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U.S. Nuclear Regulatory Commission
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Washington, DC 20555

Reference: U.S. Geological Survey TRIGA Reactor (GSTR), Docket 50-274, License R-113
Request for Additional Information (RAI) dated January 22, 2014

Subject: Responses to Reactor Operator Requalification Questions

Mr. Wertz:

The attached pages provide additional information for our response to RAI questions dated January 22, 2014. Please contact me if further details, or corrections, are needed.

Sincerely,

A handwritten signature in black ink that reads "Tim DeBey". The signature is fluid and cursive, with the first name "Tim" and last name "DeBey" clearly distinguishable.

Tim DeBey

USGS Reactor Supervisor

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 2/19/14

Attachment

Copy to:
Vito Nuccio, Reactor Administrator, MS 406
USGS Reactor Operations Committee

A020
M003
N1R

Requirement 1: The last sentence of Section 1, "Program," of the GSTR Reactor Operator Requalification Plan states:

They are: (1) annual written examinations, (2) annual operating examinations and (3) stipulated minimum tasks which must be performed during the requalification period of two years.

The "period of two years" is not defined and it could mean 24 months or beyond. For example, if a written examination is administered in January 2013 and the next one in September 2015, this practice could be interpreted to meet the two year requirement of the GSTR Reactor Operator Requalification Program, but would not be in accordance with 10 CFR 55.59(a)(1). Please provide a definition for the "period of two years" and/or revise the GSTR Reactor Operator Requalification Program to include that the requalification period would not exceed 24 months in duration as required by 10 CFR 55.59(a)(1).

Response:

The definition of "period of two years" for the GSTR requalification program is "a continuous period of time with duration of 24 calendar months starting on January 1 of each odd-numbered year. The GSTR requalification program will be revised to explicitly state this. In addition, the GSTR requalification program tolerance on the annual requirements (see first sentences in sections 3 and 4) was originally "not to exceed 14 months" and this is being changed to the standard annual tolerance of "not to exceed 15 months".

Requirement 2: The GSTR Reactor Operator Requalification Program, Section 2, "Written Examination" states:

Since the annual written examination will be prepared and corrected by the Reactor Supervisor; who is also required to hold a Senior Operator License, these functions will be deemed adequate to demonstrate and document continuing competence.

Contrary to the requirement in the regulations, this sentence exempts one person indefinitely from the requirements of taking a written examination. Propose changes to the GSTR Reactor Operator Requalification Plan to ensure that no one individual is permanently exempted from meeting the requirements of 10 CFR 55.59; for example, through the addition of a requirement that the examination preparation is rotated among senior reactor operators.

Response:

The GSTR requalification program does exempt the employee who holds the position of Reactor Supervisor, during his or her tenure in that position, from taking the written examination. In response to the RAI, the GSTR requalification program will be revised to state, "The written examination shall be prepared and graded by a GSTR licensed senior reactor operator. Preparation and grading of a written exam shall satisfy that operator's requalification exam requirements for that requalification year. The same person shall not be exempted for two consecutive years, unless that person is the only licensed senior reactor operator at the facility. Successful completion of a license exam administered by the NRC shall satisfy the examinee's requalification exam requirements for that requalification year."

Requirement 3: The GSTR Reactor Operator Requalification Program does not appear to contain a provision to include preplanned lectures on a regular and continuing basis in accordance with the

requirement of the 10 CFR 55.59(c)(2). Explain or provide a provision to the GSTR Reactor Operator Qualification Program to ensure that this requirement is satisfied.

Response:

The GSTR Reactor Operator Qualification Program will be revised to require that a minimum of two meetings shall be scheduled during each requalification year. The meetings shall be documented. The subjects of these meetings may be drawn from the topics listed in 10 CFR 55.59(c)(2), but are not restricted to those topics. The specific content of the meetings will be based on items identified as weaknesses 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. It is not required that all topics be covered in any given requalification cycle. A single meeting may address more than one topic. Any operator who is absent from any required requalification meeting shall complete an alternate program determined by the Supervisor (or designee). Normally this will be a review of any notes, handouts, presentations, or other material from the meeting. The completion of the alternate program shall be documented.

This addition to the Program is being made by the addition of a new paragraph, Section 2. This addition results in the renumbering of all sections below the new Section 2.

Requirement 4: Section 6, "Records," of the GSTR Reactor Operator Qualification Program does not appear to provide a retention period for the facility to hold the records of the licensed operator and senior operator in the requalification program. Explain or provide a provision to the GSTR Reactor Operator Qualification Program to ensure that this requirement is satisfied.

Response:

The GSTR Reactor Operator Qualification Program will be revised to require maintenance of records documenting the participation of each licensed operator and senior operator in the requalification program. The records will include originals or copies of written examinations, the examinations' keys, and the results of operating tests and of any additional training administered in areas where an operator or senior operator has exhibited deficiencies. The GSTR shall retain these records until the operator's or senior operator's license is renewed or terminated, whichever occurs first.

Requirement 5: Section 6, "Records," 2.(a), of the GSTR Reactor Operator Qualification Program states:

Table 1, Section III, Parts a, b, c, d, and e will be contained within normal facility operating records.

"Section III" is not defined in the GSTR Reactor Operator Qualification Program, Table 1. Please explain "Section III" and/or revise Table 1 of the GSTR Reactor Operator Qualification Program appropriately.

Response:

The GSTR Reactor Operator Qualification Program will be revised to remove the reference to "Section III".

Requirement 6: Section 6, "Records," 2.(d), of the GSTR Reactor Operator Requalification Program states:

An annual statement by the Reactor Supervisor will be inserted in each Reactor Operators or Senior Reactor Operators certifying continuing competency based on the (1) successful completion of the annual examinations plus any remedial work if required and (2) the actual performance of licensed duties as noted in Part 4-B.

The GSTR Reactor Operator Requalification Program does not contain a Part or Section "4-B". Please explain the reference "4-B," and/or revise the GSTR Reactor Operator Requalification Program appropriately.

Response:

The GSTR Reactor Operator Requalification Program will be revised to remove the "-B" from the paragraph and clarify the licensed duty performance requirements as those given in the original Section 4 (now renumbered to be Section 5) of the Program.

Reactor Operator Requalification Program

U.S. Geological Survey TRIGA Reactor

1. Program

The requalification training program was established to maintain the proficiency of the operating organization through training exercises, instruction periods, and reviews covering those items and equipment which relate to the safe operation of the facility. While the program will be continuous in nature, certain benchmarks have been established to aid in the administration of the requalification plan. They are: (1) annual written examinations, (2) annual operating examinations and (3) stipulated minimum tasks which must be performed during the requalification period of two years. The two year requalification period shall be a continuous period of time with duration of 24 calendar months starting on January 1 of each odd-numbered year.

2. Routine Training

A minimum of two training meetings shall be scheduled during each requalification year. The meetings shall be documented. The subjects of these meetings may be drawn from the topics listed in Columns I and II below, but are not restricted to those topics. The specific content of the meetings will be based on items identified as weaknesses 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. It is not required that all topics be covered in any given requalification cycle. A single meeting may address more than one topic. Any operator who is absent from any required requalification meeting shall complete an alternate program determined by the Supervisor (or designee). Normally this will be a review of any notes, handouts, presentations, or other material from the meeting. The completion of the alternate program shall be documented.

3. Written Examination

An annual (not to exceed 15 months) written examination, designed to demonstrate competence in the areas listed in 10 CFR 55.41 or 55.43 will be given to all NRC licensed Senior Operators and Operators. Any weakness shown by the annual written examination will represent areas in which the licensee shall

receive appropriate retraining. The retraining for demonstrated weaknesses shall normally consist of study assignments or lectures or both. The graded written annual examinations will document competence and hence will be preserved for each licensed Senior Reactor Operator and Reactor Operator until their license is renewed or terminated. For any examples of demonstrated weaknesses, a successful repeat written examination for those areas of inadequacy will document the sufficiency of retraining. The records to be retained will include originals or copies of written examinations, the examinations' keys, and the results of operating tests and of any additional training administered in areas where an operator or senior operator has exhibited deficiencies. The GSTR shall retain these records until the operator's or senior operator's license is renewed or terminated, whichever occurs first.

The written examination shall be prepared and graded by a GSTR licensed senior reactor operator. Preparation and grading of a written exam shall satisfy that operator's requalification exam requirements for that requalification year. The same person shall not be exempted for two consecutive years, unless that person is the only licensed senior reactor operator at the facility. Successful completion of a license exam administered by the NRC shall satisfy the examinee's requalification exam requirements for that requalification year. The subject areas in column 1 below will be sampled by the Reactor Operators' written examination and the subject areas in columns 1 and 2 will be sampled by the Senior Reactor Operators' written examination.

Column 1	Column 2
Reactor Theory Fundamentals	Facility License
General Design Features	Technical Specifications
Primary System Features	Radiation Hazards
Secondary System Features	Fuel Movement
Operating Characteristics	Assessment of normal,
Reactivity Controls & Insts.	abnormal, and emergency
Control & Safety Systems	conditions.
Facility Procedures	
Radiation Monitoring	
Radioactive Material Handling	

4. Operating Examination

An annual (not to exceed 15 months) operating examination, designed to evaluate operating competence, will be given to all NRC licensed Senior Reactor Operators and Reactor Operators. Any weakness shown by the operating examination shall be the focus of subsequent retraining.

A memorandum will be written and retained to document operating examinations and any related retraining activities. Operating examination tasks will typically be selected from activities such as reactor checkouts, reactor startups, major power changes, manual or automatic operations, square wave operations, pulse operations, power calibrations, or control rod calibrations. The operating examinations may be conducted during normal experiment operations and will be administered by the Reactor Supervisor. These functions will be deemed adequate to demonstrate and document continuing operational competence of the Reactor Supervisor.

5. Reactor Operations - On-the-Job-Training

Each Senior Reactor Operator and Reactor Operator will be required to perform certain minimum tasks during the requalification period (2 years) to insure continued competence in the areas listed in 10 CFR 55.59. These minimums are listed in Table I.

TABLE I

	Senior Reactor Operator	Reactor Operator
a. Reactivity Control Manipulations	10	10
b. Daily Startup and Shutdown Checklists	10	10
c. Participate in Monthly Checklists	2	1
d. Participate in Pulse or Square Wave Operations	1	1
e. Participate in Annual Emergency Drills	1	1
f. Review all (1) facility design changes (2) procedure changes (3) facility license changes	within 20 days of issuance	within 20 days of issuance
g. Review emergency procedures	2	2

6. Evaluation

A. The written examinations will be graded by the SRO who prepared the exam. The following written exam criteria will be used:

1. A grade of 80% or above on each section indicates satisfactory competence. No remedial action is required.
2. A grade below 80% on any section signifies weakness in that area; therefore, remedial work and/or lectures on the deficient area will be required.
3. An overall grade of less than 70% on the annual written examination will require the operator or senior operator be removed from licensed duties and placed on an accelerated training program until satisfactory performance is achieved.

B. The Reactor Supervisor will routinely observe and evaluate the performance of licensed operators and senior operators. This evaluation will include their actions during actual or simulated abnormal and emergency conditions. If an unsatisfactory performance is determined as a result of the Reactor Supervisor's evaluation, the licensed operator or senior operator will be removed from licensed duties and be placed on an accelerated training program. Licensed duties will not be resumed until satisfactory performance has been demonstrated by the operator.

7. Records

- A. The corrected annual examination will be maintained in the Reactor Operator/Senior Reactor Operator License File.
- B. Documentation of an Operator/Senior Reactor Operator's On-The-Job Training will be as follows:
 - 1. Table 1, Parts a, b, c, d, and e will be contained within normal facility operating records.
 - 2. Table I, Part f: A routing sheet will be used with all facility design changes, procedure changes and facility license changes which will require the initials of all licensed Operators and Senior Operators, certifying their review and understanding of the change. A copy of this routing sheet will be maintained in the Operator Requalification Program file.
 - 3. Table I, Part g: A review and critique sheet will be prepared by the Reactor Supervisor, normally in the same time frame with scheduled emergency drills, to document that each Reactor Operator and Senior Operator has reviewed the contents of the Reactor Operations Manual, Section 7, Emergency Procedures and is aware of any special problems or deficiencies noted in the last drill. A copy of this review sheet will be maintained in the Operators Requalification Program file.
 - 4. An annual statement by the Reactor Supervisor will be inserted in each Reactor Operators or Senior Reactor Operators file certifying continuing competency based on the (1) successful completion of the annual examinations plus any remedial work if required and (2) the actual performance of licensed duties as noted in Part 5.
- C. When a licensed operator or senior operator has not actively performed licensed functions for a duration of at least four hours in any calendar quarter, he/she shall perform licensed functions for a minimum of six hours under the direction of a licensed Senior Reactor Operator, including at least one startup and shutdown checklist. A letter shall be sent to the NRC certifying this on-the-job training and that the qualifications and status of the licensee are valid. Resumption of unsupervised operation will not occur until after this training and certification have been performed.