NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
U.S. DEPARTMENT OF COMMERCE

June 18, 2025

ATTN: Justin Hudson
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: NIST Submission of Training Plan to Reinstate Licensed Operators to Active Status per 10 CFR 55.59(b)

Ref: NBSR Facility License TR-5, Docket 50-184

Dear Mr. Hudson:

In accordance with 10 CFR 55.59(b), the National Institute of Standards and Technology (NIST) is submitting a training plan to support the reinstatement of licensed operators to active status at the NBSR.

The NIST reactor has been in an extended outage since the core was off-loaded in August 2024, precluding normal licensed operations. During this period, the operations staff have been actively engaged in maintenance activities, including efforts to remove debris from the reactor vessel resulting from the February 3, 2021, fuel failure event. While these activities involve frequent use of facility systems and equipment, they do not meet the requirements of 10 CFR 55.59(a)(1) and (2) for maintaining an active license status.

Attached to this letter is a detailed training and evaluation plan that outlines the requalification activities to be conducted within reactor operations. It also specifies the documentation and performance metrics that will be submitted to the NRC under the provisions of 10 CFR 55.59(b).

THOMAS NEWTON
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Thomas Newton
Chief, Reactor Operations and Engineering
NIST Center for Neutron Research

Enclosures

Enclosure 1
Requalification Training Plan Summary – NIST TR-5 Reactor

1. Classroom Training and Examinations
To ensure foundational knowledge is restored and current procedural updates are understood, all licensed operators will complete the following classroom training activities:

- **Lecture Series**
  - Conducted twice weekly (March–June 2025).
  - Topics include reactor theory, systems, administrative controls, abnormal/emergency procedures, and NRC regulatory requirements.
  - Compliant with 10 CFR 55.59(c)(2).
  - A full listing of lecture topics is included in enclosure 2.
- **Review Examination**
  - Written review exam covering lecture topics.
  - Administered upon completion of the lecture series in June 2025.
- **Facility Modification Training**
  - Covers new or modified systems and work processes:
    - Radiation monitoring systems
    - Noise monitoring systems
    - Administrative and procedural changes
  - Required prior to reactor startup.
- **Requalification Written Examination**
  - Developed and administered per 10 CFR 55.59(c)(2)(i) and NUREG-1478.
  - Examination will be reviewed by NRC prior to administration.
  - Completion required before reactivation of licenses.

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2. Pre-Startup On-the-Job Training (OJT)
This phase emphasizes the reestablishment of a strong operational training culture and evaluates the effectiveness of training execution at the crew level.

- **Structured Watch standing**
  - Beginning May 2025, non-licensed operators perform supervised watch standing assignments.
  - SROs provide oversight and coaching.
- **Crew Drills and Operational Scenarios**
  - Scenario-based training conducted during assigned duty rotations.
  - Includes abnormal and emergency conditions.
  - Evaluated by Training Program staff.
- **Refueling Proficiency Training**
  - Hands-on instruction and evaluation in support of reactor core loading.
  - Activities include fuel movement, verification, refueling system operation, and vessel inspection.
  - Supervised by active SROs and the Training Program.
- **Board-Level Facility Walkthrough Examinations**
  - Conducted for each operator in accordance with NUREG-1478.
  - Deadline for completion: September 1, 2025.
- **Establish Crew Training Standards**

    - Duty crews will be assessed on their role in fostering and maintaining effective on-the-job training habits.
    - Evaluation criteria include mentorship engagement, procedural adherence, and peer development.

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3. Post-Startup On-the-Job Training (OJT)

Following reactor startup, operational training continues over a six-week period to reinforce habits developed during the pre-startup phase.

- **Steady-State Operations Training**
    - Operators conduct routine reactor operations, surveillance tests, and power maneuvers during shiftwork.
- **Integrated Training Scenarios**
    - Operational scenarios embedded into real-time conditions to evaluate situational response and procedural execution.
- **Performance Evaluation**
    - Ongoing assessments conducted by the Training Program and SROs.
    - Focus on procedural compliance, decision-making, and team coordination.
- **Requalification Operating Examination**
    - Developed and administered per 10 CFR 55.45 and NUREG-1478.
    - Examination will be observed by NRC for select operators.
    - Completion required before reactivation of licenses.

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4. Evaluation and Remediation

- All training modules will include defined knowledge- and performance-based criteria in accordance with 10 CFR 55.59(c)(4).
- Operators who do not meet requirements will complete remedial training and be re-evaluated prior to further licensed activity.

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5. Documentation and Recordkeeping

- NIST will maintain complete documentation for all training, evaluations, and exam results per 10 CFR 55.59(c)(5).
- These records will be submitted to the NRC as part of the requalification support package and retained per NRC requirements.

Enclosure 2
List of classroom lecture topics.

Date	Training Topic
3/18/2025	Radiation Detection
3/25/2025	Ventilation
3/27/2025	Radiation Detection
4/1/2025	Emergency Cooling
4/3/2025	Ventilation
4/8/2025	Confinement
4/10/2025	Emergency Cooling
4/15/2025	NRC Regs
4/17/2025	Confinement
4/22/2025	Health Physics
4/24/2025	NRC Regs
4/29/2025	Confined Space
5/1/2025	Health Physics
5/6/2025	Secondary Cooling
5/8/2025	Confined Space
5/13/2025	Emergency Instruction
5/15/2025	Secondary Cooling
5/20/2025	Refueling
5/22/2025	Emergency Instruction
5/27/2025	Safety System
5/29/2025	Refueling
6/3/2025	Training Review
6/5/2025	Safety System
6/10/2025	Training Review
6/12/2025	Training Review Exam
6/17/2025	Training Review Exam
6/24/2025	Reactor Theory
6/27/2025	Optional Reactor Theory Session
7/1/2025	Reactor Theory
7/3/2025	Optional Reactor Theory Session
7/8/2025	Reactor Theory
7/10/2025	Optional Reactor Theory Session
7/15/2025	Break/Remedial
7/22/2025	Facility Changes
7/24/2025	Optional Facility Changes Session
7/29/2025	Facility Changes
7/31/2025	Optional Facility Changes Session

8/5/2025	Facility Changes
8/7/2025	Optional Facility Changes Session
8/12/2025	Break/Remedial
8/19/2025	New Procedure Training
8/21/2025	New Procedure Training
8/26/2025	New Procedure Training
8/28/2025	New Procedure Training
9/2/2025	New Procedure Training
9/4/2025	New Procedure Training