

February 8, 2016

Mr. Ralph Butler, Executive Director
University of Missouri-Columbia
Research Reactor Center
1513 Research Park Drive
Columbia, MO 65211

SUBJECT: UNIVERSITY OF MISSOURI AT COLUMBIA – REQUEST FOR ADDITIONAL
INFORMATION RE: UPDATED FINANCIAL INFORMATION FOR RENEWAL OF
FACILITY OPERATING LICENSE NO. R-103 FOR THE UNIVERSITY OF
MISSOURI AT COLUMBIA RESEARCH REACTOR (TAC NO. ME1580)

Dear Mr. Butler:

The U.S. Nuclear Regulatory Commission (NRC) is continuing its review of your application for the renewal of Facility Operating License No. R-103, dated August 31, 2006 (redacted versions of the application and supplement are available on the NRC's public web site at www.nrc.gov under Agencywide Documents Access and Management System Accession Nos.: ML062540114 - cover letter; ML092110573 - Safety Analysis Report (SAR), Chapters 1-9; ML092110597 - SAR, Chapters 10-18), for the University of Missouri - Columbia Research Reactor and supplemented, in part, by your letter dated March 12, 2013 (ADAMS Accession No. ML13079A214).

During the course of our review, some of the information provided by your submittal has become outdated and needs to reflect the current financial status of your facility. Please provide responses to the enclosed request for additional information within 30 days of the date of this letter.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.30(b), "Oath or affirmation," you must execute your response in a signed original document under oath or affirmation. Your response must be submitted in accordance with 10 CFR 50.4, "Written communications." Information included in your response that is considered sensitive or proprietary, that you seek to have withheld from the public, must be marked in accordance with 10 CFR 2.390, "Public inspections, exemptions, requests for withholding." Any information related to security should be submitted in accordance with 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements." Following receipt of the additional information, we will continue our evaluation of your renewal request.

R. Butler

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If you need additional time to complete this request, or have any questions regarding this review, please contact me at (301) 415-0893, or by electronic mail at Geoffrey.Wertz@nrc.gov.

Sincerely,

/RA Alexander Adams for/

Geoffrey A. Wertz, Project Manager
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-186

Enclosure:
As stated

cc: See next page

University of Missouri-Columbia

Docket No. 50-186

cc:

Les Foyto, Associate Director
Reactor and Facilities Operations
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1513 Research Park Drive
Columbia, MO 65211

Homeland Security Coordinator
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P.O. Box 570
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A-95 Coordinator
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Jefferson City, MO 65101

Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

R. Butler

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Enclosure:
As stated

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ADAMS Accession No: ML16028A255 *concurrence via email NRR-106

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NAME	GWertz	NParker	AAdams	GWertz /AAdams for/
DATE	1/28/16	1/28/16	2/8/16	2/8/16

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OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR ADDITIONAL INFORMATION

UPDATED FINANCIAL QUALIFICATIONS FOR THE RENEWED LICENSE FOR

THE UNIVERSITY OF MISSOURI-COLUMBIA RESEARCH REACTOR

LICENSE NO. R-103; DOCKET NO. 50-186

As required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.33(f)(2), “[a]pplicants to renew or extend the term of an operating license for a nonpower reactor shall include the financial information that is required in an application for an initial license.” To comply with this requirement, you provided updated financial information by letter dated March 12, 2013 (Agencywide Documents Access and Management System Accession No. ML13079A214), for the University of Missouri-Columbia (MU, the applicant) application (the application) for a renewed facility operating license for the University of Missouri-Columbia Research Reactor (MURR). In some cases, the responses provided in the March 12, 2013, letter may not have changed (e.g., Requests for Additional Information (RAIs) 4.(b) and 4.(c)). In that case, please indicate in your response “no change, no additional information is necessary,” and the U.S. Nuclear Regulatory Commission (NRC) staff will consider your response provided in the March 12, 2013, submittal to remain current.

1. NRC staff will analyze the financial statements for the current year, which are required by 10 CFR 50.71(b), to determine if the applicant is financially qualified to operate the MURR. Since MU’s financial statements included with the application are out of date, please provide a copy of the latest financial statements for the NRC staff’s review.
2. Pursuant to 10 CFR 50.33(f)(2), “[t]he applicant shall submit estimates for total annual operating costs for each of the first five years of operations of the facility.” Since the information included in the application is now out of date, please provide the following additional information:
 - a. Projected operating costs of the MURR for each of the fiscal years (FY) 2016 thru FY 2020 (the first five year period after the projected license renewal).
 - b. MU’s source(s) of funding to cover the operating costs for the above FYs.
3. The application references a decommissioning cost estimate for the MURR that was developed using NUREG/CR-1756, “Technology, Safety and Costs of Decommissioning Reference Research and Test Reactors.” The application states that the decommissioning cost estimate was \$47.3 million in 2009 dollars, including safe storage (SAFSTOR) costs, and a 25 percent contingency factor. The NRC staff needs the following additional information to complete its review of the MURR decommissioning cost estimate:

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- a. A current decommissioning cost estimate in 2016 dollars for the MURR to meet the NRC's radiological release criteria for decommissioning the facility for unrestricted use, pursuant to 10 CFR 50.75(d)(2). Accordingly, describe the basis for how the cost estimate was developed (if NUREG/CR-1756 is still the basis for the decommissioning cost estimate, please so state).
 - b. A summary of total decommissioning costs by labor, waste disposal, other items (such as energy, equipment, and supplies) in current dollars, and a 25 percent contingency factor.
 - c. Provide an update of the total and annual MURR SAFSTOR costs provided in your March 12, 2013, response to RAI No. 3.(c) to current dollars as well as the supporting bases for the costs associated with the SAFSTOR option. Also, please provide a numerical example showing how the SAFSTOR costs will be escalated each year.
 - d. Provide a numerical example showing how the 2016 cost estimate will be updated periodically in the future.
4. The application indicates that MU plans to use a statement of intent (SOI) as the method to provide decommissioning funding assurance, as provided for by 10 CFR 50.75(e)(1)(iv). Where the applicant intends to use a SOI, the NRC staff must find that the applicant "is a Federal, State, or local government licensee." To make this finding, the applicant must state that it is a State government organization and that the decommissioning funding obligations of the applicant are backed by the State government, and also provide corroborating documentation. Further, the applicant must provide documentation verifying that the signator of the SOI is authorized to execute said document that binds the University. This document may be a governing body resolution, management directives, or other form that provides an equivalent level of assurance. As the application does not include all of the above information, please submit the following:
- a. An updated SOI which includes the current (2016 dollars) cost estimate for decommissioning, a statement that funds for decommissioning will be obtained when necessary, and the signator's oath or affirmation attesting to the information.
 - b. Documentation that corroborates the statement in the application that MU is a State agency and a State of Missouri government licensee under 10 CFR 50.75(e)(2)(iv).

- c. A statement as to whether the decommissioning funding obligations for the MURR are backed by the State of Missouri government. The application must also present documentation that corroborates this statement. For example, the documentation may be a copy of or complete citation to a state statute that expressly provides that the obligations, or at least the decommissioning funding obligations, of the applicant are backed or supported by the full faith and credit of the State of Missouri, or an opinion of the applicant's General Counsel with citations to statutes, regulations, and/or case law that the obligations, or at least those with respect to the decommissioning funding of the applicant are obligations backed or supported by the full faith and credit of the State of Missouri.

- d. Documentation verifying that the signator of the SOI is authorized to execute such a document that binds the applicant financially. For example, provide a copy of MU's governing board or equivalent resolution that shows that the signator of the SOI has been authorized by MU to bind MU financially, at least with respect to funding the decommissioning of the MURR, or provide a copy of an official MU delegation of authority showing that the signator of the SOI is authorized to bind MU financially, at least with respect to funding the decommissioning of the MURR.