

# NRL OPERATING PROCEDURES

Administrative Procedure

AP-09

RO/SRO Requalification

## I. SCOPE:

This instruction outlines the requirements for requalifying RO's and SRO's at the OSU-NRL.

## II. DISCUSSION:

The RO/SRO requalification program is designed to demonstrate RO/SRO competence and to satisfy the requirements of 10CFR55.53 and 10CFR55.59. For the purpose of this procedure RO shall refer to any licensed Reactor Operator, SRO shall refer to any licensed Senior Reactor Operator, and Operator shall refer to any licensed operator, reactor, or senior reactor.

## III. REFERENCES:

- A. 10CFR55.53
- B. 10CFR55.59
- C. AP-07 Review of Procedures
- D. AP-10 OSURR Console Operating Experience
- E. ANSI/ANS-15.4-1977 Selection and Training of Personnel for Research Reactors.
- F. NRC Generic Letter No. 84-06 Operator and Senior Operator License Examination for Passing Grade (To All Non-Power Reactor Licensees)
- G. NRC Information Notice No. 88-40 Examiners' Handbook for Developing Operator Licensing Examinations.
- H. Rev. 6 to Examiner Standards 4/5/90.

## IV. PRECAUTIONS:

To maintain an active Operator's License at the OSU-NRL one shall:

- A. Be the console operator at least once every three months and operate a total of at least 4 hours or complete SRO duties for at least 4 hours. (10CFR 55.53e)

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- B. Complete the OSU-NRL Annual Requal Exam successfully and in a timely manner (within 30 days after it is administered to other operators).
- C. Renew one's NRC License every six years in a timely manner.
- D. Review changes to the Facility License, Technical Specifications, Procedures, Emergency Plan, Security Plan, Facility Design Changes, NRC Notices, and other important Reactor related material in a timely manner. The review of these changes and documents shall be accomplished and verified by following NRL Procedure AP-07 "Review of Procedures."
- E. Complete a biennial medical examination.

V. PROCEDURES:

A. INTRODUCTION

The Operator Requalification Program is designed to demonstrate Operator and Senior Operator competence, and to satisfy the requirements of 10CFR55.93(c)(2) for license renewal. The Program embodies the substance of 10CFR55 Appendix A, including provisions for an annual written examination, a structured lecture and study program, on the job training and evaluation of licensees, and a records maintenance system.

During each calendar year, a comprehensive written examination shall be administered to all licensed personnel having regular operational responsibility at The Ohio State University Nuclear Reactor Laboratory (NRL). This exam shall be of a complexity equivalent to the examination given at this facility by the examiners from the NRC.

Subsequent to determining any deficiencies indicated by the comprehensive examination, a retraining program will be initiated which consists of a combination of pre-planned lectures, self-study by the licensee, tutoring of the licensee, and appropriate examination on the material covered. The final selection of the combination of retraining sessions, will depend upon the performance of the licensee on the written examination.

All study materials used in the Program shall be reviewed to assure they remain current. Study materials shall be collected and made available to all licensees throughout the year.

## B. PROGRAM ADMINISTRATION AND REVIEW

The Associate Director of the NRL shall serve as the Training Coordinator, and shall be responsible for the implementation, coordination, and operation of the Operator Requalification Program. He will prepare, administer, grade, and review all examinations and quizzes required by the Program. In this capacity, and since he is a licensed Senior Operator, he will be considered as having completed the examinations and retraining program requirements.

## C. COMPREHENSIVE ANNUAL WRITTEN EXAMINATION

1. The comprehensive annual written examination (Exam) given to all licensed personnel, will include questions taken from:

- A. Principles of Reactor Operation
- B. Features of Facility Design
- C. General Operating Characteristics
- D. Instruments and Controls
- E. Safety and Emergency Systems
- F. Standard and Emergency Operating Procedures
- G. Radiation Control and Safety
- H. Reactor Theory
- I. Radioactive Materials Handling, Disposal and Hazards
- J. Specific Operating Characteristics
- K. Fuel Handling and Core Parameters
- L. Administrative Procedures, Conditions, and Limitations.

2. The Exam for Reactor Operator licensees shall be on topics A through G. The Exam for Senior Reactor Operator licensees shall consist of questions taken from topics B, D, E, F, and H through L.

3. The Exams will be graded, reviewed and retained at the NRL. For each licensee, a review form will be prepared indicating his grade in each Exam category. The areas of deficiency and the retraining to be followed in improving the licensee's competence in that area will then be determined. A grade below 70% in a single category shall require retraining for that licensee in that area of deficiency. An overall score below 70% on the Exam shall require that:

A. Prior to continuing his responsibilities of operation of the OSURR, the licensee shall be given an oral exam to verify competence as a console operator, and

B. The licensee shall be immediately enrolled in a retraining program.

#### D. RETRAINING PROGRAM

1. The Retraining Program shall consist of an appropriate series of:

- a. Pre-planned lectures,
- b. Self-study of reference materials, and
- c. Tutoring sessions,

as may be indicated to correct deficiencies noted during review of the written Exams. Quizzes will be given during the retraining period on the topics being covered. These quizzes shall meet the general criteria outlined for the Comprehensive Annual Written Examinations, as indicated previously, and will be graded and included in the licensee's file. In cases requiring retraining, a program will be organized, implemented, and conducted within a period of 90 days.

#### E. REACTOR OPERATION (Performance)

One reactor operation of each year for each licensee shall be devoted to operator requalification. The Training Coordinator shall be present in the control room during all reactivity control manipulations associated with the operation, and shall evaluate the Operator's performance, competence, knowledge of the reactor system, and knowledge of operating and emergency procedures. If deficiencies are noted, a retraining program will be organized, implemented and conducted within a period of 90 days.

A monthly review shall be performed to assure that each licensee has participated in at least one reactor operation during each three month period.

#### F. RETRAINING STUDY MATERIALS

A complete set of study and reference materials shall be provided for use by the licensees. It shall be the responsibility of the Training Coordinator to perform an annual review of the contents of these reference materials to ensure they are adequate and accurately reflect operations, conditions, and design characteristics of the facility. As a minimum, these materials shall include:

1. A suitable general reference text on reactor physics
2. Copies of the operating procedures for the NRL
3. Copies of the Technical Specifications for the OSURR
4. Copies of emergency procedures for the facility
5. Copies of the Reactor Description and Hazards Summary Report
6. Copies of 10CFR19, 20, 50, 55, and 70.
7. Reference material on Health Physics principles and techniques.

#### G. SPECIAL CONDITIONS

1. A licensee who does not participate in reactor operation for three or more months, shall be given an oral examination on facility and procedure changes, and shall perform a reactivity manipulation under the observation of a Senior Operator before being re-assigned regular operational duties at the facility, provided he is up to date on the comprehensive annual written examination. The results of the oral and performance examination provide the basis for recertification of competence to the NRC, as required by 10CFR55.53(f). Results of these examinations shall be retained in the licensee's file.
2. Successful completion of the initial NRC licensing examination shall be considered to satisfy the licensee's annual retraining requirements. Such an individual's retraining program should be started with the next Exam scheduled at least 6 months after the licensee's initial licensing date.

3. A licensee who does not complete the annual exam in a timely manner (within 30 days of the date it is administered to other operators) shall not be allowed to operate until the exam is successfully completed and graded.
4. Serious deficiencies in either the written exam (< 55% overall) or performance evaluation may result in removal of certification until retraining is successfully completed.

#### H. RECORDS

These records shall be retained at the NRL for a period of five years:

1. All Exams, quizzes, and required re-examinations, which were taken by the licensee during each of the requalification periods
2. The examination review sheets filled out at the conclusion of the Exam and after any indicated re-exams. There will also be an evaluation sheet completed for each performance exam.
3. Summaries of control manipulations for licensees involved in the requalification program (See AP- 10)
4. Certification that each licensee has reviewed changes in the facility license, design, and procedures. (See AP-07)

#### VI. ATTACHMENTS:

- A. Exam Summary Sheets

THE OHIO STATE UNIVERSITY RESEARCH REACTOR  
 REACTOR OPERATOR ANNUAL COMPREHENSIVE  
 REQUALIFICATION EXAMINATION

DATE \_\_\_\_\_

PRINT NAME \_\_\_\_\_

Read each question carefully. If a question seems ambiguous, define your interpretation and list any assumptions you must make. Show all steps leading to a concluding answer to obtain partial credit. Use lined white paper for your answer sheets.

CATEGORY	TOTAL CATEGORY POINTS	% OF TOTAL (BY PARTS)	RO'S SCORE	% OF CAT. PTS.
PART I				
A. Principles of Reactor Operation	10.0	14.3	_____	_____
B. Features of Facility Design	10.0	14.3	_____	_____
C. General Operating Characteristics	10.0	14.3	_____	_____
D. Instruments and Controls	10.0	14.3	_____	_____
E. Safety and Emergency Systems	10.0	14.3	_____	_____
F. Standard and Emergency Operating Procedures	10.0	14.3	_____	_____
G. Radiation Control and Safety	10.0	14.3	_____	_____
TOTAL	70.0	100.0	_____	_____

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THE OHIO STATE UNIVERSITY RESEARCH REACTOR  
SENIOR REACTOR OPERATOR ANNUAL COMPREHENSIVE  
REQUALIFICATION EXAM

DATE \_\_\_\_\_

PRINT NAME \_\_\_\_\_

Read each question carefully. If a question seems ambiguous, define your interpretation and list any assumptions you must make. Show all steps leading to a concluding answer to obtain partial credit. Use lined white paper for your answer sheets.

CATEGORY	TOTAL CATEGORY POINTS	% OF TOTAL (BY PARTS)	SRO'S SCORE	% OF CAT.PTS.
PART I				
B. Features of Facility Design	10.0	11.1	_____	_____
D. Instruments and Controls	10.0	11.1	_____	_____
E. Safety and Emergency Systems	10.0	11.1	_____	_____
F. Standard and Emergency Operating Procedures	10.0	11.1	_____	_____
PART II				
H. Reactor Theory	10.0	11.1	_____	_____
I. Radioactive Materials Handling, Disposal, and Hazards	10.0	11.1	_____	_____
J. Specific Operating Characteristics	10.0	11.1	_____	_____
K. Fuel Handling and Core Parameters	10.0	11.1	_____	_____
L. Administrative Procedures, Conditions, and Limitations	10.0	11.1	_____	_____
TOTAL	90.0	100.0	_____	_____

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