



# AEROTEST OPERATIONS, INC.

3455 FOSTORIA WAY • SAN RAMON, CA 94583 • (925) 866-1212 • FAX (925) 866-1716

~~December 02, 2018~~  
January

ATTENTION: Document Control Desk  
U.S. Nuclear Regulatory Commission  
White Flint North  
11555 Rockville Pike  
Rockville, MD 20852-2738

AEROTEST RADIOGRAPHY AND RESEARCH REACTOR  
DOCKET NO. 50-228/LICENSE NO. R-98.


New ARRR Requalification Program

Ladies and Gentlemen:

Enclosed please find the new Requalification program for ARRR. (R-98) that complies with 10 CFR 55.59. Also enclosed is a copy of the supporting affidavit on behalf of Aerotest.

Should you have any questions or require additional information regarding this submission, please contact AO President David M. Slaughter, Ph.D. at (801) 631 5919 or [dmsraven@gmail.com](mailto:dmsraven@gmail.com)

Sincerely yours,

  
David M. Slaughter, Ph.D.  
President  
Aerotest Operations, Inc.

Enclosures:

1. ARRR Requalification Program
2. ARRR Requalification Program Checklist
3. Decommissioned Requalification Program
4. Affidavit

Date Corrected  
Per PM

MOD3  
ADZD  
NRR



# AEROTEST OPERATIONS, INC.

3455 FOSTORIA WAY • SAN RAMON, CA 94583 • (925) 866-1212 • FAX (925) 866-1716

Affidavit: ARRR Requalification Program.  
Docket No. 50-228/Lic. No. R-98

David M. Slaughter, PhD, being duly sworn, states that he is President of Aerotest Operation Inc., is authorized on the part of said Company to sign and file this response, and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

---

David M. Slaughter, PhD  
President AO

*A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which the certificate is attached, and not the truthfulness, accuracy, or validity of the document.*

Subscribed and swore to before me, a Notary Public, in and for the State of California and County of Contra Costa, this 2<sup>nd</sup> day of January 2018.

---

Notary Public in and for the State of California

My Commission Expires: 3/30/2021



OPERATOR REQUALIFICATION PROGRAM  
AEROTEST RADIOGRAPHY AND RESEARCH REACTOR  
Revision 11-2017

I. PURPOSE

A requalification program approved by the Nuclear Regulatory Commission is required per 10CFR55.59. The program shall be conducted for a period not to exceed 24 months and will be followed by consecutive 24 month programs.

II. LECTURES

Preplanned lectures will be given to licensed operators and senior operators on regular and continuing basis. Over the two-year requalification period, lecture topics to be covered include:

- a. nuclear theory and principles of operation
- b. facility design and general and specific operating characteristics
- c. instrumentation and control systems
- d. reactor protection system
- e. engineered safety features
- f. normal, abnormal, and emergency operating procedures
- g. radiation control and safety
- h. technical specifications
- i. applicable portions of 10 CFR

III. ON-THE-JOB TRAINING

Over the two year requalification period, each licensed individual shall perform at least ten reactivity control manipulations in any combination of reactor startups, shutdowns or any significant reactivity changes, and each licensed operator shall perform at least one reactor start up and one reactor startup checkout quarterly (at intervals not to exceed 4 months). Each licensed operator and senior operator shall demonstrate a satisfactory understanding of the operating procedures in each area for which he is licensed.

Each licensed operator and senior operator will be cognizant of any changes to any part of the requirements and obligations for safe and secure nuclear reactor operation. Changes for review include but not limited to changes made in procedures, technical specification, regulations, as well any changes to with significance to the facility shall be reviewed by every licensed operator on an ongoing basis as a part of a required reading list.

Each licensed operator and senior operator will review the contents of all abnormal, security, and emergency procedures on a regularly scheduled basis. Each operator shall participate in at least half of the emergency drills (and/or table top discussions)

per year specified in the Technical Specifications. The drill and applicable emergency procedures shall be reviewed with all licensed operators within 30 days of the completed drill.

#### VI. ACTIVE/INACTIVE STATUS

To maintain active status, each licensed operator or senior reactor operator "actively" performs the function of the reactor operator or senior reactor operator for a minimum of 4 hours each calendar quarter. (For senior reactor operators, direct supervision of these operations may be considered equivalent to actual performance.)

If a licensee has not actively performed his licensed functions for a minimum of 4 hours per calendar quarter, an authorized representative of the facility licensee shall certify that the qualifications and status of the licensee are current and valid and that the licensee has completed a minimum of 6 hours of licensed functions under the direction of an active licensed reactor operator or senior reactor operator as appropriate before resuming his licensed activities.

#### V. OPERATOR EVALUATION / EXAM-ADMINISTRATION

Biennial written examinations and annual operating tests will be given to all licensed operators and senior operators. The biennial written exam shall include questions formulated from the lecture material presented in Section II specifically to reinforce the phenomena, equipment, and processes associated with the Facility licensee.

Each reactor operator and senior reactor operator is required to take an annual operational exam to demonstrate operational proficiency of the reactor and auxiliary systems, and implementation of security and emergency processes to ensure safe and secure operation.

Licensed operators or senior operators who score less than 80% overall on the written examination or operating test will be required to participate in an accelerated program and during such a program may continue to perform licensed duties under supervision. The accelerated course content and duration will depend upon the individual's deficiencies.

The Reactor Supervisor shall be responsible for the preparation, administration and grading of the written examination and operating test. The responsibilities may be assigned to another senior operator to enable the Reactor Supervisor to take the examination.

## VI RECORDS

Records of the requalification program will be maintained to document each licensed operator's and senior operator's participation in the program. A summary document (log) will be maintained for each licensee that includes entries to support the licensee's active duty status, attendance dates for lectures, and references for on-the-job training activities. Records will also include copies of the written examination given, the answers given by each licensee, and the results of evaluations and documentation of operating tests and of any additional training given in areas where licensed operators and senior operators become inactive or exhibited deficiencies.

CHECKLIST for OPERATOR REQUALIFICATION PROGRAM

Requal. Period \_\_\_\_\_ to \_\_\_\_\_

A requalification program approved by the Nuclear Regulatory Commission is required per 10CFR55.59. The program shall be conducted for a period not to exceed 24 months and will be followed by consecutive 24 month programs.

Name: \_\_\_\_\_

License No. \_\_\_\_\_

LECTURES

Preplanned lectures will be given to licensed operators and senior operators on regular and continuing basis. Over the two-year requalification period, lecture topics to be covered include:

	Instr.	Date
a. nuclear theory and principles of operation	_____	_____
b. facility design and general and specific operating characteristics	_____	_____
c. instrumentation and control systems	_____	_____
d. reactor protection system	_____	_____
e. engineered safety features	_____	_____
f. normal, abnormal, and emergency procedures	_____	_____
g. radiation control and safety	_____	_____
h. technical specifications	_____	_____
i. applicable portions of 10 CFR	_____	_____

ON-THE-JOB TRAINING

Over the two year requalification period, each licensed individual shall perform at least ten reactivity control manipulations in any combination of reactor startups, shutdowns or any significant reactivity changes, and each licensed operator shall perform at least one reactor start up and one reactor startup checkout quarterly (at intervals not to exceed 4 months).

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date: \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date: \_\_\_\_\_

Each operator shall participate in at least half of the emergency drills (and/or table top discussions) per year. Date: \_\_\_\_\_

**ACTIVE/INACTIVE STATUS**

To maintain active status, each licensed operator or senior reactor operator "actively" performs the function of the reactor operator or senior reactor operator for a minimum of 4 hours each calendar quarter. (For senior reactor operators, direct supervision of these operations may be considered equivalent to actual performance.)

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date \_\_\_\_\_

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 1<sup>st</sup> QTR \_\_\_\_\_ 2<sup>nd</sup> QTR \_\_\_\_\_ 3<sup>rd</sup> QTR \_\_\_\_\_ 4<sup>th</sup> QTR \_\_\_\_\_  
Date/time \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

Activity: 5<sup>th</sup> QTR \_\_\_\_\_ 6<sup>th</sup> QTR \_\_\_\_\_ 7<sup>th</sup> QTR \_\_\_\_\_ 8<sup>th</sup> QTR \_\_\_\_\_  
Date/time: \_\_\_\_\_

**OPERATOR EVALUATION / EXAM-ADMINISTRATION**

Biennial written examinations Instr. \_\_\_\_\_ Score: \_\_\_\_\_ Date \_\_\_\_\_

Annual operating tests Instr. \_\_\_\_\_ Score: \_\_\_\_\_ Date \_\_\_\_\_

Instr. \_\_\_\_\_ Score: \_\_\_\_\_ Date \_\_\_\_\_

Medical Exam Date Due: \_\_\_\_\_



**OPERATOR REQUALIFICATION PROGRAM**  
**AEROTEST RADIOGRAPHY AND RESEARCH REACTOR**

I. PURPOSE

A requalification program approved by the Nuclear Regulatory Commission is required per 10CFR55.59. The program shall be conducted for a continuous period not to exceed 24 months in duration and will be followed by consecutive 24 month programs.

II. LECTURES

Preplanned lectures will be given a minimum of 4 hours per month on a continuous basis in areas where operator and senior operator written exams and facility operating experience indicate a deficient knowledge in the subject matter. Individuals who score less than 70% in any category on the biennial written examination or annual operating test must be tutored to bring their performance up to a minimum of 70%.

The requalification program shall cover but not necessarily be limited to the following subjects:

- a. Theory and principles of operation.
- b. General and specific plant operating characteristics.
- c. Plant instrumentation and control systems.
- d. Plant protection systems.
- e. Engineered safety systems.
- f. Normal, abnormal, and emergency operating procedures.
- g. Radiation control and safety.
- h. Technical specifications.
- i. Applicable portions of Title 10, Chapter 1, Code of Federal Regulations.

III. ON-THE-JOB TRAINING

Each licensed operator and senior operator shall perform at least 10 reactivity control manipulations in any combination of reactor startups and shutdowns which demonstrate skill and/or familiarity with reactivity control systems. These shall be performed during the term of the operator's license period.

Each licensed operator and senior operator shall demonstrate a satisfactory understanding of the operating procedures in each area for which he is licensed.

Each licensed operator and senior operator will be cognizant of facility design changes, procedure changes, and facility license changes.

Each licensed operator and senior operator will review the contents of all abnormal and emergency procedures on a regularly scheduled basis.

IV. EVALUATION

Biennial written examinations and annual operating tests will be given to all operators and senior operators to determine the required content of the specific retraining programs for the following year which shall include the subjects described in Section II. These shall include but not be limited

to simulated emergency and abnormal conditions and how the operators respond to such conditions.

Operators or senior operators who score less than 70% overall on the written examination or operating test will be required to participate in an accelerated program and during such a program may continue to perform licensed duties. The accelerated course content and duration will depend upon the individuals' deficiencies.

V. RECORDS

Records of the requalification program will be maintained to document each licensed operator's and senior operator's participation in the program. These records will include copies of the written examinations given, the answers given by each licensee, and the results of evaluations and documentation of operating tests and of any additional training given in areas where operators and senior operators exhibited deficiencies.

VI. INACTIVE STATUS

If a licensee has not actively performed his licensed functions for a minimum of 4 hours per calendar quarter an authorized representative of the facility licensee shall certify that the qualifications and status of the licensee are current and valid and that the licensee has completed a minimum of 6 hours of licensed functions under the direction of an operator or senior operator as appropriate before resuming his licensed activities.

VII. EXAMINATION ADMINISTRATION

The Reactor Supervisor shall be responsible for the preparation, administration and grading of the written examination and operating test. These responsibilities may be assigned to another senior operator to enable the Reactor Supervisor to take the examinations during the next cycle.