

July 8, 2016

Dr. Enrique Lavernia  
Provost and Executive Vice Chancellor  
University of California, Irvine  
509 Aldrich Hall  
Irvine, CA 92697-2025

SUBJECT: UNIVERSITY OF CALIFORNIA, IRVINE - ISSUANCE OF RENEWED FACILITY  
OPERATING LICENSE NO. R-116 FOR THE UNIVERSITY OF CALIFORNIA,  
IRVINE, NUCLEAR REACTOR FACILITY (TAC NO. ME1579)

Dear Dr. Lavernia:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Renewed Facility Operating License No. R-116 for the University of California, Irvine, in response to the application for license renewal dated October 18, 1999, as supplemented on April 24, and June 2, 2000; January 27, March 23, May 17, July 14, August 25 (two letters), October 20 (two letters), and October 29, 2010; June 7 (two letters), June 24, July 7, August 1, October 3, and December 2, 2011 (2 letters); January 12, March 1, and September 11, 2012; February 26, March 5, March 7, July 11, and October 8, 2014 (2 letters); December 22, 2015 (2 letters); and April 22, April 29, and May 13, 2016. The renewed facility operating license is effective as of the date of this letter and shall expire at midnight, 20 years from the date of issuance, unless terminated sooner.

In accordance with agency practice, the renewed license issued by the NRC restates the license in its entirety, incorporating all changes and amendments made since the issuance of the original license, as appropriate. Also enclosed with the renewed facility operating license is the safety evaluation report that documents the license renewal review. A Notice of Issuance of Renewed Facility Operating License No. R-116 is being sent to the Office of the *Federal Register* for publication. The Notice of Availability of Environmental Assessment and Finding of No Significant Impact for the University of California, Irvine Nuclear Reactor Facility was published in the *Federal Register* on February 13, 2012 (77 FR 7610). A supplement to this Notice was published on May 8, 2013 (78 FR 26812), to provide the determination that the U.S. Court of Appeals Waste Confidence Ruling is not applicable to research and test reactor licensing.

E. Lavernia

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If you have any questions, please contact me at 301-415-2856 or by electronic mail at [Michael.Balazik@nrc.gov](mailto:Michael.Balazik@nrc.gov).

Sincerely,

*/RA/*

Michael F. Balazik, Project Manager  
Research and Test Reactors Licensing Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-326

Enclosures:

1. Facility Operating License No. R-116
2. Safety Evaluation Report

cc: See next page

University of California at Irvine

Docket No. 50-326

cc:

Dr. Reginald M. Penner, Chair  
Department of Chemistry  
University of California, Irvine  
Irvine, CA 92697-2025

Radiological Health Branch  
California Department of Public Health  
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Dr. George E. Miller, Director  
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Reactor Newsletter  
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202 Nuclear Sciences Center  
Gainesville, FL 32611

Professor Howard Gilman, Chancellor  
University of California Irvine  
510 Aldrich Hall  
Irvine, CA 92697

E. Lavernia

- 2 -

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**\* concurred via e-mail**

**NRR-106**

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Enclosure 1

University of California, Irvine  
Docket No. 50-326  
Facility Operating License

ADAMS Accession No. ML13030A395

THE BOARD OF REGENTS OF THE UNIVERSITY OF CALIFORNIA

DOCKET NO. 50-326

RENEWED FACILITY OPERATING LICENSE

License No. R-116

1. The U.S. Nuclear Regulatory Commission (“the Commission”) has found that:
  - A. The application for renewal of Facility Operating License No. R-116 filed by the Board of Regents of the University of California (“the licensee”), dated October 18, 1999, as supplemented on April 24, and June 2, 2000; January 27, March 23, May 17, July 14, August 25 (two letters), October 20 (two letters), and October 29, 2010; June 7 (two letters), June 24, July 7, August 1, October 3, and December 2, 2011 (2 letters); January 12, March 1, and September 11, 2012; February 26, March 5, March 7, July 11, and October 8, 2014 (2 letters); December 22, 2015 (2 letters); and April 22, April 29, and May 13, 2016 (“the application”), complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (“the Act”), and the Commission’s rules and regulations set forth in Title 10 of the *Code of Federal Regulations* (10 CFR), Chapter I;
  - B. Construction of the University of California, Irvine, Nuclear Reactor Facility (“the facility”) was completed in substantial conformity with the Construction Permit No. CPRR-107, the provisions of the Act, and the rules and regulations of the Commission;
  - C. The facility will operate in conformity with the application, as supplemented, the provisions of the Act, and the rules and regulations of the Commission;
  - D. There is reasonable assurance that: (i) the activities authorized by this license can be conducted without endangering the health and safety of the public, and (ii) such activities will be conducted in compliance with the Commission’s regulations;
  - E. The licensee is technically and financially qualified to engage in the activities authorized by this license in accordance with the rules and regulations of the Commission;
  - F. The applicable provisions of 10 CFR Part 140, “Financial Protection Requirements and Indemnity Agreements,” have been satisfied;

- G. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
  - H. The issuance of this license is in accordance with 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," of the Commission's regulations and all applicable requirements have been satisfied; and
  - I. The receipt, possession and use of byproduct and special nuclear materials as authorized by this facility operating license will be in accordance with the Commission's regulations in 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material."
2. Accordingly, Facility Operating License No. R-116 is hereby renewed in its entirety to read as follows:
- A. This license applies to the University of California, Irvine, Nuclear Reactor Facility (herein "the facility") owned by the Board of Regents of the University of California (herein "the licensee"), located on the licensee's campus in Irvine, California, and described in the licensee's application for license renewal, dated October 18, 1999, as supplemented.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Board of Regents of the University of California as follows:
    - 1. Pursuant to subsection 104c of the Act and 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to possess, use, and operate the facility as a utilization facility at the designated location in accordance with the procedures and limitations described in the application and set forth in this license.
    - 2. Pursuant to the Act and 10 CFR Part 70, to receive, possess, and use, but not separate, in connection with operation of the facility:
      - a. up to 5.0 kilograms of contained uranium-235 enriched to less than 20 percent in the form of TRIGA-type reactor fuel;
      - b. up to 25 grams of contained uranium-235 enriched to any enrichment in the form of detectors, fission plates, foils, chemical compounds, and solutions;
      - c. such special nuclear material as may be produced by the operation of the facility; and,
      - d. such special nuclear material as may be received in TRIGA fuel elements that are transferred to License No. R-116 after utilization in other research reactor facilities, provided that the total amount not exceed the limit in License Condition 2.B.2.a.

3. Pursuant to the Act and 10 CFR Part 30, to receive, possess, and use, in connection with the operation of the facility:
  - a. a sealed 3-curie americium-beryllium neutron source; and,
  - b. such byproduct material as may be produced by operation of the reactor, which cannot be separated except for byproduct material produced in non-fueled reactor experiments.
  
- C. This license shall be deemed to contain and is subject to the conditions specified in 10 CFR Parts 20, 30, 50, 51, 55, 70, and 73 of the Commission's regulations; is subject to all applicable provisions of the Act, and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
  1. Maximum Power Level

The licensee is authorized to operate the facility at a steady-state power level not in excess of 250 kilowatts (thermal) and to pulse the reactor in accordance with the limitations in the Technical Specifications.
  
  2. Technical Specification

The Technical Specifications contained in Appendix A are hereby incorporated in its entirety in the license. The licensee shall operate the facility in accordance with the Technical Specifications.
  
  3. Physical Security Plan

The licensee shall maintain and fully implement all provisions of the Commission-approved physical security plan, including changes made pursuant to the authority of 10 CFR 50.54(p). The approved physical security plan, entitled "Physical Security Plan, Nuclear Reactor Facility, University of California, Irvine," dated October 2014, consists of documents withheld from public disclosure pursuant to 10 CFR 73.21



This license is effective as of the date of issuance and shall expire at midnight, 20 years from the date of issuance.

For the Nuclear Regulatory Commission

*/RA/*

William M. Dean, Director  
Office of Nuclear Reactor Regulation

Attachment:  
Appendix A, Technical Specifications

Date of Issuance: July 7, 2016

Attachment

Appendix A, "Technical Specifications"

Technical Specifications and Bases for  
the University of California, Irvine Nuclear Reactor Facility

Enclosure 2

Safety Evaluation Report  
Safety Evaluation Report Related to the  
Renewal of the Facility Operating License for the  
University of California, Irvine Nuclear Reactor Facility