

From: Patrick Boyle
Sent: Friday, November 18, 2022 9:48 AM
To: thomas.newton@nist.gov; Dimeo, Robert M. (Fed); Strader, Randolph (Fed); Seiter, Jacob A. (Fed)
Cc: Josh Borrromeo; Patrick Boyle; Travis Tate; John Nguyen; Cindy Montgomery
Subject: Request for Additional Information Regarding NIST's Proposed Revision to the Reactor Operator Requalification Plan
Attachments: NIST Requalification Plan RAIs.docx

Dear Dr. Newton,

By letters dated June 2, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML21153A396, ML21153A397, and ML21153A398), as supplemented by letter dated August 11, 2022 (ML22223A146), the National Institute of Standards and Technology (NIST), Center for Neutron Research (NCNR or licensee) submitted proposed changes to the Reactor Operator Requalification Plan.

The U.S. Nuclear Regulatory Commission staff is reviewing your submittal and determined that additional information is required to complete the review.

A request for additional information (RAI) is attached. The attachment includes the NRC staff's evaluation of the acceptance criteria used for a review the plan, along with the findings and the RAI items. The draft RAI was discussed with your staff to ensure that the content was understandable and the regulatory basis for the question was clear.

Based on an email response from Dr. Newton on November 18, 2022, a response to the attached RAI is requested within 90 days from the date of this email.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-3936 or Patrick.Boyle@nrc.gov

Patrick Boyle
Project Manager
NRR/DANU/UNPL
U.S. Nuclear Regulatory Commission

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Operator Requalification Plan

Criteria for Requalification Plans

55.4	The plan should provide basic definitions for the requalification plan.	RAI-1
55.59(a)(1)	Program duration should not exceed 24 months.	√
55.59(c)(2)	Lectures should be pre-planned and given on a regular and continuing basis.	RAI-2
55.59(c)(2)	Topics should follow those listed in 55.59(c)(2) at a minimum	√ See Note 1
55.59(c)(3)(i)	On-the job training should ensure each operator: performs a minimum of facility manipulations	RAI-3
55.59(c)(3)(ii)	understands the operation of apparatus and mechanisms associated with control manipulations and knows the operating procedures	RAI-3
55.59(c)(3)(iii)	is cognizant of changes in facility design, procedures and license	RAI-3
55.59(c)(3)(iv)	reviews the contents of all abnormal and emergency procedures on a regularly scheduled basis.	RAI-3
55.59(c)(4)	The plan should include provision for evaluating the operators, including written examinations, observation and evaluation of operator performance, and simulation of emergency or abnormal conditions.	RAI-5
55.59.a.2(i): 55.41/55.43	Written examinations should determine the operators' knowledge of subjects covered in the plan. They should determine where additional training is needed. The examination should contain a sample of items specified in 10CFR55.41 for ROs and 10CFR55.43 for SROs.	√
55.59.a.2(ii): 55.45(2)(2-13)	Operating tests should require the operator to demonstrate an understanding of and the ability to perform actions necessary for a sample of the items specified in 10CFR55.45(2)(2-13) as appropriate to the facility and the license level.	√
55.59(c)(4)(iv)	Plan should include systematic observation and evaluation by supervisors of the performance and competency of operators as specified in 10CFR55.59(c)(4)(iv)	√
ANSI 15.4 Section 6.2	The plan should discuss acceptable performance on examinations and tests. Operator must score a minimum of 70% to pass written examinations. Minimum acceptable performance on operating tests should be determined and documented before testing begins.	√

Operator Requalification Plan		
55.59(c)(4)(v)	The plan should discuss provisions for accelerated requalification if performance evaluations indicate the need. This includes the status of the operator during retraining, the form retraining will take, and the acceptance criteria to complete training.	√
55.59(c)(5)	The plan should discuss maintenance of records according to requirements of 10CFR55.59(c)(5).	√
55.53(e)	The plan should discuss requirements for operators to maintain active status. At a minimum, operators should actively perform the functions of a reactor operator or senior operator for 4 hours per calendar quarter.	RAI-6
55.53(f)	The plan should discuss requirements for inactive operators to return to active status. At a minimum, the requirements should meet those discussed in 10CFR55.53(f).	RAI-7
55.21, ANSI 15.4, and ANSI 3.4	The plan should discuss medical examination requirements for each operator and evaluation as part of the requalification program.	√

Note 1: 10CFR55.59.c(7), "*Applicability to research and test reactor facilities.* To accommodate specialized modes of operation and differences in control, equipment, and operator skills and knowledge, the requalification program for each licensed operator and senior operator of a research reactor or test reactor facility must conform generally but need not be identical to the requalification program outlined in paragraphs (c) (1) through (6) of this section. Significant deviations from the requirements of paragraphs (c) (1) through (6) of this section will be permitted only if supported by written justification and approved by the Commission."

Request for Additional Information

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the NCNR Reactor Operator Requalification Plan (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML21153A396, ML21153A397, and ML21153A398), as supplemented by letter dated August 11, 2022 (ADAMS Accession No. ML22223A146). The staff identified additional information needed to continue its review of the plan, as described in the enclosed request for additional information (RAI).

1. The regulation at 10 CFR 55.4, "Definitions", states:

Actively performing the functions of an operator or senior operator means that an individual has a position on the shift crew that requires the individual to be licensed as defined in the facility's technical specifications, and that the individual carries out and is responsible for the duties covered by that position.

NRC staff did not find the above definition enclosed in the plan. Add the definition to the plan or justify why no change is needed.

2. The regulation, 10 CFR 55.59(C)(2), "Lecture", states:

The requalification program must include preplanned lectures on a regular and continuing basis throughout the license period in those areas where operator and senior operator written examinations and facility operating experience indicate that emphasis in scope and depth of coverage is needed in the following subjects:

- (i) Theory and principles of operation.
- (ii) General and specific plant operating characteristics.
- (iii) Plant instrumentation and control systems.
- (iv) Plant protection systems.
- (v) Engineered safety systems.
- (vi) Normal, abnormal, and emergency operating procedures.
- (vii) Radiation control and safety.
- (viii) Technical specifications.
- (ix) Applicable portions of title 10, chapter I, Code of Federal Regulations.

NRC staff did not find the specified lectures enclosed in the plan. Add the lectures to the plan or justify why no change is needed.

3. The regulation, 10 CFR 55.59(C)(3), On-the-job training, provides detailed requirements as follows:

- 55.59(c)(3)(i), On-the job training should ensure each operator: performs a minimum of facility manipulations
- 55.59(c)(3)(ii), understands the operation of apparatus and mechanisms associated with control manipulations and knows the operating procedures
- 55.59(c)(3)(iii), is cognizant of changes in facility design, procedures, and license
- 55.59(c)(3)(iv), reviews the contents of all abnormal and emergency procedures on a regularly scheduled basis.

NRC staff did not find the specified on-the-job training enclosed in the plan. Add the on-the-job training to the plan or justify why no change is needed.

4. The regulations, 10 CFR 55.59.a.2(ii) and 10 CFR 55.45(2)(2) through (2)(13), Operating Tests, require the operator demonstrate an understanding of and the ability to perform actions necessary for a sample of the items specified in 10CFR55.45(2)(2-13) as appropriate to the facility and the license level.

NRC staff did not see the completed items described in the plan in accordance with 10CFR55.45(2)(2-13). Provide additional items to the plan or justify why no change is needed.

5. The regulations, 10 CFR 55.59(c)(4)(i) through (c)(4)(iv), require the requalification program to include evaluations for licensed operators, to include: comprehensive biennial written examinations and annual operating tests to determine where retraining is necessary, written examinations for evaluating knowledge of abnormal and emergency procedures, systematic observation and evaluation by supervisors of performance and competency, and accelerated requalification if evaluations indicate the need.
NRC staff noted that the plan only provided the evaluations of written examinations but did not describe how the NCNR evaluates the operating test for licensed operators. Provide additional evaluation to the plan or justify why no change is needed.
6. The regulation, 10 CFR 55.53(e), requires the plan should discuss requirements for operators to maintain active status. At a minimum, operators should actively perform the functions of a reactor operator or senior operator for 4 hours per calendar quarter.
NRC staff did not see the requirement for operators to actively perform the functions for 4 hours per calendar quarter. Provide additional requirement to the plan or justify why no change is needed.
7. The regulation, 10 CFR 55.53(f), discusses requirements for inactive operators to return to active status. At a minimum, operators should actively perform the functions of a reactor operator or senior operator for 6 hours per calendar quarter.
NRC staff did not see the requirement for operators at a minimum to actively perform the functions of a reactor operator or senior operator for 6 hours per calendar quarter. Provide additional requirement to the plan or justify why no change is needed.