The University of New Mexico

Chemical & Nuclear Engineering
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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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We have completed a review and update of the Operator Requalification Plan for the AGN-201M reactor located at the University of New Mexico - Docket 50-252. An update bar on the right margin marks all changes since the last submittal. Changes on the first page are to allow for undergraduate students to be licensed, and to make current the qualifications of the NE Lab Technician. Other changes are editorial such as removing USAEC and the reference to a yearly schedule. On page 2, clarification of typical federal regulations has been added as well as the process for keeping staff current with the facility. The main change is in section B.4 under Evaluation of Reactor Operation where this paragraph has been brought in line with 10CFR55.59. The document is dated September 2003, but was not submitted at that time as we were working on security issues. The revised plan, original and three copies, are hereby submitted for approval pursuant to 10 CFR 50.34.

If you have any questions, please let us know.

Sincerely,

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OPERATOR AND SENIOR OPERATOR REQUALIFICATION PROGRAM

UNIVERSITY OF NEW MEXICO

AGN-201M REACTOR FACILITY

A. Introduction

The University of New Mexico AGN-201M Reactor Facility is used primarily as a training reactor for undergraduate and graduate students. Experiments performed include sample activation, an approach to critical, reactor period and reactivity measurements, control rod calibrations, importance function measurements, and transfer function measurements. The reactor is also used for activation of samples for the College of Pharmacy and the Departments of Archaeology and Chemistry.

Licensed staff for the Facility is made up of personnel from three categories:

1. Faculty Members: Reactor supervisors (including the Chief Reactor Supervisor) are faculty members who are licensed senior operators. The faculty members are regularly engaged in teaching reactor theory, reactor engineering, and nuclear engineering laboratory courses.

2. Nuclear Engineering Students: Students serve as Lab assistants, teaching assistants, and licensed operators. These students are actively engaged in a rigorous academic program covering reactor theory, reactor engineering, and nuclear engineering laboratory experimental methods. Students who have been licensed generally serve as operators for 2 to 3 years while they are completing their graduate study programs.

3. Nuclear Engineering Laboratory Technician: The Technician is a licensed operator or licensed senior operator who generally has had previous reactor experience, and who serves the dual function of teaching assistant, and reactor maintenance technician.

For all three categories of personnel, the typical training program for preparation to take the licensing exam has been about 1 day/week for 12 weeks. Because of the academic and work experience of the staff and the basic simplicity of the reactor facility and operating procedures, extensive training programs are not required. Therefore it is concluded that the requalification program for licensed personnel of this facility will not be required to be as elaborate and extensive as that outlined in Appendix A of 10CFR55.

B. Requalification Program

1. Schedule

A one-day requalification training session will be scheduled annually. All licensed personnel will be required to participate. For scheduling purposes the session may consist of two ½ day sessions.

2. Lectures

One-half-day of the Training session will consist of a review and discussion of the material prepared for new operator and senior operator trainees. This material includes:

a. Fundamentals of reactor theory
b. General design features
c. General operating characteristics
d. Safety systems
e. Instrumentation and controls
f. Shielding and containment
g. Standard and emergency operating procedures
h. Radiation monitoring equipment
i. Radiological safety
j. Technical specifications and bases
k. Review of applicable Federal Regulations, e.g., Fitness for Duty, 10CFR55, 10CFR59

The Chief Reactor Supervisor or the Reactor Administrator will keep the Operations staff current with changes in the facility and with information from other sources. This can be done through meetings of the Reactor Operations Committee, email, memo, RSAC minutes, or other written documents. Notification of substantial changes will be documented in the individual training files of the licensed personnel.

3. On-the-job Training

The other half-day of the training session will consist of the following activities:

a. Review and perform a monthly maintenance check
b. Review and perform a daily reactor checkout
c. Startup of the reactor and operation at licensed power
d. Measurement of excess reactivity
e. Measurement of reactivity worths of typical samples used in the training and activation experiments
f Measurement of a safety rod reactivity worthy using rod-drop techniques
g. Simulated emergency with practice evacuation

Manipulation of the controls during these checks and operations will be rotated among the participating personnel. Participation in this session will assure that each licensed operator or senior operator is cognizant of facility design changes, procedure changes, and facility license changes.

4. Evaluation

Written examination covering the topics specified in B.2: Each licensed individual shall be given an annual written examination covering the areas described in Section B.2 of this document. (The licensed individual who develops, administers, and grades these examinations shall be waived from taking the examination in that year. The responsibility for the examination shall rotate among the licensed senior operators or other qualified individuals so that each licensed senior operator shall be evaluated at least every other year.) A score of 70% or higher will require no additional training.

An overall score of 55% to 69% requires additional training in those areas or topics where weakness or deficiencies are indicated. During the training, the individual can continue to perform licensed duties under the supervision of a licensed senior operator. After the training program is completed, an oral examination shall be administered to evaluate the individual's performance in those areas covered by the program. Unsuccessful performance on the oral examination shall require the individual to complete an accelerated training program followed by a written examination. An overall score below 55% requires that an individual be relieved of licensed duties and receive training in an accelerated program. The accelerated program shall cover those areas where weakness and deficiencies are indicated, and it shall be completed within four months following the grading of the written examination. After the accelerated training is completed, a written examination shall be administered and successfully completed before the individual can resume performance of licensed duties.

Evaluation of Reactor Operation by Certified Individuals: To maintain active status, each certified individual shall actively perform the functions of an operator or senior operator for a minimum of four hours per calendar quarter. Supervision of these functions by licensed senior operators shall be considered equivalent to actual performance. Each certified individual is required to take an annual operational exam covering reactivity manipulations in startup, shutdown, and other significant reactivity changes that demonstrate skill or familiarity with the reactivity control systems and general familiarity with the reactor safety systems. Responsibility for these exams shall rotate among the senior operations staff. If any weakness is noted during the quarter or from the operational exam, then additional operation times will be scheduled for retraining. After this is completed, the individual will undergo an additional operational examination to ensure that the individual can competently manipulate the controls of the reactor. If the weakness is in a safety area, then the individual will be relieved of licensed duties until the deficiency is corrected.

5. Records

A separate file for each licensed operator or senior operator shall be established. The attached form will be used to record and certify (1) participation in the requalification training sessions (2) reactivity control manipulations, and (3) written and oral examination results. These files will also contain copies of written examinations administered, the answers given by the licensee, and any additional information regarding training or requalification or each licensee.