

November 30, 2016

Colonel L. Andrew Huff, Director
Armed Forces Radiobiology Research Institute
8901 Wisconsin Avenue
Bethesda, MD 20889-5603

SUBJECT: ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE – ISSUANCE OF
RENEWED FACILITY OPERATING LICENSE NO. R-84 FOR THE ARMED
FORCES RADIOBIOLOGY RESEARCH INSTITUTE RESEARCH REACTOR
(TAC NO. ME1587)

Dear Colonel Huff:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Renewed Facility Operating License No. R-84 for the Armed Forces Radiobiology Research Institute Research Reactor in response to the application for license renewal dated June 24, 2004, as supplemented on March 4, August 13, September 27, October 21, and December 15, 2010; February 7, June 20, September 6, October 20, and November 28, 2011; January 17, April 20, and September 21, 2012; June 28, and August 27, 2013; December 4, 2014; March 30, 2015; and February 9, February 26, August 5, September 12, September 21, September 26, September 27, September 30, and November 16, 2016. The renewed facility operating license is effective on date of issuance, 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 associated with the license renewal. A Notice of Issuance of Renewed Facility Operating License No. R-84 has been sent to the Office of the Federal Register for publication. The environmental assessment for this renewal was published in the *Federal Register* on November 25, 2016 (81 FR 85268).

L. Huff

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If you have any questions, please contact me at 301-415-3398 or by electronic mail at Cindy.Montgomery@nrc.gov.

Sincerely,

/RA/

Cindy K. Montgomery, Project Manager
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-170

Enclosures:

1. Facility Operating License No. R-84
2. Safety Evaluation Report

cc: See next page

Armed Forces Radiobiology Research

Docket No. 50-170

cc:

Director, Maryland Office of Planning
301 West Preston Street
Baltimore, MD 21201

Montgomery County Executive
101 Monroe Street, 2nd Floor
Rockville, MD 20850

Environmental Program Manager III
Radiological Health Program
Air & Radiation Management Adm.
Maryland Dept of the Environment
1800 Washington Blvd., Suite 750
Baltimore, MD 21230-1724

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

Manager
Nuclear Programs
Maryland Department of Natural Resources
Tawes B-3
Annapolis, MD 21401

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Office	NRR/PRLB/PM	Tech Editor*	NRR/PRLB/LA	OGC	NRR/PRLB/BC
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Office	NRR/DPR/D	NRR/D	NRR/PRLB/P		
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Date	11/23/16	11/30/16	11/30/16		

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ARMED FORCES RADIOBIOLOGY RESEARCH INSTITUTE

DOCKET NO. 50-170

RENEWED FACILITY OPERATING LICENSE

License No. R-84

1. The U.S. Nuclear Regulatory Commission ("the Commission") has found that:
 - A. The application for renewal of Facility Operating License No. R-84 filed by the Armed Forces Radiobiology Research Institute ("the licensee"), dated June 24, 2004, as supplemented by letters dated March 4, August 13, September 27, October 21, and December 15, 2010; February 7, June 20, September 6, October 20, and November 28, 2011; January 17, April 20, and September 21, 2012; June 28, and August 27, 2013; December 4, 2014; March 30, 2015; and February 9, February 26, August 5, September 12, September 21, September 26, September 27, September 30, and November 16, 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 Armed Forces Radiobiology Research Institute (AFRRI) TRIGA-type nuclear reactor was completed in substantial conformity with Construction Permit No. CPRR-61, originally issued to National Naval Medical Center on November 8, 1960, and later transferred to AFRRI, and the application, as amended; 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 licensee is a Federal agency and is therefore exempt from the financial protection requirement of subsection 170a of the Act. AFRRRI has executed an indemnity agreement pursuant to 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements;"
 - 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. 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
 - H. 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-84 is hereby renewed in its entirety to read as follows:
- A. This license applies to the Armed Forces Radiobiology Research Institute TRIGA-Mark F tank-type nuclear reactor facility (herein "the facility") owned by the Armed Forces Radiobiology Research Institute (herein "the licensee"). The facility is located on the grounds of Naval Support Activity Bethesda military installation, in Bethesda, Montgomery County, MD, and described in the licensee's application for license renewal, dated June 24, 2004, as supplemented.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Armed Forces Radiobiology Research Institute 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, the following activities are included:
 - a. to receive, possess, and use, but not separate, in connection with the operation of the facility, up to 5.0 kilograms of contained uranium-235 enriched to less than 20 percent in the form of TRIGA-type reactor fuel;

- b. to receive, possess, and use, but not separate, in connection with the operation of the facility, up to 100 grams total of special nuclear material, of any enrichment, in the form of detectors, fission plates, foils, and solutions; and
 - c. to receive, possess, and use, but not separate, in connection with the operation of the facility, such special nuclear material as may be produced by the operation of the facility.
 - 3. Pursuant to the Act and 10 CFR Part 30, the following activities are included:
 - a. to receive, possess, and use, in connection with the operation of the facility, a sealed 3-curie americium-beryllium neutron source; and,
 - b. to receive, possess, and use, in connection with operation of the facility, such byproduct material as may be produced by operation of the reactor, which can not be separated except for byproduct material produced in non-fueled reactor experiments.
 - 4. Pursuant to the Act and 10 CFR Part 40, "Domestic Licensing of Source Material," to receive, possess, and use, in connection with the operation of the facility, not more than 5.0 kilograms of source material.
- C. This license shall be deemed to contain, and is subject to the conditions specified 10 CFR Parts 20, 30, 40, 50, 51, 55, 70, and 73 of the Commission's regulations; is subject to all 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 reactor at a steady-state power level up to a maximum of 1.1 megawatts (thermal) and to pulse the reactor in accordance with the limitations in the Technical Specifications.
 - 2. Technical Specifications

The Technical Specifications contained in Appendix A are hereby incorporated in their 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 amendments and changes made pursuant to the authority of 10 CFR 50.54(p). The approved physical security plan, entitled "Armed Forces Radiobiology Research Institute, Reactor Facility, Physical Security Plan, Facility Operating License R-84, Docket Number 50-170, June 2015," consists of documents withheld from public disclosure pursuant to 10 CFR 73.21, "Protection of Safeguards Information: Performance Requirements."

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: November 30, 2016