



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 31, 2019

Dr. David M. Slaughter, President
and Reactor Administrator
Aerotest Operations Inc.
3455 Fostoria Way
San Ramon, CA 94583

SUBJECT: AEROTEST OPERATIONS, INC. – REGULATORY AUDIT RE: LICENSE
AMENDMENT REQUEST FOR POSSESSION-ONLY STATUS OF THE
AEROTEST RADIOGRAPHY AND RESEARCH REACTOR
(EPID NO. L-2019-LLA-0065)

Dear Dr. Slaughter:

By letter dated March 21, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19084A051), as supplemented by letter dated June 28, 2019 (ADAMS Accession No. ML19184A112) Aerotest Operations, Inc. applied for license amendment of Facility Operating License No. R-98 for the Aerotest Radiography and Research Reactor (ARRR). The requested licensing action would amend the facility operating license to a possession-only license in support of your decision to permanently cease operation of the ARRR.

The U.S. Nuclear Regulatory Commission (NRC) staff will conduct an onsite regulatory audit to review the ARRR license amendment request (LAR) beginning December 11th, 2019, and continuing as necessary through February 2020. The intent of the audit is to gain a better understanding of your LAR, including the proposed changes to your facility. In addition, the regulatory audit will identify information that will support the basis of the licensing decision, need to be docketed, and will allow the NRC staff to more efficiently gain insights necessary to complete the review of the ARRR LAR. The NRC staff has provided a copy of the audit plan as an enclosure to this letter.

At the completion of the regulatory audit, a regulatory audit summary will be prepared and provided to you. If necessary, you will have the opportunity to supplement the application to provide additional information or the option to withdraw the application.

We appreciate your support in providing space, the requested documentation and access to the necessary personnel and other materials that will assist in an efficiently conducted audit.

If you have any questions regarding the NRC staff's audit, please contact me at contact me at 301-415-0893, or by electronic mail at Geoffrey.Wertz@nrc.gov.

Sincerely,

/RA Greg Casto for/

Geoffrey A. Wertz, Project Manager
Research and Test Reactors Licensing Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

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

Enclosure:
As stated

cc:

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

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

Test, Research and Training
Reactor Newsletter
Attention: Ms. Amber Johnson
Dept of Materials Science and Engineering
University of Maryland
4418 Stadium Drive
College Park, MD 20742-2115

SUBJECT: AEROTEST OPERATIONS, INC. – REGULATORY AUDIT RE: LICENSE AMENDMENT REQUEST FOR POSSESSION-ONLY STATUS OF THE AEROTEST RADIOGRAPHY AND RESEARCH REACTOR (EPID NO. L-2019-LLA-0065) DATE: OCTOBER 31, 2019

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ADAMS Accession No. ML19255F932 *concurred via email

NRR-088

OFFICE	NRR/DLP/PM*	NRR/DLP/LA	NRR/DLP/BC	NRR/DLP/BC	NRR/DLP/PM*
NAME	GWertz	NParker	AMendiola	GCasto	GWert (GCasto for)
DATE	10/3/2019	10/3/2019	10/8/2019	10/9/19	10/31/19

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NUCLEAR REGULATORY COMMISSION
REGULATORY AUDIT PLAN FOR THE
AEROTEST RADIOGRAPHY AND RESEARCH REACTOR
LICENSE AMENDMENT REQUEST FOR A POSSESSION-ONLY FACILITY LICENSE
SAN RAMON, CALIFORNIA
DECEMBER 2019

Background

The U.S. Nuclear Regulatory Commission (NRC) is continuing its review of your license amendment request (LAR) to amend the license and technical specifications (TSs) to a possession-only license in support of your decision to permanently cease operation of the Aerotest Radiography and Research Reactor (ARRR), as provided by letter dated March 21, 2019, and as supplemented by letter dated June 28, 2019 (available on the NRC's public web site at www.nrc.gov under the Agencywide Documents Access and Management System (ADAMS) Accession Nos.: ML19084A051 and ML19184A112, respectively). This regulatory audit is intended to assist the NRC staff in its review of the LAR.

Regulatory Bases for the Audit

The purpose of this audit is to determine if the licensee's proposed LAR to permanently cease reactor facility operations and obtain a possession-only license and associated TSs meets regulatory requirements and addresses applicable guidance provided in NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors," Part 1 "Format and Content," and Part 2, "Standard Review Plan and Acceptance Criteria," Chapter 17, "Decommissioning and Possession-Only License Amendments," Section 17.2, "Possession-Only License Amendments," (ADAMS Accession Nos.: ML042430055 and ML042430048, respectively).

Regulatory Scope for the Audit

The NRC staff will tour the facility to gain an understanding of the long-term fuel storage plan, identify any current ARRR safety analysis report (SAR) design bases and TS requirements that help to ensure safe and secure long-term fuel storage, and review processes and procedures needed for maintaining the safe and secure possession-only status of the ARRR facility.

Information Needed for the Audit

ARRR staff should be prepared to support the NRC staff with a comprehensive tour of the facility, including observation of the proposed possession-only status fuel storage. A copy of the licensee's current SAR, TSs, Physical Security Plan (PSP), Emergency Plan (EP), Operator Requalification Program, and Operating Procedures should also be made available to the NRC staff.

Audit Team

The NRC staff performing this audit will be:

- Geoffrey Wertz (Audit Leader and Technical Reviewer)
- Elizabeth Reed (Technical Reviewer)

Audit Team Logistics

The audit will initiate on December 11th, 2019 and continue through February 2020, as needed. Audit activities may be conducted as onsite review meetings and teleconference and video conference supported activities, as appropriate and efficient to the gathering of information by the staff. For the initial meeting, an onsite review meeting is planned, including a tour of the facility and a review of the information described above. The audit period may be reduced or extended, dependent on staff and licensee progress in addressing audit questions. Additional audit activities may be planned in advance, as necessary to support the understanding of information necessary to complete the review of the LAR. It is expected that more interaction will be needed to identify information requests to support LAR review activities.

Deliverables

At the completion of the regulatory audit the NRC staff will prepare a regulatory audit summary, which will be issued within 90 days after the audit. The regulatory audit summary will include the documents reviewed, the audit activities, and any requests for additional information that were discussed or that will be issued based on the audit, as applicable.

Audit Questions

NUREG-1537, Section 17.2, "Possession-Only License Amendment"

1. The guidance in NUREG-1537, Part 1, Section 17.2.1, states to provide a commitment date to submit the applications for authorization to decommission and for license termination. Do you plan to submit the applications for authorization to decommission and license transfer? Do you have a planned date or time frame?
2. For a possession-only license, the phrase "in connection with the operation of the reactor," is currently stated in License Condition (LC) 2.B.(2). Since the application is for a possession-only license, is this phrase consistent? Do you plan to remove it?
3. LC 2.C.(3) refers to an outdated regulation (Title 10 of the *Code of Federal Regulations* 10 CFR 2.790). Do you plan to request to change the LC reference to the current regulation, which is 10 CFR 2.390?
4. The LAR states that, "There is no conflict with the new direction and authority concerning the existing SAR (*Aerojet-General Nucleonics Industrial Reactor - Hazards Summary report*, AN-1193, September 1964); thus, changes are not needed or proposed." The NRC staff is not clear as to the applicability of the current Aerotest safety analysis to provide a basis for the proposed TSs, and to provide analyses that demonstrate that the facility can be possessed in a way that protects the health and safety of workers, the public and the environment. More specifically, the NRC staff has the following questions:

- 4.1 Can you provide a description of the proposed fuel storage location, and any proposed limits the movement of the fuel or its storage locations?
 - 4.2 Can you provide a description of the conditions necessary to maintain the fuel in a safe condition?
 - 4.3 Can you provide the results of any safety reviews done to ensure that the possession-only fuel remains in a safe condition?
 - 4.4 Can you provide a description of any accident scenarios associated with the possession-only fuel in long term storage?
5. Can you provide the possession-only versions of the Aerotest Operations PSP and EP?
 6. The guidance in NUREG-1537, Part 1, Section 17.2.1.5, states to provide a plan for making operational or procedural changes under the possession-only license since 10 CFR 50.59 applies to operating reactors only. Can you provide a plan for making operational or procedural changes under the possession-only license?

Operator/Certified Fuel Handler Retraining Program

7. The proposed TS 11.3 states "The fuel handling tool shall remain in a lock cabinet under the cognizance of the Fuel Handling Supervisor (FHS) when not authorized for use." What are the roles and responsibilities of the FHS?
8. The proposed TS 11.4 states "Transfer of irradiated fuel in the reactor tanks shall be conducted by a minimum staff of two, a Certified Fuel Handler (CFH) and an additional person trained in radiation safety." Provide a CFH eligibility to include the certification and training requirements.
9. Provide a plan how to meet the training program covering fuel-handling operations. The program should include instructions of the following areas:
 - 9.1. Health physics fundamentals and the principles of reactor theory and thermodynamics.
 - 9.2. Design features of fuel-handling and storage activities and conditions, including facility systems and equipment associated with fuel-handling operations, pertinent instrumentation, and control systems.
 - 9.3. Systems to control or mitigate an accident in which the fuel is damaged.
 - 9.4. Administrative, operational, surveillance, emergency, and radiation control, security, and safety procedures concerning fuel handling and storage.
10. The proposed TS 11.5 states "Not more than one fuel element shall be allowed in the facility which is not in storage." Please verify that all fuel elements are currently in storage.

Security Plan

11. How does the PSP comply with the regulations in 10 CFR 73.21, 10 CFR 73.22, and 10 CFR 73.23 as applicable for Safeguards Information; in 10 CFR 73.57 for background checks; in 10 CFR 73.67 for the protection of special nuclear material; and, in 10 CFR 73.71 for Event Notification?
12. How does the PSP comply with the requirements in the following NRC Orders: EA-06-203 and EA-07-074?
13. The current PSP, Section IV, lists compensatory measures (CMs), but does not discuss their implementation. In order for the NRC staff to close-out the NRC confirmatory action letter, the CM implementation plan needs to be written into the PSP. Can you provide a PSP incorporating the CMs?
14. The current PSP does not provide a reference as to the type of material (low-enriched uranium, irradiated/fresh fuel, etc.) that is used at the facility, the quantity of material, and the storage location(s). Can you provide a PSP which provides the type of material that is used at the facility, the quantity of material, and the storage location(s)?

Emergency Plan

15. By letter dated June 28, 2019, Aerotest stated that the EP, as well as other site documents, have been updated to reflect the shutdown status, and would be implemented and submitted to the NRC upon approval of their requested changes to the license and TSs. The NRC staff finds that it would be beneficial to the licensee to have the EP reviewed by the NRC prior to implementation; however, it is the licensee's decision to make the changes following the 10 CFR 50.54(q) process. The NRC staff wants to ensure that the licensee understands that any changes to the EP made by the licensee in accordance with 10 CFR 50.54(q) will be subject to future NRC inspection.