

December 18, 2013

EA-13-108

Mr. Michael Anderson, President
Aerotest Operations, Inc.
Autoliv ASP, Inc.
1320 Pacific Drive
Auburn Hills, MI 48326

SUBJECT: AEROTEST OPERATIONS, INC. – NOTICE OF VIOLATION – NRC
INSPECTION REPORT NO. 50-228/2012-201

Dear Mr. Anderson:

This letter refers to an inspection conducted by the U.S. Nuclear Regulatory Commission (NRC) on January 17 and 18, 2012, at the Aerotest Radiography and Research Reactor facility. The purpose of this inspection was to review the results of a fuel inspection conducted by your facility in December 2011. During that fuel inspection, Aerotest identified cracks in four aluminum-clad fuel elements and on January 11, 2012, Aerotest submitted a letter to the NRC describing these findings. A copy of that letter is available under the NRC's Agency Documents Access Management System (ADAMS) at Accession No. ML12018A336. On August 10, 2012, Aerotest submitted a letter to the NRC (ADAMS Accession No. ML12250A659) documenting that a follow-up fuel inspection at the facility revealed that there were a total of 22 aluminum-clad fuel elements with cracks in the cladding. The subject inspection report (ADAMS Accession No. ML120310173) documented the results of the NRC's inspection and identified an unresolved item (URI) associated with operation of the reactor with damaged fuel (URI 50-228/2012-201-01).

During a telephone conference on September 6, 2013, Mr. Gregory T. Bowman of the NRC informed Ms. Sandra Warren of your staff that the NRC had completed its review of the URI and was considering escalated enforcement for an apparent violation involving operation of the reactor with significantly damaged fuel, contrary to Section 10.2 of your Technical Specifications. During that telephone conference, Ms. Warren indicated that Aerotest Operations, Inc. believed that a predecisional enforcement conference or written response was needed and on October 4, 2013, the NRC issued Aerotest a letter (ADAMS Accession No. ML13254A074) offering the opportunity to provide the NRC with additional information before making an enforcement decision in this matter. Subsequently, on November 1, 2013, you submitted a letter (ADAMS Accession No. ML13309A017) providing your written response to the apparent violation. In your letter you indicated that Aerotest accepts that a violation occurred, but believes that the violation is of low safety significance (i.e., Severity Level IV).

Based on the information developed during the subject inspection and subsequent inspection activities, and the information that Aerotest provided in the letters referenced above, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the

enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in the subject inspection report. As discussed, the violation is associated with operation of the reactor for an indeterminate period of time beginning at a point after the last full fuel inspection in 2006 up until October 15, 2010, when the facility ceased reactor operation, with a number of fuel elements with varying degrees of cracking in the aluminum cladding.

As discussed in the subject inspection report, the actual radiological consequences of this issue were low due to the fact that, while some elevated levels of fission products were found in the reactor's purification system, no detectable airborne releases or local or environmental contamination were identified in or around the facility. The facility did, however, operate the reactor using fuel with significant cracks in the cladding for an indeterminate period of time in violation of technical specifications.. Although the actual safety consequences of this situation were low, operating the facility with damaged fuel represents a loss of the primary fission product barrier and the potential for release of radioactive material, in particular during accident conditions. Therefore, this issue has been categorized in accordance with the NRC Enforcement Policy as a Severity Level III violation.

In accordance with the NRC Enforcement Policy, a base civil penalty in the amount of \$3,500 is considered for a Severity Level III violation. Because your facility has not been the subject of an escalated enforcement action within the last 2 years, the NRC considered whether credit was warranted for *Corrective Action* in accordance with the civil penalty assessment process in Section 2.3.4 of the NRC Enforcement Policy. As described in the NRC's October 4, 2013, letter, corrective actions included the following: (1) placing all the undamaged fuel into proper storage locations inside the reactor tank; (2) fabricating specially designed canisters to contain the damaged fuel elements; (3) placing each fuel element with cracked cladding, with the exception of two recently identified damaged elements, into one of the specially designed canisters; and (4) placing each of the canisters in a specially designed and fabricated storage rack. The majority of the damaged fuel was safely placed into storage on December 13, 2012; you indicated that you intend to maintain the remaining two damaged elements in the reactor tank for monitoring. All of these corrective actions were completed in a timely manner and with an appropriate focus on occupational radiation safety, and the NRC has determined that credit is warranted for your corrective actions.

Therefore, to encourage prompt identification and prompt and comprehensive correction of violations, and in recognition of the absence of previous escalated enforcement action, after consultation with the Director of the Office of Enforcement, a civil penalty is not being proposed in this case. However, significant violations in the future could result in a civil penalty.

The NRC has concluded that information regarding the reason for the violation, the actions taken to correct the violation and prevent recurrence, and the date when full compliance was achieved is already adequately addressed on the docket in your letters referenced above, as well as in the subject inspection report and NRC Inspection Reports 50-228/2012-204 (ADAMS Accession No. ML12213A001) and 50-228/2012-206 (ADAMS Accession No. ML12361A147). Therefore, you are not required to respond to this letter unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice.

M. Anderson

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In accordance with Title 10 of the *Code of Federal Regulations* Section 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The NRC includes significant enforcement actions on its Web site at (<http://www.nrc.gov/reading-rm/doc-collections/enforcement/actions/>).

Sincerely,

/RA/

Roy P. Zimmerman, Director
Office of Enforcement

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

Enclosure:
Notice of Violation

cc w/encl.: See next page

Aerotest Operations, Inc.

Docket No. 50-228

cc:

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

Fred Meren, Reactor Supervisor
Aerotest Operations, Inc.
3455 Fostoria Way
San Ramon, CA 94583

California Energy Commission
1516 Ninth Street, MS-34
Sacramento, CA 95814

Radiological Health Branch
P.O. Box 997414, MS 7610
Sacramento, CA 95899-7414

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

M. Anderson

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Sincerely,

/RA/

Roy P. Zimmerman, Director
Office of Enforcement

Docket No. 50-228
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Enclosure:
Notice of Violation

cc w/encl.: See next page

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NRR-106

OFFICE	NRR/DPR/PROB*	OE/EB/BC	NRR/DPR/PROB/BC	NRR/DPR/DD	OE
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DATE	7/30/13	12/19/13	11/21/13	11/22/13	12/18/13

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NOTICE OF VIOLATION

Aerotest Operations, Inc.
Aerotest Radiography and Research Reactor Facility

Docket No. 50-228
License No. R-98
EA-13-108

During an NRC inspection conducted on January 17 and 18, 2012, a violation of NRC requirements was identified. In accordance with the NRC Enforcement Policy, the violation is listed below:

Technical Specification 10.2 states that the reactor shall not be operated whenever there are significant defects in the fuel elements, control rods, or control circuitry.

Contrary to Technical Specification 10.2, from an indeterminate period of time beginning at a point after the last full fuel inspection in 2006 up until October 15, 2010, when the facility ceased reactor operation, the licensee operated the reactor with significant defects in the fuel elements. Specifically, during fuel inspections conducted following reactor shutdown, a number of fuel elements were identified as having varying degrees of cracking in the aluminum cladding, representing a significant defect in the fuel elements and loss of the integrity of a fission product barrier.

This is a Severity Level III violation (Section 6.1).

The NRC has concluded that information regarding the reason for the violation, the corrective actions taken and planned to correct the violation and prevent recurrence, and the date when full compliance was achieved is already adequately addressed on the docket in your letters dated January 11 and August 10, 2012, and November 1, 2013, as well as in NRC Inspection Report No. 50-228/2012-204, dated August 14, 2012, and NRC Inspection Report No. 50-228/2012-206, dated January 7, 2013. However, you are required to submit a written statement or explanation pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) Section 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," include the EA number, and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Director, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

If you choose to respond, your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system, which is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. Therefore, to the extent possible, the response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction.

In accordance with 10 CFR 19.11, you are required to post this Notice within 2 working days.

Dated this 18th day of December 2013