

REACTOR OPERATOR REQUALIFICATION PROGRAM
FOR THE IDAHO STATE UNIVERSITY
REACTOR

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I. Purpose

This document sets forth the requirements for the Reactor Operator (RO) and Senior Reactor Operator (SRO) Requalification Program for Idaho State University's (ISU) AGN-201 Nuclear Reactor (Docket #50-284) in accordance with Title 10 of the Federal Code of Regulations Part 55.59 (10 CFR 55.59). 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 shall be offered biennially (every two years). The program consists of lectures, on the job training, written, oral, and console evaluations. The classroom retraining includes eight different lectures to be offered at least once during the biennium. The evaluations shall be conducted annually. Each operator shall be required to perform licensed functions for at least four hours during each quarter. The performance of licensed functions entails:

Performance of corrective maintenance (SRO).

- 1) Performance of preventive maintenance or surveillance (SRO).
- 2) Radiological work under the reactor license.
- 3) Preparing the facility to perform an experiment with the reactor.
- 4) Setting up an experiment with the reactor.
- 5) Reactor console run time.
- 6) Administering reactor console exams to senior reactor and reactor operators.

Each operator licensee shall complete the program biennially. The licensee shall enter the requalification program on the date the Nuclear Regulatory Commission issues a new license. The licensee shall 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. Lecture

The program shall include coverage of the following eight topics which shall be offered at least once during the requalification training period:

<u>Topic:</u>	<u>Reference:</u>
A. Nuclear Reactor Theory	Standard Nuclear Engineering Text.
B. Radiation Control and Safety	10 CFR 20 and 30, ISU Radiation Safety Manual.
C. Governing Regulations	10 CFR 19, 50, 55, and 70.
D. Reactor Design	Reactor Facility Study Material
E. Reactor Control and Safety Systems	Reactor Facility Study Material
F. Reactor Operating Characteristics	Reactor Facility Study Material
G. All Reactor Facility Procedures, Plans, Policies, and Rules.	O.P. #1, Emergency Plan, Physical Security Plan, M.P.'s, S.P.'s, abnormal procedures, etc.
H. Technical Specifications and License	Technical Specifications and Licensing

Each lecture shall include a brief review of the last Reactor Safety Committee Meeting Minutes with an emphasis on approved changes to the reactor facility procedures. All of the maintenance and surveillance procedure entries since the last lecture shall also be reviewed. The frequent updates shall ensure that the operators are current on all reactor facility activities. Any operator may be assigned to present a lecture.

IV. On the Job Training

- A. Each operator shall perform licensed functions for at least four hours per quarter to satisfy 10 CFR 55.53(e).
- B. Each operator shall demonstrate familiarity with the following activities at least once during the biennial period;
 - 1. Pre-Startup checks
 - 2. Startup
 - 3. Termination

This training shall be evaluated by any licensed operator.

- C. As a minimum, to demonstrate proficiency at manipulating the reactor facility controls, each operator will perform at least one complete Operating Procedure #1 (O.P. #1) Startup and Shutdown per quarter, provided that reactor operation is possible. Senior reactor operators may not take credit for their required O.P. #1 Startup and Shutdown per quarter by directing another operator in reactor facility manipulations. Operators may not take credit for their one required O.P. #1 Startup and Shutdown per quarter by directing an operator for the purposes of reinstatement or training of an Authorized Operator (AO).

V. Evaluations

The ability of the operator to perform licensed functions shall be determined through evaluations which shall be conducted annually. These evaluations shall include written, oral, 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 shall be administered as a closed book exam in a controlled area. The operators shall reference only retained knowledge and shall have only paper, pencils, erasers, and calculators to complete the exam. The content of the examinations shall satisfy the requirements of 10 CFR 55.41 and may include requirements of 10 CFR 55.43. The Reactor Supervisor (RS) and the Reactor Administrator (RA) shall be responsible to prepare, administer, and grade the written examination. The RS and the RA should alternate writing

the exam every year. Therefore, whoever writes the exam will be exempt from taking it that year. Neither RA or RS should be exempt from taking the examination in consecutive years.

B. Console and Oral Examinations

Each operator shall demonstrate familiarity with the following operator activities during the console and oral examinations:

1. Pre-Startup Checks,
2. Startup,
3. Operation at power, and
4. Termination.
5. Normal and Abnormal Circumstances

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 shall participate in the console examination.

C. Grading

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

1. Written Examination. The licensee shall be assigned a rating of either SATISFACTORY or UNSATISFACTORY. In order to obtain a rating of SATISFACTORY, the licensee shall attain a minimum score of 70% in each section of the examination. If the licensee fails to attain a rating of SATISFACTORY, the licensee shall be removed from his/her licensed duties and enroll in an accelerated training program in the deficient area.
2. Console and Oral Examinations. The licensee shall be assigned a rating of either SATISFACTORY or UNSATISFACTORY. In order to attain a rating of SATISFACTORY, the licensee should demonstrate an understanding of the operation of all apparatus and mechanisms. Also, the operator shall be able to properly operate the reactor under normal and abnormal circumstances. This is evaluated through the ease and smoothness the operator preforms the prestart checks, startup, power operation, and termination. If the licensee fails to attain a rating of SATISFACTORY, the licensee shall be removed from his/her licensed duties and enrolled in an accelerated training program in the deficient area.

VI. Operator Reinstatement

An operator may be removed from active status by failing to actively preform the functions of an operator during any calendar quarter or by failing to attain a satisfactory grade on an evaluation exam. The calendar quarters are as follows: January through March, April through June, July through September, and October through December. 10 CFR 55.53(f) outlines the requirements for operator reinstatement.

If an operator has not actively performed the functions of an operator during a calendar quarter, he/she shall satisfactorily demonstrate his/her competence before resuming his/her licensed functions. This is accomplished by performing at least six hours of licensed functions, including at least one O.P #1 Startup and Shutdown, under the direction of a licensed operator. Upon completion of this activity, the operator shall be certified for operation by the Reactor Supervisor.

If an operator has failed to attain a satisfactory grade on any evaluation, he/she shall demonstrate his/her competence before resuming his/her duties. This is accomplished through participation in additional training in the area of deficiency. Upon completion of the training, the operator shall be certified for operation by the Reactor Supervisor after successfully completing another evaluation in the area of deficiency.

VII. Records

Operator Requalification tracking shall be maintained through a number of logs and forms. Lecture attendance shall be maintained on the Requalification/Training Lecture Forms. Each operator will record their performance of licensed functions upon completion on the Individual Operator Licensed Function Tracking Form. The annual written examination key shall be kept as part of the Operator Requalification records.

A record shall be maintained for each licensee and shall contain a current copy of the licensee's reactor operator license, copies of all written examinations administered to the licensee during the requalification period, the medical examination form from the licensee's last medical exam, and the licensee's Requalification Program Progress Checklist.

The checklist shall contain the record of attended lectures, on the job training, written and console examination evaluations, a record of operator reinstatement, medical examination completion date, and medical examination due date. Additional forms may be kept in the licensee's record to provide supporting documentation and may include license applications and renewal.

ISU AGN-201M NUCLEAR REACTOR REQUALIFICATION PROGRAM PROGRESS CHECKLIST

Operator: _____ License #: _____

License Effective Date: ____/____/____ License Expiration Date: ____/____/____

Training Period (2 years): Beginning: ____/____/____ Ending: ____/____/____

<u>Lecture Program</u>	<u>Date</u>	<u>Instructor (Print, Signature)</u>
1. Nuclear Reactor Theory	____/____/____	_____
2. Radiation Control and Safety	____/____/____	_____
3. Governing Regulations	____/____/____	_____
4. Reactor Design	____/____/____	_____
5. Reactor Control and Safety Systems	____/____/____	_____
6. Reactor Operating Characteristics	____/____/____	_____
7. All Reactor Facility Procedures, Plans, Policies, and Rules	____/____/____	_____
8. Technical Specifications and License Conditions	____/____/____	_____

On the Job Training:

LICENCED FUNCTIONS

	<u>Date</u>	<u>Hours</u>	<u>Date</u>	<u>Hours</u>	<u>Date</u>	<u>Hours</u>	<u>Total</u>
Qtr. 1	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 2	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 3	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 4	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 5	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 6	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 7	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
Qtr. 8	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____
	____/____/____	_____	____/____/____	_____	____/____/____	_____	_____

Evaluations: (SAT/NOT SAT)

Written: Year One Date: ___/___/___ Evaluation: _____ Examiner: _____
Year Two Date: ___/___/___ Evaluation: _____ Examiner: _____

<u>Console Year One:</u>	<u>Date</u>	<u>Examiner</u>	<u>Evaluation</u>
1. Prestart Checks	___/___/___	_____	_____
2. Reactor Startup	___/___/___	_____	_____
3. Power Operation	___/___/___	_____	_____
4. Termination	___/___/___	_____	_____

<u>Console Year Two:</u>	<u>Date</u>	<u>Examiner</u>	<u>Evaluation</u>
1. Prestart Checks	___/___/___	_____	_____
2. Reactor Startup	___/___/___	_____	_____
3. Power Operation	___/___/___	_____	_____
4. Termination	___/___/___	_____	_____

Operator Reinstatement:

Failure to complete calendar quarter licensed functions requires certification for operation by the Reactor Supervisor (RS). This accomplished by serving 6 hours of supervised licensed functions and performing on O.P. #1 Startup and Shutdown.

Quarter: _____ Date: ___/___/___ RS: _____

Quarter: _____ Date: ___/___/___ RS: _____

Quarter: _____ Date: ___/___/___ RS: _____

An unsatisfactory grade in the evaluations require certification for operation by the Reactor Supervisor (RS). This is accomplished through additional training.

Topic: _____ Date: ___/___/___ RS: _____

Topic: _____ Date: ___/___/___ RS: _____

Topic: _____ Date: ___/___/___ RS: _____

Medical Examination Completion Date: ___/___/___

Medical Examination Due Date: ___/___/___