

August 14, 2006

Mr. Steven L. Ceccio, Director  
Phoenix Memorial Laboratory  
2301 Bonisteel Boulevard  
University of Michigan  
Ann Arbor, MI 48109

SUBJECT: ISSUANCE OF AMENDMENT NO. 51 TO FACILITY OPERATING LICENSE  
NO. R-28 UNIVERSITY OF MICHIGAN FORD NUCLEAR REACTOR

Dear Mr. Ceccio:

In response to your submittal of March 28, 2005, the Commission has issued the enclosed Amendment No. 51 to Facility Operating License No. R-28 for the University of Michigan Ford Nuclear Reactor. The enclosed amendment amends the license for the Ford Nuclear Reactor to allow for the receipt, possession and use of byproduct, source and special nuclear materials for the maintenance, characterization, and decommissioning of the Ford Nuclear Reactor. A copy of the related safety evaluation supporting Amendment No. 51 is enclosed.

Sincerely,

**/RA/**

Patrick Isaac, Project Manager  
Research and Test Reactors Branch A  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-02

Enclosures: 1. Amendment No. 51  
2. Safety Evaluation

cc w/enclosures: See next page

University of Michigan

Docket No. 50-02

cc:

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Room 1 - State Capitol  
Lansing, MI 48909

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

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THE UNIVERSITY OF MICHIGAN

FORD NUCLEAR REACTOR

DOCKET NO. 50-02

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 51  
License No. R-28

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for an amendment to Facility Operating License filed by the University of Michigan (the licensee), dated March 28, 2005, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the regulations of the Commission as stated in 10 CFR Chapter I;
  - B. The facility will be maintained in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
  - E. This amendment is issued in accordance with 10 CFR Part 51 of the regulations of the Commission and all applicable requirements have been satisfied; and
  - F. Prior notice of this amendment was not required by 10 CFR 2.105 and publication of notice for this amendment is not required by 10 CFR 2.106.
2. Accordingly, the license is amended by addition of conditions 2.B(4) and 2.B(5) to read as follows:
  - 2.B(4) Pursuant to the Act and 10 CFR Part 30, 40 and 70, to receive, possess and use byproduct, source or special nuclear material in the form of activated or contaminated instruments or articles as needed for the maintenance, characterization and decommissioning of the reactor.
  - 2.B(5) Pursuant to the Act and 10 CFR Part 30, 40 and 70, to receive, possess and use

any byproduct materials, up to a maximum of 100 grams of source material as uranium and thorium, and up to a maximum of 100 milligrams total special nuclear material as uranium-233, uranium-235, and plutonium or any combination thereof without restriction to chemical or physical form, for instrument calibration, instrument testing, or instrument checks necessary for maintenance, characterization and decommissioning of the reactor.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA by Alexander Adams for/**

Brian Thomas, Branch Chief  
Research and Test Reactors Branch A  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Date of Issuance: August 14, 2006

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 51 TO

FACILITY OPERATING LICENSE NO. R-28

UNIVERSITY OF MICHIGAN

FORD NUCLEAR REACTOR

DOCKET NO. 50-02

1.0 INTRODUCTION

By letter dated March 28, 2005, the University of Michigan (the licensee) submitted a request to amend the license for the Ford Nuclear Reactor (FNR) to allow for the receipt, possession and use of byproduct, source and special nuclear materials (such as pumps, shielding materials, scabbling equipment, tools, shipping casks, special nuclear material necessary for instrument calibration) necessary to decommission the facility.

2.0 EVALUATION

The FNR permanently ceased critical operations on July 3, 2003, and all fuel was permanently removed from the reactor grid on July 8, 2003, and returned to the U.S. Department of Energy (DOE). The licensee, by letter dated June 27, 2003, requested amending the FNR license to eliminate the conditions that allow possession of special nuclear material. This request was granted by issuance of Amendment No. 47 to Facility Operating License No. R-28, on January 29, 2004. A Decommissioning Plan, submitted for NRC review and approval, was approved on June 26, 2006 (Amendment No. 50). The licensee has requested that the license for the FNR be amended to add condition 2.B(4). The purpose of condition 2.B(4) is to allow the FNR to receive contaminated or activated equipment (such as pumps, shielding materials, scabbling equipment, tools, shipping casks, etc) from other licensees in order to carry out decommissioning activities approved in the decommissioning plan. The new license condition will read:

2.B(4) Pursuant to the Act and 10 CFR Part 30, 40 and 70, to receive, possess and use byproduct, source or special nuclear material in the form of activated or contaminated instruments or articles as needed for the maintenance, characterization and decommissioning of the reactor.

The licensee also requested that the license for the FNR be amended to add condition 2.B(5). The purpose of condition 2.B(5) is to ensure that byproduct, source or special nuclear materials necessary for instrument calibration, instrument testing, or instrument checks performed in support of maintenance, characterization or decommissioning of the reactor are completely covered under the reactor license, vice the other licenses held by the University. The new

license condition will read:

- 2.B(5) Pursuant to the Act and 10 CFR Part 30, 40 and 70, to receive, possess and use any byproduct materials, up to a maximum of 100 grams of source material as uranium and thorium, and up to a maximum of 100 milligrams total special nuclear material as uranium-233, uranium-235, and plutonium or any combination thereof without restriction to chemical or physical form, for instrument calibration, instrument testing, or instrument checks necessary for maintenance, characterization and decommissioning of the reactor.

Licensing guidance for this amendment is contained in NUREG-1537, Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors. Specific guidance on the possession and use of byproduct, source and special nuclear material is contained in Section 9.5, Possession and Use of Byproduct, Source and Special Nuclear Material, which states:

The 10 CFR Part 50 Operating license applies to possession and operation of the reactor, possession and use of byproduct material produced by the operation of the reactor, and, to the extent authorized, the receipt, possession, and use of other byproduct source, or special nuclear material (material) needed for operation of the reactor and its experimental programs. Examples include sources for radiation monitor calibration, depleted uranium for shielding of experiments, reactor fuel, fission plates for thermal columns, and fission chambers for reactor monitoring and control.

The byproduct, source or special nuclear materials under these proposed license conditions would be received, handled, stored and shipped following procedures already in place under the current license and as described in the approved decommissioning plan.

The quantities of special nuclear material have been limited to be less than the 15 gram level to stay below the additional requirements of 10 CFR Part 70, 73, and Part 74.

The staff finds these changes acceptable because this amendment will re-establish license conditions that were inadvertently eliminated with Amendment No. 47 and will allow the licensee to receive contaminated or activated equipment from other licensees in support of decommissioning activities.

### 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes in inspection and surveillance requirements. The staff has determined that this amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and no significant increase in individual or cumulative occupational radiation exposure. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9).

Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

#### 4.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously evaluated, or create the possibility of a new or different kind of accident from any accident previously evaluated, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed activities, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or the health and safety of the public.

Principal Contributor: Patrick J. Isaac

Date: August 14, 2006