

October 7, 1998

SCHOOL OF
ENGINEERING & APPLIED SCIENCE



DEPARTMENT OF MECHANICAL, AEROSPACE
AND NUCLEAR ENGINEERING

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Subject: NRC Request for Additional Information – Revised Reactor Operator Requalification Program (TAC Nos. MA3289 and MA3290); University of Virginia Reactor, Docket No. 50-62, License R-66.

Dear Mr. Adams:

In response to your letter of September 3, 1998, we have included the statements required by 10CFR55.53(e) and (f)(2) into the U.Va. Reactor Requalification Program for the UVAR and CAVALIER reactors. We also have added the statement requiring an alternating year schedule of examinations/evaluations for the licensed individuals who develop the operating and written tests. An updated Requalification Program which we believe now meets all applicable regulations is in attachment for your review. Please contact me at (804) 982-5440 or by e-mail sent to rum@Virginia.EDU should you have need for additional information.

Sincerely,

Robert U. Mulder, Director
U.Va. Reactor Facility &
Assoc. Prof. of Nuclear Eng.

County of Albemarle
Commonwealth of Virginia

I hereby certify that the attached document is a true and exact copy of a letter presented before

me this 9th day of October 1998
by Robert Mulder

My commission expires 2/28 19 2002

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cc: Mr. Craig Basset, NRC Region II, Atlanta, Ga.
Document Control Desk, NRC, Washington DC ✓

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UNIVERSITY OF VIRGINIA REACTOR FACILITY OPERATOR REQUALIFICATION PROGRAM

(Revised 9/98)

A. Applicability

This requalification program applies to licensed reactor and senior reactor operators (RO/SROs) employed at the Reactor Facility of the University of Virginia. Reactor operator trainees may participate in the program during the course of their training. However, requalification program requirements only apply to licensed personnel.

The program shall meet the requirements of 10CFR55.59 and ANS Standard 15.4., as applicable to research reactors in a permanent shutdown status while in preparation for decontamination and decommissioning. (Note: University of Virginia Provost Peter Low formally notified the NRC by letter on June 22, 1998 that the UVAR would be permanently shut down by July 1, 1998.)

Operation of the UVAR at power is no longer authorized by the University of Virginia administration. Also, the University of Virginia is preparing to request a Possession-Only Amendment. Therefore, license-authorized activities for RO/SROs shall be limited to those fuel handling actions still needed to ship reactor fuel from the facility.

B. Qualified RO/SRO Status

To meet the requirements of 10CFR 55.53(e), RO/SROs shall actively perform the functions of operators/senior reactor operators, as applied to the shutdown UVAR facility, for a minimum of four hours per calendar quarter. Should the RO/SRO fail to perform four hours of licensed functions per calendar quarter, then [to meet the requirements of 10CFR55.53(f)(2)] the RO/SRO must perform a minimum of six hours on shift under direction before returning to active status.

The requisite skills associated with safe fuel handling shall be maintained by RO/SROs through the performance of in-pool practice handling of dummy or regular fuel elements. In order to maintain license qualifications current, until all LEU fuel elements have been shipped from the Facility each RO/SRO shall perform a minimum of three practice fuel manipulations each calendar year. Should a RO/SRO fail to complete the requisite number of practice transfers in a given calendar year, qualified RO/SRO status can be reinstated by the satisfactory completion of three practice transfers of regular or dummy fuel elements under the supervision of the licensed Reactor Supervisor or a licensed RO/SRO designee.

C. Day-to-Day RO/SRO Activities

The scope of daily routine duties and tasks performed by licensed Reactor Operators/Senior Reactor Operators (RO/SROs) will be revised to reflect the permanent shutdown of the UVAR.

Accordingly, RO/SRO participation in day-to-day activities may include:

- Maintenance, Monitoring and Surveillance of the UVAR Pool (utilized for the interim storage of fuel elements, reactor experimental facilities, radiation sources, and Co-60);
- Review of Emergency Procedures, Security Plan and Quality Assurance Program;
- Review of applicable SOPs (for example, fuel handling procedures);
- Review of Federal Regulations, Technical Specifications, Changes to SOPs and Plant Equipment, as well as License Amendments;
- Review of Reactor Theory as regards Fuel Handling;
- Operation and Maintenance of Area Radiation Monitoring and Alarm Systems;
- Preparation of License Amendments related to UVAR Decommissioning; Preparation and Processing of LEU Fuel Shipments;
- Supporting/Supervising NRC-Authorized Decommissioning Activities

D. Program Description

The program will follow a two-year cycle and will be followed by successive requalification programs. In addition to a lecture series and an annual operator evaluation, the requalification program includes on-the-job training. [For example, completion of checklists, fuel element movements, instrument calibrations, fuel calculations, emergency drills and surveillance activities are performed as per Technical Specifications.]

E. Program Management

A licensed Reactor Supervisor or, in his absence, a licensed operator designee will be responsible for managing and administering the requalification program.

F. Program Lecture Series

During the program's two-year cycle, each licensed operator is required to attend a series of lectures. Trainees may also attend these lectures. A cycle will normally begin in September (corresponding to the beginning of an academic year). The lectures will be pre-scheduled to run from September through June, with a break during July and August, and continue the following September. The lectures will cover the following subjects:

- Reactor Theory (as applied to fuel movement and nuclear criticality);
- Emergency Procedures;
- Technical Specifications;
- Radiation Control and Safety;
- Quality Assurance;
- Applicable Research Reactor Federal Regulations;
- Applicable SOPs (excluding those used to operate the reactor at power)
- Major Changes to Reactor SOPs or Equipment.

Operators who miss lectures will be required to review the lecture notes under the direction of the program manager.

G. Written Examinations

As required by 10CFR55.59, a written exam will be administered to licensed operators at the end of each two-year cycle. Reactor operator trainees may take these exams for training purposes. The biennial exam will be composed and administered by a licensed RO/SRO. This individual will be exempted from taking the exam for the cycle in which he/she composes the exam, but will be required to go through such an exam on an alternating biennial schedule.

An overall grade of 70% or greater will be considered as passing. If an operator receives less than 70% on one or more sections of the exam, but has a passing grade overall, he/she will be retrained in the deficient areas and given a make-up written exam covering only deficient areas. If an operator scores less than 70% overall on the examination, he/she will be excused from licensed duties, undergo retraining and retake the entire exam.

Retraining may consist of discussions, hands-on familiarization sessions, lectures and/or self-study, documentation review, in whatever combination deemed necessary and appropriate by the program manager to bring the candidate to an acceptable level of expertise.

H. Annual Evaluation Test

An evaluation will be made of each licensed operator once per calendar year. Reactor operator trainees may also take evaluation tests to gauge learning progress and determine areas in need of strengthening. The RO/SRO performing the evaluation will be required to go through this evaluation on an alternating year schedule. If an operator is found to be deficient in some area of operation, this will be noted on the test form below and the operator will undergo retraining and re-evaluation.

I. Physical Fitness

Licensed operators will be required to undergo physical examinations at least once every two years to assure continued physical fitness.

J. Records

A file shall be kept for each employed licensed operator and operator trainee. The personal files shall contain legible records on participation in training, the content and results of written exams, the results of annual evaluations, retraining received in areas of demonstrated deficiency, and the results of biennial medical exams.

Records showing the lecture schedule, content and attendance by the licensed operators and operator trainees will be kept in a separate requalification program file.

ANNUAL REACTOR OPERATOR OPERATING TEST (revised 7/98)

This evaluation fulfills the requirement (10CFR55.59(a)(2)(ii)) that an operator or senior operator pass an operating test as part of the facility requalification program. The regulation states:

55.59 (a) *Requalification requirements.*
Each licensee shall-

- (2) Pass a comprehensive requalification written examination and an annual operating test.
- (ii) The operating test will require the operator or senior operator to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a comprehensive sample of items specified in 10CFR55.45(a) (2) through (13) inclusive to the extent applicable to the facility.

55.45 Operating tests

TESTED	PASS	EXPLANATION	FAIL
N/A (a)(2) Manipulate the console controls as required to operate the facility between shutdown & designated power levels.		<u>Not applicable in permanent shutdown mode</u>	
<input type="checkbox"/> (a)(3) Identify annunciators and condition-indicating signals and perform appropriate remedial actions where appropriate.	<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> (a)(4) Identify the instrumentation systems and the significance of facility instrument readings.	<input type="checkbox"/>		<input type="checkbox"/>
N/A (a)(5) Observe and safely control the operating behavior characteristics of the facility. (Here facility=reactor.)		<u>Not applicable in permanent shutdown mode</u>	
N/A (a)(6) Perform control manipulations required to obtain desired operating results during normal, abnormal, and emergency situations. (Operation involves the reactor.)		<u>Not applicable in permanent shutdown mode</u>	
N/A (a)(7) Safely operate the facility's head removal systems, including primary coolant, emergency coolant, and decay heat removal systems, and identify the relations on the proper operation of these systems to the operation of the facility.		<u>Not applicable in permanent shutdown mode</u>	
<input type="checkbox"/> (a)(8) Safely operate the facility's auxiliary and emergency systems including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.	<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> (a)(9) Demonstrate or describe the use and function of the facility's radiation monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.	<input type="checkbox"/>		<input type="checkbox"/>
<input type="checkbox"/> (a)(10) Demonstrate knowledge of significant radiation hazards, including permissible levels in excess of those authorized, and ability to perform other procedures to reduce excessive levels of radiation and to guard against personnel exposure.	<input type="checkbox"/>		<input type="checkbox"/>

TESTED

- (a)(11) Demonstrate knowledge of the emergency plan for the facility, including, as appropriate, the operator's or senior operator's responsibility to decide whether the plan should be executed & the duties under the plan assigned.
- (a)(12) Demonstrate the knowledge and ability as appropriate to the assigned position to assume the responsibilities associated with the safe operation of the facility (with UVAR in the permanent shutdown mode).
- (a)(13) Demonstrate the applicant's ability to function within the control room team as appropriate the assigned position in such a way that the facility licensee's procedures are adhered to and the limitations in its license and amendments are not violated.

PASS EXPLANATION FAIL

<input type="checkbox"/>	<hr/> <hr/> <hr/>	<input type="checkbox"/>
<input type="checkbox"/>	<hr/> <hr/> <hr/>	<input type="checkbox"/>
<input type="checkbox"/>	<hr/> <hr/> <hr/>	<input type="checkbox"/>

PERMANENT SHUTDOWN REQUIREMENTS AND FUEL HANDLING

- Monitoring requirements with the reactor shut down.
- Fuel and cobalt storage requirements (location, separation, etc).
- Poolwater quality requirements.
- Fuel handling requirements and procedures.
- Security plan and procedures

<input type="checkbox"/>	<hr/> <hr/> <hr/>	<input type="checkbox"/>
<input type="checkbox"/>	<hr/> <hr/> <hr/>	<input type="checkbox"/>
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Operator or Senior Operator Tested: _____

Date(s) _____

Sign to indicate that you have had an opportunity to review this evaluation: _____

Tested by: _____

Any subject failed will require retraining in that subject.

Were any subjects failed? ____ yes ____ no (if yes, complete and document retraining and then complete the below certification; if no, complete the certification now.)

CERTIFICATION

I certify that the above named operator or senior operator passed the operating test which I administered, as indicated.

Date: _____

I certify that the above named operator or senior operator has, in my opinion, during the past year discharged the license responsibilities competently and safely as required by the facility's re-qualification plan and therefore, as of this date, meets the training requirements for license renewal (10CFR55.57(a)(5)).

Reactor Supervisor Date: _____