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March 6, 2008

US Nuclear Regulatory Commission
Mr. John T. Nguyen
Mail Stop: O12-G15
Washington, D.C. 20555-0001

Subject: Response to Brookhaven National Lab comments for the University of Missouri-Rolla Reactor Facility, License R-79, Docket no. 50-123.

Mr. John Hguyen:

The following are responses to the Brookhaven National Lab comments you sent me by e-mail on February 20, 2008:

Question 13 - Testing of the rod drive speeds will be documented in our semi-annual calibration procedures, which are performed in the summer and winter.

Question 16 - The building evacuation table is revised to the following timeline:

1 minute	The Reactor Operator sounds the building evacuation alarm, scrams the reactor, verifies control rods are inserting, secures the magnet key, and announces the facility status.
½ minute	The Reactor Operator waits for the SRO on Duty to arrive at the control room.
1 minute	The Reactor Operator reports the status of the emergency to the SRO on Duty.
2 minutes	The SRO on Duty verifies all personnel have left the reactor building.
½ minute	The SRO on Duty verifies vent fans are turned off and leaves the building.

Question 17 - The answer is yes.

Question 33 - UMRR proposes to modify Technical Specification 14.6.1.3 Staffing to comply with ANS-15.1 Section 6.1.3 Staffing.

Technical Specification 14.6.1.3 is listed as follows:

14.6.1.3 Staffing

- 1) The minimum staffing when the reactor is not secured shall be:
 - a. A certified reactor operator in the control room.
 - b. A second designated person present at the reactor facility able to carry out prescribed written instructions. Unexpected absence for as long as two hours to accommodate a personal emergency may be acceptable provided immediate action is taken to obtain a replacement.
 - c. A designated Senior Reactor Operator shall be readily available on call. "Readily Available on Call" means an individual who (1) has been specifically designated and the designation known to the operator on duty, (2) keeps the operator on duty informed of where he may be rapidly contacted and the phone number, and (3) is capable of getting to the reactor facility within a reasonable time under normal condition (e.g., 30 minutes or within a 15-mile radius).
- 2) A list of reactor facility personnel by name and telephone number shall be readily available in the control room for use by the operator. The list shall include:
 - a. Management personnel
 - b. Radiation safety personnel
 - c. Other operations personnel.
- 3) Events requiring the presence at the reactor facility of Senior Reactor Operator:
 - a. Initial startup and approach to power
 - b. All fuel or control-rod relocations within the reactor core region
 - c. Relocation of any in-core experiment with a reactivity worth greater than one dollar
 - d. Recovery from unplanned or unscheduled shutdown.

UMRR proposes to modify Technical Specification 14.6.1.3 Staffing to the following:

14.6.1.3 Staffing

- 1) The minimum staffing when the reactor is not secured shall be:
 - a. A certified reactor operator in the control room.
 - b. A second designated person present at the reactor facility able to carry out prescribed written instructions. Unexpected absence for as long as

two hours to accommodate a personal emergency may be acceptable provided immediate action is taken to obtain a replacement.

- c. A designated Senior Reactor Operator shall be readily available on call. "Readily Available on Call" means an individual who (1) has been specifically designated and the designation known to the operator on duty, (2) keeps the operator on duty informed of where he may be rapidly contacted and the phone number, and (3) is capable of getting to the reactor facility within a reasonable time under normal condition (e.g., 30 minutes or within a 15-mile radius).
- 2) A list of reactor facility personnel by name and telephone number shall be readily available in the control room for use by the operator. The list shall include:
 - a. Management personnel
 - b. Radiation safety personnel
 - c. Other operations personnel.
 - 3) Events requiring the presence at the reactor facility of Senior Reactor Operator:
 - a. Initial startup and approach to power
 - b. All fuel or control-rod relocations within the reactor core region
 - c. Relocation of any in-core experiment with a reactivity worth greater than one dollar
 - d. Recovery from unplanned or unscheduled shutdown or significant power reduction.

Question 34 - UMRR is adding to the response to question 34 that a written report of the findings and recommendations of the committee is submitted to Level 1 in a timely manner after the review is completed.

Question 35 - UMRR proposes to modify Technical Specification 14.6.2.3 "Review Function" with an addition of a step for review of new procedures:

Technical Specification 14.6.2.3 is listed as follows:

14.6.2.3 Review Function

As a minimum, the Radiation Safety Committee shall:

- 1) Review in accordance with 10CFR50.59 untried experiments and tests that are significantly different from those previously used or tested in the reactor, as determined by the Facility Director.
- 2) Review in accordance with 10CFR50.59 changes to the reactor core, reactor systems or design features, or procedures that may affect the safety of the reactor.

- 3) Review all proposed amendments to the facility license and Technical Specifications.
- 4) Review reportable occurrences and the actions taken to identify and correct the cause of the occurrences.
- 5) Review significant operating abnormalities or deviations from normal performance of facility equipment that affect reactor safety.

This same Committee may have other responsibilities, for example oversight of the campus byproduct material license. The Committee may assign sub-committees to act on its behalf provided that said sub-committees report in writing all actions they take.

UMRR proposes to revise Technical Specification 14.6.2.4 to the following:

14.6.2.4 Review Function

As a minimum, the Radiation Safety Committee shall:

- 1) Review in accordance with 10CFR50.59 untried experiments and tests that are significantly different from those previously used or tested in the reactor, as determined by the Facility Director.
- 2) Review in accordance with 10CFR50.59 changes to the reactor core, reactor systems or design features, or procedures that may affect the safety of the reactor.
- 3) Review of new procedures.
- 4) Review all proposed amendments to the facility license and Technical Specifications.
- 5) Review reportable occurrences and the actions taken to identify and correct the cause of the occurrences.
- 6) Review significant operating abnormalities or deviations from normal performance of facility equipment that affect reactor safety.

This same Committee may have other responsibilities, for example oversight of the campus byproduct material license. The Committee may assign sub-committees to act on its behalf provided that said sub-committees report in writing all actions they take.

Question 36 - UMRR proposes to modify Technical Specification 14.6.2.4 "Audit Function" Chapter 14 of the Safety Analysis Report.

Section 14.6.2.4 is listed as follows:

The Radiation Safety Committee will arrange for a knowledgeable and impartial individual (or individuals) to review reactor operations and audit the operational records for the following:

- compliance with reactor procedures, Technical Specifications, and license provisions
- training and the requalification program
- emergency plan
- health physics
- results of actions taken to correct deficiencies

An impartial individual is one who is not directly affected by the findings or recommendations of the audit and has no reason to be biased concerning the review. These audits shall be performed annually.

UMRR proposes to change Section 14.6.2.4 to the following:

The Radiation Safety Committee will arrange for a knowledgeable and impartial individual (or individuals) to review reactor operations and audit the operational records for the following:

- compliance with reactor procedures, Technical Specifications, and license provisions
- training and the requalification program
- emergency plan
- health physics
- results of actions taken to correct deficiencies
- experiments
- security procedures

An impartial individual is one who is not directly affected by the findings or recommendations of the audit and has no reason to be biased concerning the review. These audits shall be performed annually.

Question 47 - There is a reactor period scram and a Log N & Period Not Operative scram.

The last sentence of the response to question 47 was listed as follows:

If the electronic drawer has an internal power supply failure it will output a signal to the scram circuitry, which is independent of Log N and Period scrams.

The last sentence of the response to question 47 should be revised to read as follows:

If the electronic drawer has an internal power supply failure it will output a signal to the scram circuitry, which is independent of the Period scram.

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

William Bonzer

Executed on *March 6, 2008*

Sincerely,

William Bonzer

William Bonzer
UMRR Manager

**BNL Evaluation of Univ. of Missouri, Rolla Responses
to NRC RAIs dated Nov. 16, 2007
Response packages dated: Nov. 16, Nov. 27, & Dec. 26, 2007**

1. **Question 7** – The response is acceptable. However, it may require additional changes in the SAR to document the summary of the response.
2. **Question 13** – While the response is acceptable, please indicate what “random” testing means or based on experience state the average testing in the past year or three year period.
3. **Question 16** – The time line analysis is acceptable, however, it does not include any diagnosis time and hence is too short. An examination of NUREG-1278 shows that an assumption of less than 5 to 10 minutes for diagnosis is unreasonable since it gives a failure probability close to 1.0. Thus, it still appears that the assumption of 5 minutes in the Ch. 13 accident analysis is too short. Time for diagnosis is to account for actions such as, eliminating spurious alarms, identifying the real cause, etc.
4. **Question 17** – Is there a clear guidance to the operator that fuel can not be removed from the reactor pool?
5. **Question 33** - The new proposed TS address acceptably the issue in NRC Q. # 33. However, the new proposed words in TS 14.6.1.3 (3)c leave out one portion that is in 50.54(m)(1) and in ANS 15.1, section 6.1.3. Missing is the requirement for an SRO during recovery from an unplanned significant reduction in power.
6. **Question 34** - Two of the three aspects of the RAI were addressed acceptably. The one aspect not addressed in the response is a requirement for the RSC to provide a written report of the findings and recommendations of the committee that is submitted to Level 1 in a timely manner after the review is complete.
7. **Question 35** - The response addresses with a proposed TS change that RSC will review changes to procedures, but still does not call for the review by the RSC of new procedures.
8. **Question 36** - The response addresses several of the missing audit items with a proposed TS change, but still does not include audits of the security plan or experiments.
9. **Question 47** – Wording is not clear, is there a specific Log N & Period scram or just a Reactor Period scram and Log N & Period Not Operative scram (Table 14.2) The last sentence implies a separate, Log N & Period, scram function from the Not Operative scram signal.