


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of: AEROTEST OPERATIONS, INC. (Aerotest Radiography and Research Reactor)	
	ASLBP #: 14-931-01-LT-BD01
	Docket #: 05000228
	Exhibit #: NRC-032-00-BD01
	Admitted: 8/12/2014
	Rejected: Other:
Identified: 8/12/2014 Withdrawn: Stricken:	

NRC-032
Submitted: June 13, 2014

August 14, 2012

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

SUBJECT: AEROTEST OPERATIONS, INC. – NRC NON-ROUTINE INSPECTION
 REPORT NO. 50-228/2012-204

Dear Ms. Warren:

On July 16 - 23, 2012, the U.S. Nuclear Regulatory Commission (NRC or the Commission) completed an inspection at your Aerotest Radiography and Research Reactor facility (Inspection Report No. 50-228/2012-204). The enclosed report documents the inspection results which were discussed on July 23, 2012, 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 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.

Sincerely,

/JNguyen for RA/

Gregory T. Bowman, 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. 50-228/2012-204
 cc w/encl: See next page

Aerotest Operations, Inc.

Docket No. 50-228

cc w/encl:

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Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

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cc w/encl: See next page

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DATE	7/26/2012	7/31/2012	8/14/2012

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

Docket No: 50-228

License No: R-98

Report No: 50-228/2012-204

Licensee: Aerotest Operations, Inc.

Facility: Aerotest Radiography and Research Reactor

Location: 3455 Fostoria Way
San Ramon, CA 94583

Dates: July 16-23, 2012

Inspector: Craig Bassett

Approved by: Gregory T. Bowman, 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: 50-228/2012-204

The primary focus of this non-routine, announced inspection was the onsite review of selected aspects of the Aerotest Operations, Inc. (the licensee's) 250 Kilowatt (kW) Class II research reactor safety program including: 1) fuel handling and inspection including defueling activities, 2) radiation protection, 3) conformance to the Security Plan, and 4) Design Change Functions. The licensee's program was acceptably directed toward the protection of public health and safety, and in compliance with the U.S. Nuclear Regulatory Commission (NRC) requirements.

Fuel Handling and Defueling

- Once various obstacles were overcome, the fuel and graphite elements were removed from the core.
- Fuel movements and inspections were completed and documented in accordance with the requirements specified by procedure.
- Following inspection of all the fuel elements, 21 aluminum clad elements were noted to have cracks in them.
- One unresolved item was noted regarding the licensee's method of fuel element serial number verification.

Radiation Protection Program

- Surveys and associated checks were completed and documented acceptably to permit evaluation of the radiological conditions present in the facility.
- Notices and postings at the facility met the regulatory requirements.
- Personnel dosimetry was being worn and doses were within the regulatory limits.
- Radiation monitoring equipment was maintained and calibrated as required.
- Training was provided as required covering the topics outlined in Title 10 of the *Code of Federal Regulations* Section 19.12.

Conformance to the Security Plan Requirements

- Security facilities, equipment, and procedures satisfied the Physical Security Plan requirements.

Design Change Functions

- A change is being considered in the method of attaching the upper grid plate to the core support structure which will need to be reviewed and approved.

REPORT DETAILS

Summary of Plant Status

Aerotest Operations, Inc. (Aerotest or the licensee) had ceased to operate their TRIGA Conversion research reactor on October 15, 2010. Prior to that time the reactor had been operated for neutron radiography, to complete surveillance requirements, and for reactor operator training. During this inspection, the reactor remained shut down and all of the fuel and graphite elements were removed from the core and placed in storage racks. All the fuel elements were inspected for damage to the cladding.

1. Background Information

During December 5-12, 2011, the licensee attempted to complete an inspection of all the fuel to comply with their commitment to the NRC of inspecting all the fuel elements every five years. As in previous inspections, those elements that could be removed were placed in storage along the side of the reactor tank, in storage baskets on the floor of the pool, or in storage holes in the thermal column. After those elements were removed, the licensee found that there were 27 aluminum (Al) elements and 11 graphite elements that could not be removed from the core. (One of the stainless steel (SS) elements and one of the graphite elements were left in the core because they could not be removed due to their respective locations.)

The licensee then used their underwater video camera to conduct an inspection of those elements that could not be removed. The licensee found that, of those elements that remained in the core, there were four that had signs of cracks in the cladding. (The licensee then had 5 Al fuel elements that had cracks in the cladding, including one found previously in 2007). Because of the cracking problem noted in some of the stuck elements, the elements that had been removed from the core were not returned to the core but left in their respective storage locations. No cause for the cracking could be determined but the licensee surmised that it may have been caused from age and the environment in which the elements were maintained (neutron flux, thermal cycling, and immersed in water for almost 50 years).

On January 9, 2012, the licensee notified the NRC about the cracks that had been noted in the fuel elements. The licensee submitted a letter documenting the problems that same day. (The NRC had been notified of the cracked element removed from the core in 2007 by a phone conversation between the licensee and Project Manager on September 19, 2011.)

On January 17-18, 2012, the NRC completed an inspection at the Aerotest Radiography and Research Reactor (see NRC Inspection Report No. 50-228/2012-201). During that inspection one unresolved item was identified for possibly operating the reactor with damaged fuel elements.

The licensee subsequently made the decision to remove all the fuel elements from the core. It was decided to hire a contractor who would develop a plan to remove all the

stuck elements and submit a proposed project plan and reactor work instructions (RWIs) to the licensee. A company, Secured Transportation Services (STS), was chosen for the work.

2. Fuel Handling and Inspection Including Defueling Operations

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 Technical Specifications (TS) Section 5.1.1 and Section 11:

- Current Core Configuration Map
- Current Fuel Element Storage Location Map
- Fuel handling equipment and reactor instrumentation
- Selected Operational Log Sheets for the past three months
- Core Configuration Map for the period prior to December 2011
- Fuel Element Storage Location Map prior to December 2012
- Various current records and data sheets related to fuel movement
- Reactor Safeguards Committee (RSC) meeting minutes for 2011 and to date in 2012
- Fuel movement and examination records including video of fuel inspection
- Listing of the Stuck Fuel Elements and Graphite Elements including a description of each
- Section IV of the ARRR Procedures Manual entitled, "Critical Assembly and Power Calibration," PCN No. 6, RSC approval dated November 2, 2005, with the latest Temporary Change (PCN No. 6A) dated December 12, 2011
- Aerotest Operations (AO) RWI No. AO RWI 101, "Aerotest – Canister Handling, Loading, Drying, and Conditioning," Rev. 0, dated June 25, 2012
- RWI No. AO RWI 102, "Aerotest – Fuel Handling Procedure," Rev. 0, dated June 25, 2012
- RWI No. AO RWI 103, "Aerotest – Fuel Inspection Procedure," Rev. 0, dated June 25, 2012
- RWI No. AO RWI 104, "Aerotest – Instrumented Fuel Element Cropping Procedure," Rev. 0, dated June 26, 2012
- RWI No. AO RWI 105, "Aerotest – Upper Grid Plate Relocation," Rev. 0, dated June 26, 2012
- Project Plan, "Aerotest Operations Fuel Removal, Inspection, and Canning," Document (Doc.) No. Aero-PP-01, Rev. 0, dated June 25, 2012

In addition, the inspector observed the planning, discussions, and actions of the licensee and contractor personnel during removal of the "stuck" fuel and graphite elements from the core.

b. Observations and Findings

(1) Plan for Removing the Remaining Elements from the Core

As indicated above, a project plan was developed by the contractor which provided guidance and instructions on the process to be used for removing the elements that remained in the core. Procedures had been developed outlining the various steps that were involved. The inspector verified that the plan and procedures had been reviewed and approved by the RSC before the work started.

The project plan included various steps in order to remove the “stuck” fuel and graphite elements from the core and accomplish complete defueling of the core. The plan included the following work evolutions:

- a) Assembling of the extension tools necessary for the job of working in the reactor pool including an articulating grapple arm on the end of a pole, a tool to rotate the elements in the inspection stand, and a canister holding tool that could be fastened on the end of a pole. (It was noted that eight storage canisters with special lids containing drain and vent ports and a pintal on top, with which to grapple onto the canister using a fuel handling tool, were also fabricated, leak tested, and shipped to the facility to be used to contain the cracked elements.)
- b) Placing the newly constructed inspection stand and canister storage rack in the pool.
- c) Raising the upper grid plate to allow removal of the elements from underneath using the articulating grapple tool.
- d) Removing all the fuel and graphite elements that were previously stuck and could not be removed out through the top of the grid plate.
- e) Cutting the wires and top tube off (or “cropping”) the two instrumented fuel elements (IFEs) so that they could be placed in a storage location and so the one that was damaged could be placed in a storage canister.
- f) Inspecting all the fuel elements including the ones that were not damaged or stuck.
- g) Placing the damaged elements in storage canisters (or “canning” the elements).

(2) Plan of the Day and Problem Resolution

Prior to starting work each day, the licensee and contractor personnel met

and discussed in detail what would be attempted during that day's activities. Safety precautions and the applicable procedure(s) were reviewed. Everyone was allowed the opportunity to voice any concerns they might have and the course of action for the day was agreed upon. Although various setbacks and problems arose during the project, everyone's input was considered before proceeding. After a consensus was reached, the project work began again.

At one point, following the problem with an upper grid plate bolt shearing, a conference call was held with the licensee staff, the contractor personnel, and the Chair of the RSC. After the problem and possible course of action was explained, the RSC Chair requested that certain measures be taken and the next course of action was discussed and agreed upon.

(3) Removal of the Remaining Fuel Elements

As noted above, various problems occurred during the project. In an effort to raise the upper grid plate, three of the four bolts holding the plate in place sheared off as they were being removed (the fourth bolt was loosened without incident). When licensee and contractor personnel tried to raise upper grid plate, it became bound. It was thought that the Control Rod Guide Tubes (CRGTs) were potentially causing the grid plate to bind so the licensee attempted to remove the three CRTGs. That effort proved unsuccessful and the focus of attention turned again on other methods to move the upper grid plate. Eventually, after mechanical agitation, it was raised about one inch. The IFE cropping operation required extra effort but the top tube and wires were successfully removed.

Once the various obstacles to removal of the elements were overcome, the fuel removal proceeded with the elements being lifted slightly with the articulating grapple tool, tipped slightly and worked out from under the grid plate through an opening in the core support structure. All the fuel and graphite elements were eventually removed and the core was completely defueled without further problems. The elements were removed as stipulated by RWIs.

(4) Fuel Inspection

As noted previously, the inspection stand was placed in the pool to facilitate element inspection. Fuel element inspection was accomplished by placing each element in the inspection stand and, using an underwater camera, observing the length of the element. The element was then rotated one quarter turn and the length was again observed. Those that were noted to be cracked were designated to be placed in a canister for "canning". All the observations of the fuel elements were documented and videotaped so that a closer examination could be conducted at a later time if necessary. The inspections were completed in accordance with the appropriate RWI.

After the element inspection was complete, the licensee found that there were 21 Al clad fuel elements which exhibited some type of cracks – most had longitudinal crack but at least two had circumferential cracks toward the upper portion of the elements. One other fuel element appeared to have the beginning of a crack. No cracks were noted in any of the SS clad elements. The licensee made the decision to place all the cracked elements in canisters for storage.

Because the licensee originally knew of four cracked elements and it was anticipated that there would only be a few others found, the licensee directed the contractor to manufacture eight canisters (one other was manufactured as a test canister). A storage rack with 12 positions was also designed and fabricated to hold the canisters. In light of the fact that 21 cracked elements were found, the licensee ordered more canisters and a larger storage rack. These will not be ready for at least five weeks. Also, the licensee made the decision to have the contractor personnel assist in placing all the cracked elements in canisters. However, due to other commitments, the contractor personnel will not be able to return to Aerotest until October 2012. It was agreed that leaving the cracked fuel elements in storage racks until October would not pose any greater risk than having them in the core (as they had been in the past). The licensee was informed that the issue of ensuring that all the cracked fuel elements were placed in canisters would be followed by the NRC as an Inspector Follow-up Item (IFI) and will be reviewed during a future inspection (IFI 50-228/2012-204-01).

(5) Placing Cracked Element in Canisters

One portion of the inspection stand contained a position where a canister could be placed. The method that the licensee planned to use for placing an element in a canister consisted of the following steps. After the inspection of a damaged element was completed, it would be placed in the canister (which had been positioned in the rack) so that the configuration control of the element would be maintained (i.e., all of the element would be contained inside the canister even if the element were to fall apart). The canister would then be brought to the surface of the pool and the lid attached. The canister would then be drained/dewatered using compressed helium gas and a vacuum drawn on the canister. Finally, the canister would be backfilled with helium gas to complete the operation. During the inspection two cracked elements were successfully placed in canisters using the above steps.

(6) Maintaining Control of the Elements and Records

The inspector reviewed the records being maintained for the defueling operation and fuel transfers. The appropriate records were being filled out by one person designed as the “recorder” as required. It was noted that positive control was maintained over the fuel and graphite element

transfers. 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.

During the inspection it was also noted that the serial numbers on many of the older AL clad elements could not be read. It appeared that some of the numbers may have been obliterated over the years by the use of the fuel handling tool. The licensee indicated that they did not necessarily track or visually identify the fuel elements by serial number but typically by the position in the core or storage rack. This "location" tracking method had been used for years to identify and verify the elements. Because this method of fuel and serial number verification appeared to be somewhat less rigorous than usual, the licensee was informed that the issue of fuel verification would be considered by the NRC as an Unresolved Item (URI) and would be reviewed during a future inspection (URI 50-228/2012-204-02).

(7) TS Section 11 – Fuel Storage and Transfer

TS Section 11 required that the licensee store fuel in specific locations and transfer fuel only under certain conditions.

Through direct observation the inspector verified that the licensee was not storing fuel in the floor of the Reactor Room although such storage was allowed. All fuel was stored in a locked vault or in the reactor pool/tank. Not more than one fuel element was allowed in the facility which was not in storage or in the core lattice.

c. Conclusion

Fuel movements and inspections and defueling operations were completed and documented in accordance with the requirements specified by standard procedure and by the Reactor Work Instructions that had been developed for the defueling project. Twenty-one AL clad elements were found with cracked cladding. One URI was noted concerning fuel element serial number verification.

3. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 20 and the requirements in TS Sections 6.2, 7.0, and 12.1.2:

- Special Work Permits (SWPs) - Numbers 2012-01 through 2012-03

- Radiological signs and posting at the entrances to controlled or restricted areas
- Calibration records for portable monitoring instruments provided by the contractor
- Training provided to the contractor personnel and NRC inspector
- Radiation protection surveillance and survey data for the defueling project recorded on:
 - Instrument Calibration forms
 - Air Filter Paper Counting Sheet forms
 - Aerotest Operations, Inc. Monthly Radiation Survey forms
 - Aerotest Operations, Inc. Quarterly Maintenance Check List forms
- Section VI of the ARRR Procedures Manual entitled, "Radiological Safety Procedures," PCN No. 3, RSC approval dated April 29, 1996
- Section VIII of the ARRR Procedures Manual entitled, "Maintenance Procedures," PCN No. 2, RSC approval dated January 14, 1993
- "ALARA and Radiation Protection Program for Aerotest Operations, Inc.," updated August 14, 2004

The inspector also observed the use of dosimetry and radiation monitoring equipment during the inspection and conducted radiation surveys of various items and during various work evolutions using an NRC survey meter.

b. Observations and Findings

(1) Surveys

Radiation and contamination survey results indicated that defueling project activities were being conducted in accordance with applicable procedures. The results of the surveys were documented on the applicable forms and were evaluated as required. No surveys showed any contamination above established limits.

During the inspection the inspector conducted radiation surveys during work evolutions. The radiation levels noted by the inspector, using an NRC survey meter, were similar to those detected by the licensee. No anomalies were noted.

The inspector noted that licensee and contractor personnel were using the appropriate monitoring equipment during and following the various work evolutions. Everyone monitored after handling any equipment or items that might have been contaminated.

(2) Postings and Notices

During tours of the facility, the inspector observed that caution signs, postings, and controls in the restricted or controlled areas were acceptable for the hazards involving radiation, high radiation, and contamination and were posted as required by 10 CFR Part 20,

Subpart J. Radiological signs were typically posted at the entrances to controlled areas.

Copies of current notices to workers were posted in various areas in the facility including the hallway in the Reactor Bay just outside the Control Room. Other postings also characterized the industrial hygiene hazards that were present in the areas as well. The inspector noted that the copies of NRC Form-3, "Notice to Employees," posted at the facility as required by 10 CFR Part 19.11, were the current version.

(3) Dosimetry

The inspector determined that the licensee used thermoluminescent dosimeters (TLDs) for whole body monitoring of beta and gamma radiation exposure (with an additional component to measure neutron radiation). The licensee also used TLD finger rings for extremity monitoring. The dosimetry was supplied and processed by Radiation Detection Company, a company that was a National Voluntary Laboratory Accreditation Program accredited vendor. The licensee issued also contractor personnel dosimeters and finger rings to be used for the job and issued pocket ion chambers each day to track daily exposure.

(4) Radiation Monitoring Equipment

During a previous inspection in June 2012, the inspector determined that licensee survey meters had the acceptable up-to-date calibration sticker attached. The inspector noted that the calibration of portable instruments was being verified quarterly as required by procedure. Calibration of survey meters and equipment supplied by the contractor was also reviewed. Those instruments were found to be properly calibrated as required.

(5) Training

The inspector observed the training given to the contractor personnel. Those individuals were acceptably trained in radiation protection practices. The inspector also received training concerning the Special Work Permit issued for the defueling project.

(7) Radiation Work Permit Program

SWPs were required to be prepared for special operations typically performed by non-Aerotest maintenance and other support personnel who were required to work in radiation areas. The inspector noted that SWPs had been written and issued for the contractor personnel as well as for the inspector. The SWPs had been prepared and implemented in accordance with the requirements specified in the licensee's "Radiological Safety Procedures." The controls and safety precautions specified were appropriate for the work conducted under the SWP.

(8) Facility Tours

The inspector toured the facility on various occasions and observed activities in offices, support areas, the Reactor Bay, and the mezzanine area. Through observations of, and interviews with, licensee staff, the inspector confirmed that personnel complied with the signs, postings, and controls. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was detected in the facility.

c. Conclusion

The inspector determined that the Radiation Protection and ALARA Programs, as implemented by the licensee, satisfied regulatory requirements because:

1) surveys and associated checks were completed and documented acceptably to permit evaluation of the radiation hazards present; 2) postings met regulatory requirements; 3) personnel dosimetry was being worn as required; 4) radiation survey and monitoring equipment was being maintained and calibrated as required; and, 5) radiation protection training was being conducted for contractor personnel as required.

4. Conformance to Security Plan Requirements

a. Inspection Scope (IPs 81401, 81402, 81431, 81810)

The inspector reviewed the following to verify compliance with Section 3.2 of the TS and with the licensee's NRC-approved Physical Security Plan (PSP) entitled, "Aerotest Radiography and Research Reactor Security Plan," last revised January 7, 2005:

- Access controls currently in effect
- Monthly Alarm Check List forms for 2012
- Emergency detection devices and physical barriers
- "Emergency Plan for the Aerotest Radiography and Research Reactor," last revised January 14, 2005, and last reviewed May 16, 2011
- Section III of the ARRR Procedures Manual entitled, "General Emergency Procedures," Permanent Change Notice (PCN) Number (No.) 4, RSC approval dated January 28, 2005
- Section V of the ARRR Procedures Manual entitled, "Security Procedures," PCN No. 3, RSC approval dated February 11, 2005

b. Observations and Findings

The inspector conducted an inspection of the Security Plan and response in June 2012 (refer to NRC Inspection Report No. 50-228/2012-203). During that inspection the inspector verified that the licensee was maintaining adequate security and control over the facility. As noted during the June 2012 inspection,

the PSP in use by the licensee was the same as the version approved by the NRC. That version was dated January 7, 2005, and had last been reviewed on May 16, 2011. The PSP was being reviewed biennially as required and annual security training was completed as stipulated by the PSP. Implementing procedures were consistent with the PSP.

During this inspection the inspector verified that the physical protection system, consisting of barriers, alarms, equipment, and instrumentation, remained in place and was as stipulated in the PSP. The system was being maintained and tested periodically as required by procedure. Access controls were implemented as required and keys to the various facility doors were controlled and held only by designated personnel. It was noted that the licensee had verified that the background investigations and clearances of the contractor personnel were current.

c. Conclusion

Security facilities, equipment, training, and procedures satisfied PSP requirements.

5. Design Change Functions

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the design change functions outlined in TS Section 12.1.3 were completed:

- RSC meeting minutes for July 11, 2012
- Section I of the ARRR Procedures Manual entitled, "Administrative Procedures," PCN No. 2, RSC approval dated June 28, 1990

b. Observations and Findings

The inspector verified that the licensee was aware that changes or modifications to the facility were required to be analyzed by the staff and the results of the analyses presented to the RSC. Following a review, the RSC would then approve them if the changes or modifications were determined to be acceptable. If necessary the change would be submitted to the NRC for review and approval.

As noted in Paragraph 2 above, one of the obstacles encountered by the licensee was raising the upper grid plate to allow the elements to be removed from underneath. When the licensee tried to loosen the four bolts holding the upper grid plate to the core support structure, three bolts would not turn. Eventually the three bolts snapped off in place while the fourth bolt was loosened and unscrewed about two inches. In order to reattach the upper grid plate to the core support structure in the future, several methods were discussed. The contractor personnel indicated that they might be able to develop a clamping mechanism that could be used instead of the bolts. This would eliminate the necessity of redrilling the upper grid plate and drilling and tapping the core

support structure. Because this would be a change to the current structure, the licensee would need to perform a 10 CFR 50.59 evaluation and review of the proposed new attachment mechanism. The licensee was informed that the issue of reviewing any changes made will be considered an IFI and will be reviewed during a future inspection (IFI 50-228/2012-204-03).

c. Conclusion

Audits and reviews were being conducted acceptably by the RSC in accordance with the requirements specified in the TS. No changes had been made at the facility since the last inspection but the process remained in place such that changes or modifications would be reviewed and approved by the RSC as required.

6. Exit Interview

The inspection scope and results were summarized on July 23, 2012, with members of licensee management. The inspector described the areas inspected and discussed 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 Personnel

C. Bauman	Research and Development Manager
A. 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

Other Personnel

R. Boyd	Vice President, Secured Transportation Services (STS)
B. Williams	President, Secured Transportation Services (STS)

INSPECTION PROCEDURES USED

IP 69001 Class II Non-Power Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-228/2012-204-01	IFI	Review the licensee's actions to ensure that all the cracked fuel elements are placed in canisters.
50-228/2012-204-02	URI	Review the issue of fuel verification at the Aerotest facility.
50-228/2012-204-03	IFI	Review the licensee's 10 CFR 50.59 evaluation and review of the proposed new mechanism for attaching the upper grid plate to support structure.

Closed

None

PARTIAL LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access and Management System
Al	Aluminum
ARRR	Aerotest Radiography and Research Reactor
CRGT	Control Rod Guide Tube
IFI	Inspector Follow-up Item
IP	Inspection Procedure
kW	kilowatt
No.	Number
NRC	U.S. Nuclear Regulatory Commission
PCN	Procedure Change Notice
PSP	Physical Security Plan
RSC	Reactor Safeguards Committee
RWI	Reactor Work Instruction
SS	Stainless steel
SWP	Special Work Permit
TS	Technical Specification
URI	Unresolved Item