

**NUCLEAR REGULATORY COMMISSION**

**[Docket No. 50-182; NRC-2011-0186]**

**Purdue University**

**Purdue University 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-87, held by the Purdue University (the licensee) for the continued operation of its Purdue University Research Reactor (PUR-1 or the reactor) for an additional 20 years.

**DATE:** The operating license renewal for Facility Operating License No. R-87 is effective on October 31, 2016.

**ADDRESSES:** Please refer to Docket ID **NRC-2011-0186** 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-2011-0186**. 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). 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:** Cindy K. Montgomery, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-3398; e-mail: [Cindy.Montgomery@nrc.gov](mailto:Cindy.Montgomery@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Discussion**

The NRC has issued renewed Facility Operating License No. R-87, held by the licensee, which authorizes continued operation of the Purdue University Research Reactor, located on the campus of Purdue University, in the city of West Lafayette, Tippecanoe County, Indiana. The PUR-1 is a heterogeneous pool-type, nuclear research reactor that uses Materials Testing Reactor plate type fuel. The PUR-1 is licensed to operate at a steady-state power level of

12 kilowatts thermal (kW(t)). The renewed Facility Operating License No. R-87 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 NRC afforded an opportunity for hearing in the Notice of Opportunity for Hearing published in the *Federal Register* on November 3, 2011 (76 FR 68225). 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 for the renewal of Facility Operating License No. R-87 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 October 27, 2016 (81 FR 74822), 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 as indicated.

Document	ADAMS Accession No.
Application for relicense of License Number R-87 with Power Uprate (July 7, 2008)	ML083040443
Purdue University Safety Analysis Report (June 30, 2008) [Redacted Version]	ML111890201
Purdue University - Request for Additional Information (RAI) Regarding License Renewal. [Decommissioning Funding Statement of Intent] (June 3, 2010)	ML101620125
Purdue University - Request For Additional Information Regarding The Purdue University Reactor License Renewal (Tac No. Me 1594), Responses To RAIs Dated 24 March 2010 [Responses To ML100820019, fin assurance, SOI, sig auth, fin rpt] (June 4, 2010)	ML101620184
Response to Request for Additional Information Regarding the Purdue University Reactor License Renewal (TAC ME1594), Response to RAIs Dated 6 July 2011 (ML101460429). (November 15, 2011)	ML11320A287
Purdue University - Request for Additional Information Regarding the License Renewal, Responses to RAIs Dated 6 July 2011 [Responses 11, 12, 13, 15, 16, 18, 21, 23, 25, 27, 28, 30, 31, 33, 35, 36, and 37] (January 4, 2012)	ML12006A193
Purdue University - Responses to the Request for Additional Information Regarding the Purdue University Reactor License Renewal dated July 6, 2011 [Responses 3, 4, 7, 10, 17, 19, 20, 22, 24, 29, 34, and 40] (January 30, 2012)	ML12031A223
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal (TAC NO. ME 1594), Responses to RAIS (ML103400115 and ML103400250) (Redacted Version). [Responses 45, 55, 62, 65, 66, 67, 68, 70, and 73] (January 31, 2012)	ML14234A109
Request for Additional Information Regarding the Purdue University Reactor License Renewal (TAC ME1594), Responses to RAIs (ML103400115 and ML103400250). [Responses 43, 51, 56, 60, and 61] (June 1, 2012)	ML12156A364
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal (TAC No. ME1594), Responses to RAIs (ML103400115 and ML103400250). [Response 46, 47, 52, 57, and 59] (June 15, 2012)	ML12170B018
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal, Responses to RAIs (ML103400115 and ML103400250). [Response 48, 58, 96, 97 and 98] (June 29, 2012)	ML121850004
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal, Response to RAI. [Response 49, 50, 53, 64, and 72] (July 13, 2012)	ML12201A070

Purdue University - Response to Request for Additional Information Regarding Purdue University Reactor License Renewal (TAC No. ME1594, Responses to RAIs (ML103400115 and ML103400250) [Responses 54, 69, 77, 78, and 92] (August 11, 2012)	ML12226A400
Purdue University - Response to Request Request for Additional Information Regarding the Purdue University Reactor License Renewal (TAC ME1594). [Responses 54, 69, 77, 78, and 92] (April 10, 2013)	ML13101A044
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). [RAI cover letter for responses to Aug 29, 2015 NRC letter] (July 24, 2015)	ML15210A280
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). Part 1 of 5. [RAI Responses part 1 of 5: responses (1-29), TS (30-64), d/c cost estimate (65-68), Requal (69-73), SAR Chs. 1-5 (70-162)] (July 24, 2015)	ML15210A282
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). Part 2 of 5. [RAI Responses part 2 of 5 (SAR chs. 6-15)] (July 24, 2015)	ML15210A283
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). Part 3 of 5. [RAI Responses Part 3 of 5 (drawings)] (July 24, 2015)	ML15210A285
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). Part 4 of 5. [RAI Responses Part 4 of 5 (drawings)] (July 24, 2015)	ML15210A287
Purdue University - Request for Additional Information Regarding the Purdue University Reactor License Renewal Application (TAC No. ME1594), Responses to Letter Dated August 29, 2014 (ML14115A221). Part 5 of 5. [RAI Responses part 5 of 5 (NATCON, Procedures, Drawings)] (July 24, 2015)	ML15210A288
Purdue University - Response to NRC Request for Additional Information Regarding Physical Security Plan Review for License Renewal (January 29, 2016)	ML16047A382
Purdue University - Re-Submittal Response to NRC Request for Additional Information Regarding Physical Security Plan Review for License Renewal (February 26, 2016)	ML16083A219
Purdue Re-Submittal of Response to NRC Request for Additional Information Re: Physical Security Plan Review for License Renewal (March 31, 2016)	ML16102A123
Purdue University - Second Re-Submittal of Response to NRC Request for Additional Information Regarding Physical Security Plan Review for License Renewal (May 9, 2016)	ML16134A143

Purdue University School of Nuclear Engineering Notice of ADAMS Document Correction, PUR-1, Docket 50-182, ML16187A371. Technical Specifications, Proposed Amendment 13 Enclosed. [Correction of the TSs, originally submitted under ML16187A371] (July 7, 2016)	ML16193A681
Purdue University Responses to Request for Additional Information re PUR-1 License Renewal and Power Uprate. [Responses to RAIs ML15328A314] (July 19, 2016)	ML16207A426
Purdue University - Response to Request for Additional Information Regarding the Reactor License Renewal Application, Responses to Letter dated July 25, 2016 (September 19, 2016)	ML16267A465
Purdue University – Explanation of Technical Specification Changes and Emergency Operator Action (September 29, 2016)	ML16277A165

Dated at Rockville, Maryland, this 1<sup>st</sup> day of November, 2016.

For the Nuclear Regulatory Commission

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Duane A. Hardesty, Acting Chief,  
Research and Test Reactors Licensing Branch,  
Division of Policy and Rulemaking,  
Office of Nuclear Reactor Regulation.