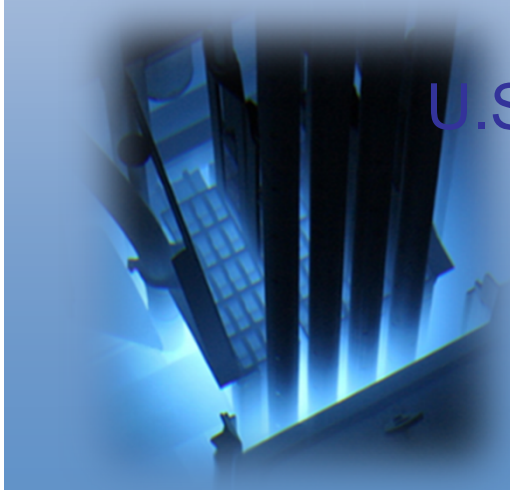




Overview of Operator Licensing Examination for Research and Test Reactors

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Research Reactors Staffing

Small Operation Staff <5

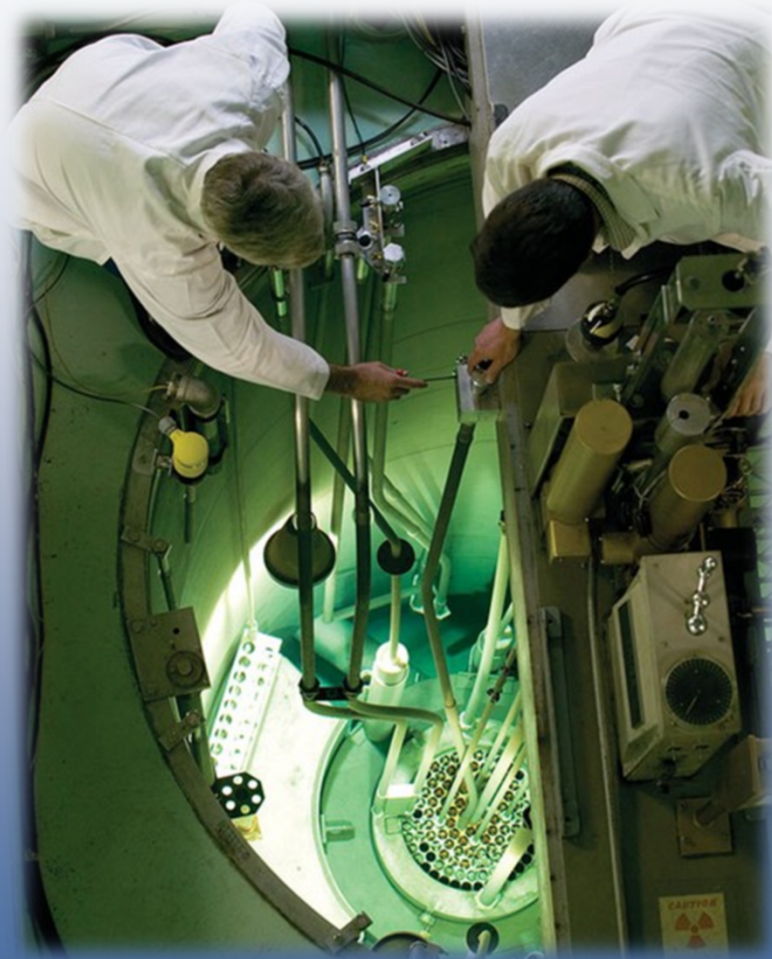
- Reactor Director (SRO)
- 1 or 2 reactor operators

Large Operation Staff 20 or more

- Director, Reactor Manager
- Operations Staff (SROs + ROs)
- Engineering & Maintenance
- Administration

Outside Support

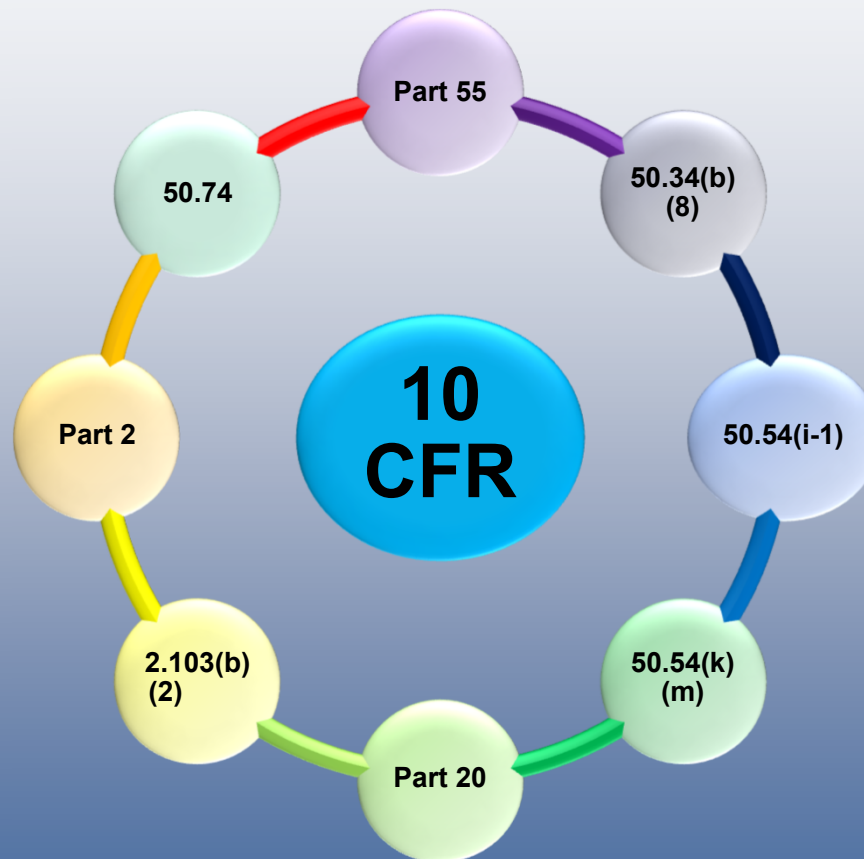
- RSO/HP Technician
- Administrative Services
- Human Resources
- Contracts / Purchasing





US NRC OPERATOR LICENSING

APPLICABLE REGULATIONS AND PUBLICATIONS





Operator Licensing Examiner Standards for Research Reactors

Instructions for reviewing operator license applications

Identifies the experience, training, education, and certification requirements. – *ANS 15.4 - Selection and Training of Personnel for RTRs*

Procedure for developing written examinations & operating tests
Content of the examination depends upon type of license and type of facility

Procedure for administering written examination & operating tests.
Grading of exams making pass/fail recommendations

Evaluation of facility's requalification program



Initial License Application

Applicants must submit NRC Form 398 and an NRC Form 396

Licensee senior management must certify that applicant has completed the training required for the desired license level

Eligibility

ANSI/ANS-15.4

Medical Requirements

ANSI/ANS 3.4-1983

ANSI/ANS 3.4-1996

ANSI/ANS 15.4



Initial License Application

Eligibility: Reactor Operator

Training

- Sufficient design and content to ensure safe operation of the facility
- Topics identified ANSI/ANS-15.4 (also identified in CFR).
- Operation of the reactor and its systems. A minimum of five significant changes in reactivity or power level (10 CFR 55.31(a)(5))

Education

- High school diploma or an equivalency certificate

Eligibility: Senior Reactor Operator

Experience

- applicant should have a minimum of 3 years of nuclear experience. Two years of full-time academic training may be substituted for 2 years of experience



Written Examination

Include a representative selection of questions on the knowledge and abilities needed to perform licensed duties at the applicable facility and at the exam level

Written Examination for RO: 10 CFR 55.41; for SRO: 10 CFR 55.43

Category A	<ul style="list-style-type: none">• <i>Reactor Theory</i>• <i>Thermodynamics</i>• <i>Facility Operating Characteristics</i>
Category B	<ul style="list-style-type: none">• <i>Normal and Emergency Operating Procedures</i>• <i>Radiological Controls</i>
Category C	<ul style="list-style-type: none">• <i>Facility and Radiation Monitoring Systems</i>

Minimum number of questions contained in each category varies from 10 to 20 questions depending upon complexity of the reactor facility.



Operating Test

Demonstrate understanding and ability to perform 13 items identified in 10 CFR 55.45(a). For example:

Perform pre-startup procedures for the facility

Operate the facility between shutdown and designated power levels

Identify alarms/instrument malfunctions and perform remedial action

Perform control manipulations during normal, abnormal, and emergency situations.

Describe the use and function of the facility's radiation monitoring systems & display knowledge of significant radiation hazards

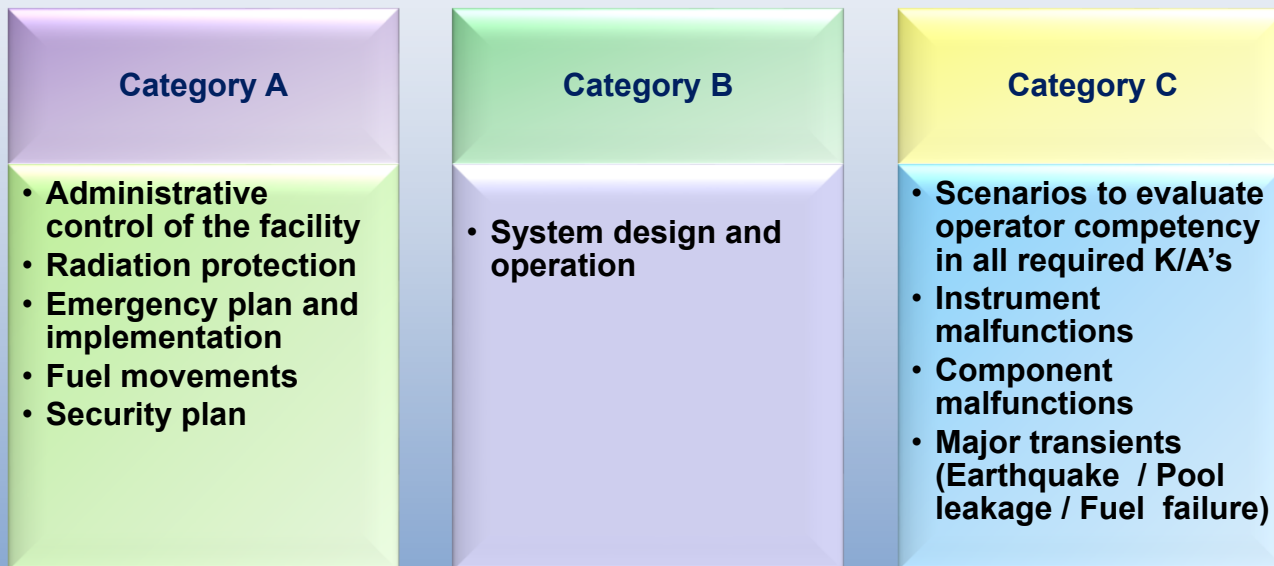
Display knowledge of the fuel handling procedures

Display knowledge of the emergency plan



Operating Test

Divided into three major categories:



All applicants must perform a reactor startup.



Examination Report

documents the results of the examination, including generic strengths and weaknesses

include a copy of the written examination with the answer key

License
OR
Denial letter issued





Requalification Examination

(10CFR55.59)

Required to be conducted for continuous period not to exceed 24 months in duration

Must include a comprehensive requalification written examination and an annual operating test

Requalification programs are site specific with respect to the number and topics of lectures to be covered in the program. Formal classes, labs, self study or meeting attendance may be required

Medical examination required every 2 years

