

**University of Utah
Center for Excellence in Nuclear Technology
Engineering and Research
Reactor Operator Requalification Plan**

for
NRC License R-126: TRIGA Nuclear Reactor (Docket No. 50-407)

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I. Purpose

This document sets forth the requirements for the Reactor Operator Requalification Program for the University of Utah's TRIGA Research Nuclear Reactor (R126) in accordance with the 10CFR55.59. The purpose of the requalification training program is to ensure that all operations personnel maintain proficiency at a level equal to or greater than that required for initial licensing.

II. Schedule

A complete requalification training program will be offered biennially. The program consists of lectures, on the job training, and written, oral and console evaluations. The classroom retraining includes eight different lectures to be offered at least once during the biennium. The evaluations will be conducted annually. Each operator will be required to perform shift duties for at least four hours during each quarter.

Each operator licensee will complete the program biennially. The licensee will enter the requalification program on the date the Nuclear Regulatory Commission issues either a new license or a renewal of an existing license. The licensee will continue in the requalification program until either the expiration date of the current license or the date at which the current license is terminated.

III. Lectures

The lecture program will cover the following eight topics which will be offered at least once during the training period:

Topic:	<u>Reference*</u>
A. Nuclear Reactor Theory	Standard Nuclear Engineering Text
B. Radiation Control and Safety	10 CFR 20, RSP
C. Governing Regulations	10 CFR 19, 50, 55, 70
D. Reactor Design	SAR
E. Reactor Control and Safety Systems	SAR, AMF
F. Reactor Operating Characteristics	SAR, AEF
G. Normal, Abnormal and Emergency Operating Procedures	STL, SL, ML, CL, FL, EP, PSP
H. Technical Specifications and License	ATS, R-126 License

Each lecture will include a brief review of the last Reactor Safety Committee Meeting minutes with an emphasis on approved changes to CENTER procedures. All of the ML entries since the preceding lecture will also be reviewed. These frequent updates will ensure that all operators are properly informed of all CENTER activities. Any operator may be assigned to present a lecture.

* Lectures shall reference the following documents: Code of Federal Regulations (CFR), CENTER Safety Analysis Report (SAF), CENTER Authorization for Experimental Facilities (AMF), CENTER Administrative and Technical Specifications (ATS), CENTER Emergency Plan (EP) and the University of Utah Physical Security Plan (PSP), Radiation Safety Program (RSP), Surveillance Log (SL), Start-up and Termination Log and Procedures (STL), Core Log (CL), Maintenance Log (ML) and Fuel Log (FL).

IV. On the Job Training

- A. Each operator will perform licensed functions for at least four hours per quarter to satisfy 10CFR55.53(e).
- B. Each operator will demonstrate familiarity with the following activities at least once during the biennial period.
 - 1. Pre-start checks
 - 2. Start-up
 - 3. Termination
- C. Each Senior Reactor Operator will perform or directly supervise the completion of all the above activities with the same frequency required of an operator.

V. Evaluations

The ability of the operator to perform licensed duties will be determined by annual evaluation. The evaluations will include written and console examinations. These examinations may be administered in any order, at any time during the year and on different dates.

A. Written Examinations:

The written examination will be administered as an open book exam in a controlled area. The operators may only use the CENTER operator's manual as well as paper, pencils, erasers and calculators to complete the exam. The content of the examinations will satisfy the requirements of 10CFR55.41 and may include the requirements of 10CFR55.43. The Reactor Supervisor and the Facility Director will be responsible for preparing, administering and grading the written exam on an alternating yearly basis for all other licensed operators. The Director and the Reactor Supervisor will prepare, administer and grade each others written examinations biennially.

B. Console Examinations:

Each operator and Senior Reactor Operator will demonstrate familiarity with the following operator activities during the console examination:

- 1. Pre-start checks
- 2. Start-up
- 3. Operational Power
- 4. Termination

The console examinations are required only during those years in which reactor operation is possible. Console examinations may be evaluated by any Senior Reactor Operator. Every licensee will participate in the console examination.

C. Grading:

The criteria for grading and the assignment of pass/fail are as follows:

- 1. The Written Examination The licensee will be assigned a rating of either SATISFACTORY or UNSATISFACTORY. In order to obtain a rating of SATISFACTORY, the licensee must attain a minimum score of 70% in each section of the examination. If the licensee fails to attain a rating of

SATISFACTORY, that licensee will be removed from his or her licensed duties and enrolled in an accelerated training program in the deficient area or areas.

2. Console Examination The licensee will be assigned a rating of either SATISFACTORY or UNSATISFACTORY. In order to obtain a rating of SATISFACTORY, the licensee should demonstrate an understanding of the operation of all apparatus and mechanisms. This evaluation is based upon the ease and smoothness with which the operator performs the Pre-start, Start-up, power operation and termination. If the licensee fails to attain a rating of SATISFACTORY, the licensee will be removed from his licensed duties and enrolled in an accelerated training program in the deficient area or areas.

VI. Operator Reinstatement:

An operator may be removed from active status by failing to actively perform the functions of an operator for a period of more than three months or by failing to obtain a satisfactory grade on an evaluation exam. 10CFR55.53 (f) outlines the requirements for operator reinstatement.

If an operator has not actively performed the functions of an operator for a period of more than three months he or she shall satisfactorily demonstrate his competence before resuming his or her duties. This is accomplished by performing at least six hours of licensed functions under the direction of a licensed operator or Senior Reactor Operator. Upon completion of this activity, the operator will be certified for operation by the Reactor Supervisor.

If an operator has failed to attain a satisfactory grade on any evaluation, he or she shall demonstrate his competence before resuming his duties. This is accomplished by the operator participating in all additional training in the area of the deficiency.

VII. Records:

A record will be maintained for each licensee and will contain a current copy of either the licensee's Reactor Operator or Senior Reactor Operator's license, copies of all written examinations administered to the licensee during the requalification period or the licensee's requalification program progress checklist form CENTER-025 (see appendix.) This form will contain a record of attended lectures, on the job training, written and console examination evaluations, a record of operator reinstatement, and medical examination completion date. Additional forms may be kept in the licensee's record to provide supporting documentation and may include medical examination forms (10CFR55.53 (i)) and license applications or renewals.