review by both the licensee and the NRC for several years.

During a previous inspection it was noted that a pathway to a resolution had supposedly been established. In January 2004 Autoliv, Inc. submitted a letter to the NRC outlining a proposal for a divestiture plan for the ARRR. However, no buyer was available at that time. Subsequently Autoliv proposed a partial divestiture plan under which Autoliv would attempt to identify an appropriate person or entity for the transfer of between 1% and 5% of the ownership of Aerotest. In conjunction with the partial divestiture, Autoliv also proposed a negation plan.

In February 2004 the NRC acknowledged the divestiture plan and negation plan. The NRC reiterated that the process for divestiture was required to follow the provisions of 10 CFR 50.80. Those provisions would require the submission of an application for transfer of control of the license with the appropriate information. The process also required NRC approval before transfer of any ownership interest in the facility. At that point, Aerotest was also asked to send the NRC written updates of progress on the outlined divestiture plan every 60 days. Autoliv sent a letter to the NRC which indicated their intent to follow the divestiture plan and that they continued to meet the provisions of the negation plan developed in 2004. Autoliv also proposed to send written updates on the progress of the divestiture plan on a semiannual basis. This was found to be acceptable by the NRC.

Because Autoliv's attempts at partial or full divestiture and implementation of a negation plan continued to be unsuccessful, the NRC and the licensee held various telephone conferences and issued various letters. Aerotest Operations, Inc. submitted a letter to the NRC dated January 7, 2011 that contained a description of the then current status of the operations at the Aerotest Radiography and Research Reactor (ARRR) owned by Aerotest. The letter indicated that:

- 1) Reactor operations at the ARRR had ceased as of October 15, 2010, except for testing, sampling, and fuel observation necessary to comply with the reactor license. The operations could include annual fuel inspections, power calibrations, and quarterly excess reactivity checks. No research or commercial N-Ray work would be conducted at the ARRR. However, Aerotest would continue to pursue the divestiture of the facility

- and, depending on the outcome of those efforts, Aerotest might undertake the steps necessary to resume research and commercial work.
- 2) As of the date of the letter, the staffing at the ARRR consisted of the General Manager, a Reactor Supervisor, a Nuclear Engineer, the Manager of Nuclear Radiography, and the Manager of Quality Assurance. Aerotest committed to maintain the staffing level at the facility in accordance with the requirements of the TS.
  - 3) A Decommissioning Plan would be developed and a decommissioning contractor was to be selected in January 2011. It was expected that the preparation of a Decommission Plan would take from 180 to 270 days. Site characterization activities were to begin shortly after a contractor was selected. Aerotest would also develop a decommissioning funding plan in accordance with 10 CFR 50.82(b)(3).
  - 4) Aerotest was to develop a plan to manage and provide funding for the management of the fuel on site contingent upon the outcome of any divestiture. Aerotest was to file an application with the NRC for a possession only license amendment by March 31, 2011, unless ongoing divestiture discussions were ongoing.
  - 5) At the time the letter was written, Aerotest was in confidential discussions with two parties potentially interested in the acquisition of the facility. Aerotest was to provide written updates to the NRC each 14 days on the progress of the divestiture efforts.

The NRC acknowledged the licensee's letter and issued a Confirmatory Action Letter (CAL) dated February 26, 2011. The CAL basically reiterated what the Aerotest had agreed to do indicating that the licensee had taken or would take various actions with regard to: 1) ceasing operations, 2) requesting a possession only license, 3) maintaining staffing, 4) preparing a decommissioning plan and planning for fuel disposition, and 5) obtaining necessary regulatory approvals prior to resuming research or commercial neutron radiography work. The CAL also required that the licensee submit a report every 14 days updating the status of divestiture efforts.

The inspector reviewed the current status of licensee's actions as stipulated in the CAL. The inspector verified that ARRR operations had ceased on October 15, 2010, except for specified activities such as testing, sampling, and fuel observations such as annual fuel inspections, power calibrations, and quarterly excess reactivity checks. These TS required activities continued to be completed in a timely manner as stipulated. No research or N-Ray had been conducted since October 2010. The current staffing level at the facility was in accordance with the TS requirements and consisted of those individuals indicated in the licensee's January 7, 2011 letter. A decommissioning contractor had been selected and site characterization activities were in progress. A decommissioning plan was being developed but had not been finalized to date. Aerotest was developing a plan to manage and provide funding for the management of the fuel. An application for a possession only license amendment was not submitted to the NRC by March 31, 2011, because divestiture discussions were still ongoing with one entity. Aerotest has provided written updates to the NRC every 14 days discussing the progress of divestiture efforts as required.

c. Conclusion

The licensee was completing those actions possible as described in their response to the CAL and had provided the NRC with 14-day updates on the progress of their divestiture efforts.

**11. Follow-up on Previously Identified Item**

a. Inspection Scope (IP 92701)

The inspector reviewed the licensee's actions taken in response to a previously identified Inspector Follow-up Item.

b. Observation and Findings

Inspector Follow-up Item (IFI) - 50-228/2007-201-01 - Follow-up on the completion of the Autoliv, Inc. divestiture and negation plans involving Aerotest Operations, Inc.

During an inspection in 2007, the inspector discussed the issue of the apparent indirect or ultimate transfer of the license. This had 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 had been under review by both the licensee and the NRC for several years. During the inspection it was noted that the pathway to a resolution had apparently been established. The resolution of this issue never materialized and has been the subject of continuing discussions between the licensee and the NRC.

During this inspection, it was noted that the NRC had issued a CAL to address this issue and that it has yet to be totally resolved (see Paragraph 10 above). This issue remains open.

c. Conclusion

One IFI remains open.

**12. Exit Meeting Summary**

The inspector reviewed the inspection results with members of licensee management at the conclusion of the inspection on August 17, 2011. The licensee acknowledged the findings presented 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 Personnel

C. Bauman	Nuclear Engineer and Senior Reactor Operator
F. Meren	Reactor Supervisor and Reactor Operations Manager
T. Richey	Neutron Radiography Manager
S. Warren	General Manager and Radiological Safety Officer
M. Wilkinson	Quality Assurance Manager

## **INSPECTION PROCEDURE USED**

IP 69001	Class II Non-Power Reactors
IP 92701	Review of Previously Identified Items
IP 92703	Follow-up on Confirmatory Action Letters

## **ITEMS OPENED, CLOSED, AND DISCUSSED**

### Opened

None

### Closed

None

### Discussed

50-228/2007-201-01	IFI	Follow-up on the completion of the Autoliv, Inc. divestiture and negotiation plans involving 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
LOA	Letter of Agreement
N-Ray	neutron radiography
NRC	Nuclear Regulatory Commission
OEA	OEA Aerospace, Inc.
ORF	Operations Request Form
PCN	Procedure Change Notice
RSC	Reactor Safeguards Committee
SRO	Senior Reactor Operator
SRV	San Ramon Valley
TS	Technical Specification