

March 25, 2011

Mr. Robert J. Agasie, Reactor Director  
Nuclear Reactor Laboratory  
Room 130 Mechanical Engineering Building  
1513 University Avenue  
Madison, WI 53706-1572

SUBJECT: UNIVERSITY OF WISCONSIN - ISSUANCE OF RENEWED FACILITY  
LICENSE NO. R-74 FOR THE UNIVERSITY OF WISCONSIN NUCLEAR  
REACTOR (TAC NO. ME1585)

Dear Mr. Agasie:

The U.S. Nuclear Regulatory Commission (NRC) has issued renewed Facility License No. R-74 for the University of Wisconsin Nuclear Reactor in response to the application for renewal dated May 9, 2000, as supplemented by letters dated September 7, 2004; October 17, 2008; June 16 (two letters), July 8, August 11, November 22, December 8, 2010; and January 28, and February 8, 2011. The renewed facility license is effective on the date of this letter and expires at midnight, 20 years from its date of issuance, unless terminated sooner.

In accordance with agency practice, the NRC has restated the license in its entirety, incorporating all changes and amendments made since the issuance of the original license. Enclosed with the renewed facility license is a copy of the safety evaluation report associated with the renewal. A Notice of Issuance of Renewed Facility License No. R-74 is being sent to the Office of the *Federal Register* for publication.

R. Agasie

-2-

The environmental assessment was sent to you under separate cover; however a correction has been forwarded to the Office of the *Federal Register* for publication. The correction was made to add supplemental documentation and to correct dose equivalent values.

If you have any questions, please contact me at 301-415-0893.

Sincerely,

**/JQuichocho for RA/**

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

Docket No. 50-156

Enclosures:

1. Facility License No. R-74
2. Safety Evaluation Report

cc: See next page

University of Wisconsin

Docket No. 50-156

cc:

Mayor of Madison  
City Hall  
210 Martin Luther King, Jr. Boulevard, Room 403  
Madison, Wisconsin 53703

Chairman, Public Service  
Commission of Wisconsin  
610 North Whitney Way  
P.O. Box 7854  
Madison, WI 53707-7854

Manager  
Radiation Protection Section  
Division of Public Health  
Dept of Health and Family Services  
P.O. Box 2659  
Madison, WI 53701-2659

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

Victor Goretsky  
Assistant Director & Radiation Safety Officer  
Department Environmental Health & Safety  
530 Environmental Protection And Safety Bldg  
30 N Murray St  
Madison, WI 53715

Eric C Woolstenhulme  
Idaho National Laboratory  
P.O. Box 1625  
Idaho Falls, ID 83415-3740

R. Agasie

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ACCESSION NO.: Package: ML102370084 Letter: ML102370104 Appendix: ML102370126

Enclosure: ML102370140 \*Input Provided by Memo ML102320148, \*\*Concurrence via e-mail

Office	PRPB:PM	Tech Editor**	PFAB:ABC*	PRLB:PM	PRPB:LA	OGC	PRLB:BC
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Date	9/3/2010	8/16/2010	8/24/2010	9/7/2010	9/3/2010	2/17/2011	3/7/11
Office	DPR:DD	DPR:D	NRR:D	PRPB:PM			
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Date	3/14/11	3/14/11	3/25/11	3/25/11			

**OFFICIAL RECORD COPY**

THE UNIVERSITY OF WISCONSIN

DOCKET NO. 50-156

FACILITY LICENSE

License No. R-74

1. The U.S. Nuclear Regulatory Commission (“the Commission”) has found that:
  - A. The application for renewal of Facility License No. R-74 filed by the University of Wisconsin (“the licensee”) dated May 9, 2000, as supplemented on September 7, 2004; October 17, 2008; twice on June 16, July 8, August 11, November 22, and December 8, 2010; and January 28 and February 8, 2011 (“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, Chapter 1, of the *Code of Federal Regulations* (10 CFR);
  - B. Construction of the University of Wisconsin Nuclear Reactor (“the facility”) has been substantially completed, in conformity with the construction permit number CPRR-97 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 amended, the provisions of the Act, and the rules and regulations of the Commission;
  - D. There is reasonable assurance (i) that the activities authorized by this license can be conducted without endangering the health and safety of the public, and (ii) that 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; and
  - I. The receipt, possession, and use of byproduct and special nuclear materials as authorized by this 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 License No. R-74 is hereby renewed in its entirety to read as follows:
- A. The license applies to the University of Wisconsin's nuclear reactor with the TRIGA nuclear core and control system (herein "the facility") owned by the University of Wisconsin, located on the licensee's campus in Madison, Wisconsin, and described in the licensee's application for license renewal, as supplemented.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the University of Wisconsin as follows:
    - 1. Pursuant to Section 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 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, in connection with operation of the facility, up to 15.0 kilograms of contained uranium-235 enriched to less than 20 percent in the form of TRIGA reactor fuel;
      - b. to receive, possess, and use, in connection with operation of the facility, up to 150 grams of contained uranium-235 of any enrichment in the form of neutron detectors;

- c. to receive, possess, and use, in connection with operation of the facility, up to 16 grams of contained plutonium in the form of plutonium-beryllium neutron source;
  - d. to receive, possess, use, but not separate, in connection with operation of the facility, such special nuclear material as may be produced by operation of the facility; and
  - e. to possess, but not use, up to 18.0 kilograms of contained uranium-235 at equal to or greater than 20 percent enrichment in the form of TRIGA fuel until the existing inventory of this fuel is removed from the facility.
3. Pursuant to the Act and 10 CFR Part 30, 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 cannot be separated except for byproduct material produced in non-fueled 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 steady state power levels not in excess of 1,000 kilowatts (thermal), and in pulse mode, with reactivity insertions not to exceed  $1.4\% \Delta k/k$ .

(2) Technical Specifications

The Technical Specifications contained in Appendix A are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Physical Security Plan

The licensee shall fully implement and maintain in effect all provisions of the physical security plan approved by the Commission and all amendments and changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p), respectively. The approved plan, which is exempt from public disclosure pursuant to the provisions of 10 CFR 73.21, is entitled, "University of Wisconsin Nuclear Reactor Security Plan," Revision 4, submitted by letter dated June 17, 1991.

- D. This license is effective as of the date of issuance and shall expire at midnight twenty years from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Attachment:

Appendix A, Technical Specifications

Date of Issuance: March 25, 2011