October 19, 2007

Mr. William Bonzer, Reactor Manager
University of Missouri–Rolla
226 Fulton Hall
Rolla, MO 65409-0170

SUBJECT: UNIVERSITY OF MISSOURI - ROLLA RESEARCH REACTOR (UMRR) FACILITY – ISSUANCE OF AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE R-79 (TAC NO. MD5976)

Dear Mr. Bonzer:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed amendment No. 19 to Facility Operating License No. R-79 for the UMRR. The amendment changes the facility operating license in response to your application of April 9, 2007, and your response of August 23, 2007, to the staff request for additional information dated August 1, 2007.

The amendment modifies the UMRR Technical Specifications, Section 6.1.2, Responsibility, and 6.3, Operating Procedures. In Section 6.1.2, the amendment removes the requirement for the Reactor Director to obtain and maintain a NRC Senior Operator license. In Section 6.3, the amendment changes the level of approval from Level 2, the Reactor Facility Director, to Level 3, the Facility Manager, for minor modifications to procedures.

A copy of the safety evaluation supporting Amendment No. 19 is also enclosed. If there are any questions please contact me at 301-415-1128 or John Nguyen at 301-415-4007.

Sincerely,

/RA/

Marvin Mendonca, Senior Project Manager
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-123
License No. R-79

Enclosures: As stated
cc w/enclosures:
Please see next page

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Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

UNIVERSITY OF MISSOURI-ROLLA

DOCKET NO. 50-123

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.19
License No. R-79

1. The U.S. Nuclear Regulatory Commission (Commission) has found that:

   A. The application for an amendment to Facility Operating License No. R-79 filed by the University of Missouri-Rolla (licensee) on April 9, 2007, and supplemented on August 23, 2007, conforms to the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the regulations of the Commission as stated in Chapter I of Title 10 of the *Code of Federal Regulations* (10 CFR);

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance that (i) the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) such activities will be conducted in compliance with the regulations of the Commission;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;

   E. This amendment is issued in accordance with the regulations of the Commission as stated in 10 CFR Part 51, and all applicable requirements have been satisfied; and

   F. Prior notice of this amendment was not required by 10 CFR 2.105 and publication of a notice for this amendment is not required by 10 CFR 2.106.

2. Accordingly, the license is amended by changes to Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 2.C.2 of Facility Operating License No. R-79 is hereby amended to read as follows:

   2. Technical Specifications

      The Technical Specifications contained in Appendix A, as revised through Amendment No. 19, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Daniel S. Collins, Branch Chief
Research and Test Reactors Branch A
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Enclosure: Appendix A Technical Specifications Changes

Date of Issuance:

ENCLOSURE TO LICENSE AMENDMENT NO. 19

FACILITY OPERATING LICENSE NO. R-79

DOCKET NO. 50-123

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of changes.

Remove	Insert
Page 37	Page 37
Page 43	Page 43

6. ADMINISTRATIVE CONTROLS

6.1 Organization

6.1.1 Structure

The Nuclear Reactor Facility is a part of the School of Mines and Metallurgy of the University of Missouri-Rolla. The organizational structure is shown in Figure 6.1

6.1.2. Responsibility

The Dean of the School of Mines and Metallurgy is the individual responsible for the reactor facility's licenses (Level 1).

The Director of the Nuclear Reactor Facility is the contact person for the NRC and will have overall responsibility for management of the facility (Level 2). The Director shall have a minimum of six years of nuclear experience. The Director shall have a Bachelor's (or higher) degree in engineering or science. Equivalent education or experience may be substituted for a degree. The degree may fulfill four years of the six years of nuclear experience required.

The Reactor Manager (Level 3) shall be responsible for the day-to-day operation and for ensuring that all operations are conducted in a safe manner and within the limits prescribed by the facility license and the provisions of the Radiation Safety Committee. During periods when the Reactor Manager is absent, his responsibilities may be delegated to a Senior Operator (Level 4).

The Reactor Manager shall have three years of nuclear related experience. A maximum of two years equivalent full-time academic training may be substituted for two of the three years of nuclear related experienced required. As soon as reasonably possible after being assigned to the position, the Reactor Manager shall obtain and maintain a NRC Senior Operators license.

of reactor instrumentation and safety systems.

(7) Radiation control procedures which shall be maintained and made available to all operations personnel.

(8) Implementation of emergency and physical security plans.

Substantive changes to the previous procedures shall be approved by the Radiation Safety Committee, and the Facility Director (Level 2) or designated alternates. Minor modifications to the original procedures which do not change their original intent can be made by the Facility Manager (Level 3) or higher but the modifications must be approved by the Facility Director (Level 2) or designated alternates within 14 days.

6.4 Experiments Review and Approval

The reactor staff shall perform a thorough review of all proposed experiments in order to assure that they meet the requirements of Sections 3.8 and 4.8 of these specifications.

Following the reactor staff review and approval, any proposed untried experiments will be forwarded to the Radiation Safety Committee for its review and approval or disapproval.

6.5 Required Actions

6.5.1 Action to be taken in the Event a Safety Limit is Exceeded

(1) The reactor shall be shut down, and reactor operations shall not be resumed until authorized by the NRC.

(2) The safety limit violation shall be promptly reported to the Director of the Reactor Facility.

(3) The safety limit violation shall be reported to the NRC.

(4) A safety limit violation report shall be prepared. The report shall describe the following:

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 19 TO

FACILITY OPERATING LICENSE NO. R-79

UNIVERSITY OF MISSOURI-ROLLA

DOCKET NO. 50-123

1.0 INTRODUCTION

By letter dated April 9, 2007, the University of Missouri-Rolla (UMR or licensee) submitted a request for amendment of Facility Operating License No. R-79 for the UMR Research Reactor (UMRR). The staff requested additional information on August 1, 2007, and the licensee submitted responses by letter dated August 23, 2007. The amendment request is to modify the UMRR Technical Specifications, Section 6.1.2, Responsibility, and 6.3, Operating Procedures. In Section 6.1.2, the amendment request is to eliminate the Facility Director being required to obtain and maintain a NRC Senior Operator license. In Section 6.3, the amendment request is to change the level of approval from Level 2, the Facility Director, to Level 3, the Facility Manager, for minor modifications to procedures.

2.0 BACKGROUND

The UMRR is located in a separate building on the east side of the main campus in Rolla, Missouri. In December 1961, the U.S. Atomic Energy Commission (AEC) issued an operating license to the University of Missouri for operation of an MTR- type research reactor on its campus. This license, R-79, authorized the UMRR to operate at steady-state power levels up to 10 kW(t). In 1967, the license was amended to allow operation up to its current power level of 200 kW(t). The UMRR is a pool reactor that utilizes low enriched uranium (LEU) fuel for the core. Light water is used as the coolant and moderator. The low power level of the core allows for sufficient cooling by natural convection. The reactor's experimental facilities include a pneumatic transfer system, in-core irradiation tube, a beam tube, and a thermal column. The licensee has requested an amendment that changes the administrative responsibilities.

3.0 REGULATORY EVALUATION

In it's application, the licensee referenced the American Nuclear Society (ANS) guidance documents, "Selection and Training of Personnel for Research Reactors" ANSI/ANS -15.4-1988 and "The Development of Technical Specifications for Research Reactors," ANSI/ANS -15.1-1990. ANSI/ANS15.4 defines the responsibilities for various levels of organization as follows:

Level Two. Individual responsible for reactor facility operation (i.e., Facility Director/ Administrator).

Level Three. Individual responsible for day-to-day operation or shift (i.e., supervisory operator).

Class A reactor operator. An individual who is certified to direct the activities of Class B reactor operators. Such an individual is also a reactor operator and is commonly referred to as Senior Reactor Operator.

Class B reactor operator. An individual who is certified to manipulate the controls of a reactor. Such individual is commonly referred to as Reactor Operator.

The Licensee proposes to change the TS to eliminate the Facility Director being required to obtain and maintain a NRC Senior Operator license. The TS 6.1.2 currently reads:

> TS 6.1.2 The Director of the Nuclear Reactor Facility is the contact person for the NRC and will have overall responsibility for management of the facility (Level 2). The Director shall have a minimum of six years of nuclear experience. The Director shall have a Bachelor's (or higher) degree in engineering or science. Equivalent education or experience may be substituted for a degree. The degree may fulfill four years of the six years of nuclear experience required. As soon as possible after being assigned to the position, the Director shall obtain and maintain a NRC Senior Operators license.

The Licensee proposes to change the TS to read as follows:

> TS 6.1.2 The Director of the Nuclear Reactor Facility is the contact person for the NRC and will have overall responsibility for management of the facility (Level 2). The Director shall have a minimum of six years of nuclear experience. The Director shall have a Bachelor's (or higher) degree in engineering or science. Equivalent education or experience may be substituted for a degree. The degree may fulfill four years of the six years of nuclear experience required.

The ANS/ANSI 15.4-1988, “American National Standard for the Selection and Training of Personnel for Research Reactor”, states:

> 4.3 Level Two. At the time of appointment to the position, the Level Two person shall have a minimum of six years of nuclear experience. The individual shall have a recognized baccalaureate or higher degree in an engineering or scientific field. Education or experience that is job-related may be substituted for a degree on a case-by-case basis. The degree may fulfill four years of the six years of nuclear experience required on a one-for-one time basis. The individual shall receive appropriate facility-specific training based upon a comparison of the individual’s background and abilities with the responsibilities and duties of the position. Because of the educational and experience requirements of the position, continued formal training may not be required. If this individual is also to be certified, the individual shall meet the certification requirements of the respective position and chartering or licensing agency.

In accordance with the guidance, the Reactor Director is not required to obtain and maintain a NRC Senior Operator license. In most research reactor facilities, the organization consists of small staff. UMRR currently has seven Senior Reactor Operators and ten Reactor Operators. Obtaining a Senior Operator license for Reactor Director is not necessary for UMRR. The NRC staff found that the proposed amendment in Section 6.1.2 is consistent with the guidance of ANS/ANSI 15.4-1988. Accordingly, the proposed change is accepted.

The licensee also proposes to change the level of approval for minor modifications of procedures. TS 6.3 currently reads:

> TS 6.3 Substantive changes to the approved procedures shall be made only with the approval of the Radiation Safety Committee. Changes that do not change the original intent of the procedures may be made with the approval of the Facility Director.

The Licensee proposes to change the TS to read as follows:

> TS 6.3 Substantive changes to the previous procedures shall be approved by the Radiation Safety Committee, and the Facility Director (Level 2) or designated alternates. Minor modifications to the original procedures which do not change their original intent may be made by the Facility Manager (Level 3) or higher but the modifications must be approved by the Facility Director (Level 2) or designated alternates within 14 days.

The ANS/ANSI 15.1-1990, “The Development of Technical Specifications for Research Reactors ”, states:

> 6.4 Substantive changes to the previous procedures shall be made effective only after documented review by the review group and approval by Level 2 or designated alternates. Minor modifications to the original procedures which do not change their original intent may be made by Level 3 or higher but the modifications must be approved by Level 2 or designated alternates within 14 days. Temporary deviations from the procedures may be made by the responsible Class A operator or higher individual present, in order to deal with special or unusual circumstances or conditions. Such deviations shall be documented and reported to Level 2 or designated alternates.

The NRC staff has reviewed the proposed change to the TS and concluded that it is consistence with the guidance and does not impact the licensee’s ability to meet the requirements of 10 CFR 50.36 and ANS/ANSI 15.1. Therefore, the staff finds it acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the category of recordkeeping, reporting, and administrative procedures and requirements. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activities; (3) such activities will be conducted in compliance with the Commission's regulations, and the issuance of this amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: John T. Nguyen, NRR

Date: