



[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-186; NRC-2013-0090]**

**University of Missouri – Columbia Research Reactor**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** License renewal; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) issued a renewal of Facility Operating License No. R-103, held by the Curators of the University of Missouri – Columbia (the licensee), for the continued operation of its University of Missouri - Columbia Research Reactor (MURR or the reactor) at a maximum steady-state power level of 10 megawatts thermal (MWt) for an additional 20 years from the date of issuance. The MURR facility is located in the University Research Park, adjacent to the main campus of the University of Missouri-Columbia, in Boone County, Columbia, Missouri.

**DATE:** The renewed facility operating license No. R-103 is effective on January 4, 2017.

**ADDRESSES:** Please refer to Docket ID **NRC-2013-0090** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2013-0090**. Address questions about NRC dockets to Carol Gallagher;

telephone: 301-415-3463; e-mail: [Carol.Gallagher@nrc.gov](mailto:Carol.Gallagher@nrc.gov). For technical questions, contact the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):**

You may obtain publicly-available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[ADAMS Public Documents](#)" and then select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). The ADAMS accession number for each document referenced (if it available in ADAMS) is provided the first time that a document is referenced. For the convenience of the reader, the ADAMS accession numbers are provided in a table in the "Availability of Documents" section of this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

**FOR FURTHER INFORMATION CONTACT:** Geoffrey A. Wertz, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-0893; e-mail: [Geoffrey.Wertz@nrc.gov](mailto:Geoffrey.Wertz@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Discussion**

The NRC has issued renewed Facility Operating License No. R-103, held by the licensee, which authorizes continued operation of the MURR, located in the University Research Park, adjacent to the main campus of the University of Missouri – Columbia, in Columbia,

Missouri. The MURR is an open pool-type reactor which is light-water moderated and cooled. It is licensed to operate at a maximum steady state power level of 10 MWt. The renewed Facility Operating License No. R-103 will expire 20 years from its date of issuance.

The renewed facility operating license complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in chapter I of title 10 of the *Code of Federal Regulations* (10 CFR), and sets forth those findings in the renewed facility operating license. The agency afforded an opportunity for hearing in the Notice of Opportunity for Hearing published in the *Federal Register* on May 20, 2013 (78 FR 29393). The NRC received no request for a hearing or petition for leave to intervene following the notice.

The NRC staff prepared a safety evaluation report (SER) for the renewal of Facility Operating License No. R-103 and concluded, based on that evaluation, that the licensee can continue to operate the facility without endangering the health and safety of the public. The NRC staff also prepared an environmental assessment and finding of no significant Impact for the renewal of the facility operating license, noticed in the *Federal Register* on November 29, 2016 (81 FR 86024), and concluded that renewal of the facility operating license will not have a significant impact on the quality of the human environment.

## **II. Availability of Documents**

The documents identified in the following table are available to interested persons through ADAMS accession numbers, as indicated. The SER, prepared by the NRC staff for the license renewal, is available under ADAMS Accession No. ML16124A887.

<b>DOCUMENT</b>	<b>ADAMS Accession No.</b>
Application for License Renewal for the University of Missouri-Columbia Research Reactor as Per 10 CFR 2.109 – Cover Letter, August 31, 2006	ML062540114
Safety Analysis Report for the University of Missouri-Columbia Application for License Renewal Application – Volume 1 of 2 – Redacted, August 31, 2006	ML092110573
Safety Analysis Report for the University of Missouri-Columbia Application for License Renewal – Chapters 10-18, Volume 2 of 2 – Redacted, August 31, 2006	ML092110597
University of Missouri Research Reactor (MURR) Environmental Report for License Renewal, August 31, 2006	ML062540121
Written Communication as Specified by 10 CFR 50.4 (b)(1) Regarding the Response to the “University of Missouri at Columbia – Request for Additional Information RE: License Renewal Environmental Report,” January 29, 2010	ML100330073
University of Missouri, Columbia – Response to NRC Request for Additional Information, Redacted, July 16, 2010	ML12354A237
University of Missouri – Columbia Licensee Response to NRC Request for Additional Information - Chapter 10, Related to Amendment Information Only, Redacted, August 31, 2010	ML120050315
University of Missouri, Columbia, Response to Request for Additional Information Regarding License Renewal, September 3, 2010	ML102500533
University of Missouri, Columbia – Response to NRC Request for Additional Information, dated June 1, 2010, (TAC No. ME1580) Redacted, September 30, 2010	ML12355A019
University of Missouri, Columbia - Response to NRC Request for Additional Information 45-Day Response Questions (TAC No. ME1580) Redacted, October 29, 2010	ML12355A023
Written Communication as Specified by 10 CFR 50.4 (b)(1) Regarding the Response to the “University of Missouri at Columbia – Request for Additional Information RE: License Renewal, Safety Analysis Report, Complex Questions,” dated May 6, 2010, October 29, 2010	ML103060018
University of Missouri, Columbia – Response to NRC Request for Additional Information 45-Day Response Questions (TAC No. ME1580) Redacted, November 30, 2010	ML12355A026
University of Missouri-Columbia Research Reactor Response to Request for Additional Information Regarding Renewal Request for Amendment Facility Operating License R-103, March 11, 2011	ML110740249
University of Missouri-Columbia Research Reactor’s Response to NRC Request for Additional Information Regarding a Renewal Request for Amended Facility Operating License R-103, September 8, 2011	ML11255A003
University of Missouri – Columbia Research Reactor, Written Communication as Specified by 10 CFR 50.4 (b)(1) Regarding Responses to the University of Missouri at Columbia – Request for Additional Information RE: License Renewal, Safety Analysis Report, January 6, 2012	ML12010A186

University of Missouri, Columbia – Licensee Response to NRC Request for Additional Information dated May 6, 2010 (Complex Questions) and June 1, 2012 (45-Day Response Questions) RE: License Renewal (TAC No. ME1580) Redacted, June 28, 2012	ML12346A004
Written Communication as Specified by 10 CFR 50.4 (b)(1) Regarding the Response to the University of Missouri at Columbia – Request for Additional Information Regarding the Renewal of Facility Operating License No. R-103 for the University of Missouri, January 28, 2015	ML15034A474
University of Missouri-Columbia – Response to Request for Additional Information Regarding Renewal Request for Amended Facility Operating License, July 31, 2015	ML15216A122
University of Missouri-Columbia, Request for a copy of the Emergency Plan in Support of Renewal of Amended Facility License No. R-103, September 15, 2015	ML15260A439
University of Missouri, Columbia-Responses to NRC Request for Additional Information, Dated April 17, 2015, Regarding Renewal Request for Amended Facility Operating License, October 1, 2015	ML15275A314
University of Missouri-Columbia - Response to NRC Request for Additional Information Dated December 17, 2015, Regarding Renewal Request for License No. R-103, February 8, 2016	ML16041A221
University of Missouri at Columbia – Responses to NRC Request for Additional Information dated February 8, 2016 Regarding Renewal Request for Amendment, April 8, 2016	ML16103A536
University of Missouri- Columbia Research Reactor, Response to Request for Additional Information on License Renewal Amendment Request, April 15, 2016	ML16110A164
University of Missouri-Columbia Research Reactor's Responses to the NRC Request for Additional Information, Dated October 28, 2015, Regarding Our Renewal Request for Amended Facility Operating License No. R-103, May 31, 2016	ML16155A132
University of Missouri-Columbia Response to Request for Additional Information Regarding the Proposed Technical Specifications for the License Renewal, July 25, 2016	ML16209A236
University of Missouri-Columbia Response to NRC Request for Additional Information Regarding Renewal for Amended Facility Operating License, August 31, 2016	ML16246A010
University of Missouri-Columbia Response to NRC Request for Additional Information Regarding the Technical Specifications for the Renewal for Amended Facility Operating License, November 7, 2016	ML16313A517
University of Missouri-Columbia Response to NRC Request for Additional Information Regarding the Technical Specifications for the Renewal for Amended Facility Operating License, November 15, 2016	ML16321A485

University of Missouri-Columbia Response to NRC Request for Additional Information Regarding the Security Plan for the Renewal for Amended Facility Operating License, November 15, 2016	ML16321A455
University of Missouri-Columbia Response to NRC Request for Additional Information Regarding the Renewal for Amended Facility Operating License, December 14, 2016	ML16350A424
University Of Missouri – Columbia Regarding Issuance of Renewed Facility Operating License No. R-103 for The University Of Missouri – Columbia Research Reactor (TAC No. ME1580) January 4, 2017	ML16124A885

Dated at Rockville, Maryland, this 5th day of January 2017.

For the Nuclear Regulatory Commission

Michael Balazik, Chief (Acting),  
Research and Test Reactors Licensing Branch,  
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Office of Nuclear Reactor Regulation.

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