

Requalification Plan

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License R-112
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Table of Contents

1. Introduction.....	1
2. Schedule.....	1
3. Meetings.....	2
4. Document Review.....	2
5. Licensed Duties.....	3
6. Reactivity Manipulations.....	3
7. Written Exam.....	3
8. Operating Exam.....	4
9. Accelerated Requalification Program.....	4
10. Medical.....	4
11. Other Requirements.....	5
12. Records.....	5

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1. Introduction

This Reed Research Reactor (RRR) Requalification Plan is designed to satisfy the requirements of 10 CFR 55.59 and ANSI/ANS-15.4-2007. In accordance with 10 CFR 55.59(c)(7), this requalification program conforms generally but may not be identical to the requalification program outlined in paragraphs 10 CFR 55.59(c)(1) through (6). Significant deviations from those requirements are permitted only if supported by written justification and approved by the Commission.

The requalification requirements are the same for Reactor Operators (RO) and Senior Reactor Operators (SRO) except where specifically stated. The term “operator” is used in this Plan to apply to both levels of US Nuclear Regulatory Commission (NRC) licensing.

The objectives of the program are to refresh knowledge in areas of infrequent operation, to review facility and procedural changes, to address subject matter not reinforced by direct use, and to improve in areas of performance weakness. The program is designed to evaluate the reactor operator’s knowledge and proficiency to perform their duties and retrain where necessary. Emphasis is on those subjects necessary for continued proficiency. The program takes into consideration the specialized nature and mode of operation of the Reed Research Reactor and the background, skill, degree of responsibility, and participation of reactor operations personnel in related activities. The program content reflects facility modifications and changes in procedures. Successful completion of the program is required in order for the individual to continue to perform licensed activities.

The major components of the Requalification Plan are:

- Meetings
- Quarterly Licensed Hours
- Annual Reactivity Manipulations
- Annual Operating Exam
- Annual Document Review
- Biennial Written Exam
- Biennial Medical Exam

2. Schedule

The Requalification Program shall be continuous and operate on a two-year (biennial) cycle starting on July 1. In this Plan the terms “annual” or “annually” refer to the requalification year.

The Fall semester is from July 1 to December 31.

The Spring semester is from January 1 to June 30.

The calendar quarters are as follows:

First Quarter:	July 1 to September 30
Second Quarter:	October 1 to December 31
Third Quarter:	January 1 to March 31
Fourth Quarter:	April 1 to June 30

3. Meetings

Annually there shall be a minimum of five requalification meetings with at least two each semester. The lectures shall be pre-planned and documented (see 10 CFR 55.59(c)(2)). Attendance shall be documented. The meetings may be virtual and the documentation may be electronic.

The specific content of the meetings is to be based on items identified as weaknesses in the training program or operator knowledge. These weaknesses may be identified through NRC licensing exams, facility-administered requalification exams, or operator knowledge and performance observed by the Director.

The subjects of the meetings may be drawn from the topics listed below, but are not restricted to those topics. Not all topics must be covered in any requalification cycle and a meeting may cover multiple topics, however facility changes shall be covered at least once each semester.

- a) Facility changes (at least once per semester)
- b) Theory and principles of reactor operation
- c) General and specific reactor operating characteristics
- d) Reactor instrumentation, control, and safety systems
- e) Radiation control and safety; use and handling of radioactive materials
- f) Facility and regulatory requirements including License, Technical Specifications, Requalification Plan, Emergency Plan, Administrative Procedures, and applicable portions of Title 10 Code of Federal Regulations
- g) Standard Operating Procedures and Emergency Plan Implementation Procedures
- h) Confirmatory Orders
- i) Fitness for duty requirements for operators
- j) Harassment policies
- k) Other topics identified by the reactor staff as relevant to the safe operation of the reactor in accordance with federal and state regulations

Any operator who misses a requalification meeting shall review the notes, handouts, presentations, and other material from the meeting within 30 days of the missed meeting; this shall be documented. The operator may not perform licensed activities until they review the materials and document their review.

4. Document Review

To comply with the 2020 Confirmatory Order V.F.2, annually each operator shall sign and date a form acknowledging that they have read, understand, and agree to the importance of adhering to procedures, ensuring that documents are complete and accurate, and the potential consequences for engaging in willful violations. The document shall specify that they agree to report physical or mental health conditions and any changes in conditions or treatment.

Annually each operator shall review the contents of the security SOP, per the Security Plan; this shall be documented.

Annually each operator shall review the Emergency Plan and Emergency Plan Implementation Procedures, per 10 CFR 55.59(c)(3)(iv); this shall be documented.

Information regarding significant changes to the facility, license, technical specifications, design, or procedural shall be routed to all operators in a timely manner, per 10 CFR 55.59(c)(3)(iv). This is normally done through a Procedure Changes and Notices (PCN). Operators shall document their understanding of the specified changes.

5. Licensed Duties

Each quarter each operator must actively perform the functions for which the operator is licensed for a minimum of four hours per 10 CFR 55.53(e). The Director shall maintain a list of those activities that count toward this requirement. Successfully passing an NRC exam for RO or SRO licenses satisfies the licensed hours requirement for that quarter.

Any operator who does not complete four hours in a quarter must spend six hours operating the reactor under the direction of a licensed operator before resuming licensed duties, per 10 CFR 55.53(f). Completing the six hours under instruction fulfills the licensed hours requirement for the quarter in which it occurs.

6. Reactivity Manipulations

Annually each operator shall perform a minimum of ten reactivity manipulations, per (see ANSI/ANS-15.4-2007 Section 6.2.4). The Director shall maintain a list of those operations that count toward this requirement. Successfully passing an NRC exam for RO or SRO licenses during the fourth quarter satisfies the reactivity manipulations requirement for that year.

Any operator who does not complete ten reactivity manipulations in a year must spend six hours operating the reactor under the direction of a licensed operator before resuming licensed duties. This does not replace the operator's need to complete ten reactivity manipulations in the new year.

7. Written Exam

Each operator shall pass a comprehensive written exam which generally follows the NRC format at least every 24 months (see 10 CFR 55.59(a)(2)). The written exam shall, to the extent possible, sample items in 10 CFR 55.41 and 10 CFR 55.43. Passing criteria shall be 70% in each section.

The written exam may either use an on-line random exam bank or be prepared by the Director or an SRO designated by the Director. The exam shall be proctored by an SRO.

Successfully passing a RO or SRO license exam administered by the NRC shall satisfy the written exam requirement for that biennial period.

Because the RRR does not have a separate training staff, an operator who prepares a written exam will be exempt from taking the written exam during that two-year

cycle, as allowed by 10 CFR 55.59(c)(7). This should only be one person each two-year cycle. The same person shall not be exempted for two consecutive cycles.

8. Operating Exam

Annually each operator shall pass an operating exam, per 10 CFR 55.59(a)(2). The operating exam may be administered in two sections. The operating exam shall, to the extent possible, sample items in 10 CFR 55.45. Passing criteria shall be 70% overall.

The operating exam shall be administered by the Director or an SRO designated by the Director.

Successfully passing a RO or SRO license exam administered by the NRC shall satisfy the operating exam requirement for that year.

Because the RRR does not have a separate training staff, an operator who prepares an operating exam will be exempt from taking the operating exam during that year, as allowed by 10 CFR 55.59(c)(7). This should only be one person each year. The same person shall not be exempted for two consecutive years.

9. Accelerated Requalification Program

Any operator who is deemed lacking in knowledge or skills to be a licensed operator shall be placed in an Accelerated Requalification Program, per 10 CFR 55.59(c)(4)(v). An operator shall be placed in Accelerated Requalification if they meet any of the following:

- A score of less than 70% on any section of the biennial written exam.
- A score of less than 70% on the annual operational exam.
- They are deficient in knowledge or skills in the opinion of the Director.

An operator who is in an Accelerated Requalification Program shall not perform duties that require a license except under the direction of a licensed operator, until they complete an Accelerated Requalification Program.

Each Accelerated Requalification Program shall be designed on a case-by-case basis by the Director (or designee) to ensure the operator can safely perform their licensed duties. It may include, but is not limited to, revising facility documentation, attending individual or group study sessions, attending or presenting at lectures on the areas of weakness, or tutorials.

10. Medical

Each operator shall pass a physical examination to determine their fitness to operate the reactor every 24 months, per 10 CFR 55.21.

Operators must inform the Director in writing immediately if they develop a permanent medical condition (e.g., corrective lenses, medications) that could affect their fitness to safely operate the reactor. The Director must notify the NRC within 30 days, per 10 CFR 50.74(c).

Operators must inform the Director in writing immediately if their existing physical or mental condition changes, or the medication for treating the condition is changed or stopped.

11. Other Requirements

Operators must comply with the conditions 10 CFR 55.53 even if they are not specifically stated in this Plan.

Operators must comply with the conditions of their license even if they are not specifically stated in this Plan (e.g., wearing corrective lenses while performing licensed duties).

Annual each operator shall participate in an Emergency Drill, per Reed's Emergency Plan.

Operator licenses expire six years from their effective date. To renew a license, an application (NRC Form 398 and 396) must be submitted to the NRC per 10 CFR 55.57.

Operators must inform the Director in writing immediately if they are convicted of a felony. The Director must notify the NRC within 30 days, per 10 CFR 55.53(g).

12. Records

All records relating to the requirements in this Plan shall be retained by the facility for at least three years following the termination of an operator's license. The records may be physical documents or electronic. Copies shall be provided to operators at their request.