

April 4, 2008

EA-08-099

Dr. Steven R. Reese, Director
Radiation Center
Oregon State University
100 Radiation Center
Corvallis, OR 97331-5903

SUBJECT: ISSUANCE OF ORDER MODIFYING LICENSE NO. R-106 TO AMEND
POSSESSION LIMIT FOR URANIUM-235 ASSOCIATED WITH CONVERSION
FROM HIGH- TO LOW-ENRICHED URANIUM (AMENDMENT NO. 21)—
OREGON STATE UNIVERSITY TRIGA REACTOR (TAC NO. MD7360)

Dear Dr. Reese:

The U.S. Nuclear Regulatory Commission (NRC) is issuing the enclosed Order as Amendment No. 21 to Amended Facility Operating License No. R-106, which allows for the receipt and possession of low-enriched uranium (LEU) in the form of reactor fuel to prepare for the conversion of the Oregon State University TRIGA Reactor from high-enriched uranium fuel to LEU fuel in accordance with Title 10, Section 50.64, "Limitations on the Use of Highly Enriched Uranium (HEU) in Domestic Non-Power Reactors," of the *Code of Federal Regulations* (10 CFR 50.64). The NRC is issuing this Order in response to your application dated November 6, 2007, as supplemented on February 11, 2008. The Order adds License Condition 2.B.(5) to allow for the receipt and possession, but not use in the reactor, of the LEU fuel that will be needed for conversion. The Order will become effective 20 days after the date of its publication in the *Federal Register*, provided there are no requests for a hearing.

Sincerely,

/RA Int for/

Alexander Adams, Jr., Senior Project Manager
Research and Test Reactors Branch A
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-243

Enclosures:

1. Order
2. Replacement Page for License
3. Safety Evaluation

cc w/encl: See next page

Oregon State University

Docket No. 50-243

cc:

Mayor of the City of Corvallis
Corvallis, OR 97331

David Stewart-Smith
Oregon Office of Energy
625 Marion Street, N.E.
Salem, OR 97310

Dr. John Cassady, Vice President
for Research
Oregon State University
Administrative Services Bldg., Room A-312
Corvallis, OR 97331-5904

Mr. Todd Keller
Reactor Administrator
Oregon State University
Radiation Center, A-100
Corvallis, OR 97331-5903

Dr. Todd Palmer, Chairman
Reactor Operations Committee
Oregon State University
Radiation Center, A-100
Corvallis, OR 97331-5904

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

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DISTRIBUTION:

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
)
OREGON STATE UNIVERSITY)
)
(Oregon State University TRIGA Reactor))

Docket No. 50-243
EA-08-099

ORDER MODIFYING AMENDED FACILITY OPERATING LICENSE NO. R-106

I.

Oregon State University (the licensee) is the holder of Amended Facility Operating License No. R-106 (the license), originally issued on March 7, 1967, by the U.S. Atomic Energy Commission. The license authorizes operation of the Oregon State University TRIGA Reactor (the facility) at a power level up to 1100 kilowatts thermal and in the pulse mode, with reactivity insertions not to exceed 2.55\$, and to receive, possess, and use special nuclear material associated with facility operation. The facility is a research reactor located on the campus of Oregon State University, in the city of Corvallis, Benton County, Oregon. The mailing address is Radiation Center, Oregon State University, 100 Radiation Center, Corvallis, Oregon 97331-5903.

II.

Title 10, Section 50.64, "Limitations on the Use of Highly Enriched Uranium (HEU) in Domestic Non-Power Reactors," of the *Code of Federal Regulations* (10 CFR 50.64), limits the use of high-enriched uranium (HEU) fuel in domestic non-power reactors (research and test reactors) (see 51 FR 6514). The regulation, which became effective on March 27, 1986, requires that if Federal Government funding for conversion-related costs is available, each licensee of a non-power reactor authorized to use HEU fuel shall replace it with low-enriched uranium (LEU) fuel acceptable to the Commission unless the Commission has determined that the reactor has a unique purpose. The Commission's stated purpose for these requirements

was to reduce, to the maximum extent possible, the use of HEU fuel in order to reduce the risk of theft and diversion of HEU fuel used in non-power reactors.

Paragraphs 50.64(b)(2)(i) and (ii) require that a licensee of a non-power reactor (1) not acquire more HEU fuel if LEU fuel that is acceptable to the Commission for that reactor is available when the licensee proposes to acquire HEU fuel and (2) replace all HEU fuel in its possession with available LEU fuel acceptable to the Commission for that reactor in accordance with a schedule determined pursuant to 10 CFR 50.64(c)(2).

Paragraph 50.64(c)(2)(i) requires, among other things, that each licensee of a non-power reactor authorized to possess and use HEU fuel develop and submit to the Director of the Office of Nuclear Reactor Regulation (the Director) by March 27, 1987, and at 12-month intervals thereafter, a written proposal for meeting the requirements of the rule. The licensee shall include in its proposal a certification that Federal Government funding for conversion is available through the U.S. Department of Energy or other appropriate Federal agency. The proposal should also provide a schedule for conversion, based upon the availability of replacement fuel acceptable to the Commission for that reactor and upon consideration of other factors such as the availability of shipping casks, implementation of arrangements for available financial support, and reactor usage.

Paragraph 50.64(c)(2)(iii) requires the licensee to include in the proposal, to the extent required to effect conversion, all necessary changes to the license, the facility, and licensee procedures. This paragraph also requires the licensee to submit supporting safety analyses in time to meet the conversion schedule.

Paragraph 50.64(c)(2)(iii) also requires the Director to review the licensee proposal, to confirm the status of Federal Government funding, and to determine a final schedule, if the licensee has submitted a schedule for conversion.

Paragraph 50.64(c)(3) requires the Director to review the supporting safety analyses and to issue an appropriate enforcement order directing both the conversion and, to the extent

consistent with the protection of public health and safety, any necessary changes to the license, the facility, and licensee procedures. In the *Federal Register* notice of the final rule (51 FR 6514), the Commission explained that in most, if not all, cases, the enforcement order would be an order to modify the license under 10 CFR 2.204 (now 10 CFR 2.202, "Orders").

Any person, other than the licensee, whose interest may be affected by this proceeding and who desires to participate as a party must file a written request for hearing or petition for leave to intervene meeting the requirements of 10 CFR 2.309, "Hearing Requests, Petitions to Intervene, Requirements for Standing, and Contentions."

III.

The U.S. Nuclear Regulatory Commission (NRC) maintains the Agencywide Documents Access and Management System (ADAMS), which provides text and image files of the NRC's public documents. On November 6, 2007, the licensee submitted its conversion proposal (ADAMS Accession No. ML080420546), which was supplemented on February 11, 2008 (ADAMS Accession No. ML080730057). The NRC staff is in the process of reviewing the conversion proposal. The licensee indicated that an order, separate from the order for converting the reactor to LEU fuel, is needed that increases the uranium-235 possession limit because of a constraint on the timing of the shipment of replacement LEU fuel. The certification of the shipping containers used to transfer the LEU fuel from the manufacturer in France to the licensee will expire in June 2008, before the NRC can issue the order for reactor conversion. Therefore, the licensee requires the receipt and possession, but not use in the reactor, of the LEU fuel at this time to allow the fuel to be received before the shipping container loses its certification. The LEU fuel contains the uranium-235 isotope at an enrichment of less than 20 percent. The NRC staff reviewed the licensee's proposal and the requirements of 10 CFR 50.64 and has determined that public health and safety and the common defense and security require the licensee to receive and possess the LEU fuel before conversion. This is necessary so that the manufacturer can ship the LEU fuel to the licensee before the shipping

container certification expires, to support conversion in accordance with the schedules planned by the U.S. Department of Energy to support U.S. nonproliferation policies and by the licensee to support its academic mission.

IV.

Accordingly, pursuant to Sections 51, 53, 57, 101, 104, 161b, 161i, and 161o of the Atomic Energy Act of 1954, as amended, and to Commission regulations in 10 CFR 2.202 and 10 CFR 50.64, IT IS HEREBY ORDERED THAT:

Amended Facility Operating License No. R-106 is modified by adding the following license condition:

- 2.B.(5) Pursuant to the Act and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," to receive and possess but not use up to 16.30 kilograms of contained uranium-235 at enrichment less than 20 percent in the form of non-power reactor fuel.

This Order will be effective 20 days after the date of publication of this Order in the *Federal Register*.

V.

Pursuant to 10 CFR 2.309, any person(s) whose interest may be affected by this proceeding, other than the licensee, and who wishes to participate as a party in the proceeding must file a written request within 20 days after the date of publication of this Order, setting forth with particularity the manner in which this Order adversely affects his or her interest and addressing the criteria set forth in 10 CFR 2.309. If a hearing is held, the issue to be considered at such hearing shall be whether this Order should be sustained.

A request for a hearing must be filed in accordance with the NRC E-Filing rule, which became effective on October 15, 2007. The NRC issued the E-Filing final rule on August 28, 2007 (72 FR 49139) and codified it in pertinent part at 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," Subpart B. The E-Filing process requires participants to submit and serve documents over the Internet or, in some cases, to mail

copies on electronic optical storage media. Participants may not submit paper copies of their filings unless they seek a waiver in accordance with the procedures described below.

To comply with the procedural requirements associated with E-Filing, at least 5 days before the filing deadline, the requestor must contact the Office of the Secretary by email at hearingdocket@nrc.gov, or by calling (301) 415-1677, to request (1) a digital identification (ID) certificate, which allows the participant (or its counsel or representative) to digitally sign documents and access the E-Submittal server for any NRC proceeding in which it is participating, and/or (2) creation of an electronic docket for the proceeding (even in instances when the requestor (or its counsel or representative) already holds an NRC-issued digital ID certificate). Each requestor will need to download the Workplace Forms Viewer™ to access the Electronic Information Exchange (EIE), a component of the E-Filing system. The Workplace Forms Viewer™ is free and is available at <http://www.nrc.gov/site-help/e-submittals/install-viewer.html>. Information about applying for a digital ID certificate also is available on the NRC's public Web site at <http://www.nrc.gov/site-help/e-submittals/apply-certificates.html>.

Once a requestor has obtained a digital ID certificate, had a docket created, and downloaded the EIE viewer, he or she can then submit a request for a hearing through EIE. Submissions should be in portable document format (PDF) in accordance with NRC guidance available on the NRC public Web site at <http://www.nrc.gov/site-help/e-submittals.html>. A filing is considered complete at the time the filer submits the document through EIE. To be timely, electronic filings must be submitted to the EIE system no later than 11:59 p.m. eastern time on the due date. Upon receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The EIE system also distributes an email notice that provides access to the document to the NRC Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the document on those participants separately. Therefore, any others who wish to participate in the proceeding (or their counsel or

representative) must apply for and receive a digital ID certificate before a hearing request is filed so that they may obtain access to the document via the E-Filing system.

A person filing electronically may seek assistance through the "Contact Us" link located on the NRC Web site at <http://www.nrc.gov/site-help/e-submittals.html> or by calling the NRC technical help line, which is available between 8:30 a.m. and 4:15 p.m., eastern time, Monday through Friday. The help line number is (800) 397-4209 or, locally, (301) 415-4737.

Participants who believe that they have good cause for not submitting documents electronically must file a motion, in accordance with 10 CFR 2.302(g), with their initial paper filing requesting authorization to continue to submit documents in paper format. Such filings must be submitted by (1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, Sixteenth Floor, One White Flint North, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff. Participants filing a document in this manner are responsible for serving the document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket at http://ehd.nrc.gov/EHD_Proceeding/home.asp, unless excluded pursuant to an order of the Commission, an Atomic Safety and Licensing Board, or a Presiding Officer. Participants are requested not to include personal privacy information, such as social security numbers, home addresses, or home phone numbers, in their filings. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a fair use application, participants are requested not to include copyrighted materials in their works.

If a hearing is requested, the NRC will issue an order designating the time and place of any hearing.

In the absence of any request for hearing, the provisions as specified in Section IV shall be final 20 days after the date of publication of this Order in the *Federal Register*.

In accordance with 10 CFR 51.10(d), this Order is not subject to Section 102(2) of the National Environmental Policy Act, as amended. The NRC staff notes, however, that with respect to the environmental impacts associated with the changes imposed by this Order as described in the safety evaluation, the changes would, if imposed by other than an order, meet the definition of a categorical exclusion in accordance with 10 CFR 51.22(c)(9). Thus, pursuant to either 10 CFR 51.10(d) or 10 CFR 51.22(c)(9), no environmental assessment or environmental impact statement is required.

Detailed guidance that the NRC uses to review applications from research reactor licensees appears in NUREG-1537, "Guidelines for Preparing and Reviewing Applications for the Licensing of Non-Power Reactors," February 1996, which can be obtained from the Commission's Public Document Room (PDR). The public may also access NUREG-1537 through the NRC's Public Electronic Reading Room on the Internet at <http://www.nrc.gov/reading-rm/adams.html> under ADAMS Accession Nos. ML042430055 for part 1 and ML042430048 for part 2.

For further information, see the application from the licensee dated November 6, 2007 (ADAMS Accession No. ML080420546), as supplemented on February 11, 2008 (ADAMS Accession No. ML080730057); the NRC staff's request for additional information (ADAMS Accession No. ML080090308); and the cover letter to the licensee and the staff's safety evaluation dated April 4, 2008 (ADAMS Accession No. ML080730395), available for public inspection at the Commission's PDR, located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Public Electronic Reading Room at

<http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have access to ADAMS or who have problems accessing the documents in ADAMS should contact the NRC PDR reference staff by telephone at (800) 397-4209 or (301) 415-4737 or by email to pdr@nrc.gov.

Dated this 4th day of April, 2008.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

James T. Wiggins, Deputy Director
Office of Nuclear Reactor Regulation

ENCLOSURE TO LICENSE AMENDMENT NO. 21
AMENDED FACILITY OPERATING LICENSE NO. R-106
DOCKET NO. 50-243
REPLACEMENT PAGE FOR LICENSE

Replace the following page of the License with the enclosed page. The revised page is identified by amendment number and contains a vertical line indicating the area of change.

Remove

3

Insert

3

- (5) Pursuant to the Act and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," to receive and possess but not use up to 16.30 kilograms of contained uranium-235 at enrichment less than 20 percent in the form of non-power reactor fuel.

C. This amended operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Sections 50.54 and 50.59 of Part 50, Section 70.32 of Part 70; 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 may operate the facility at steady state power levels not in excess of 1100 kilowatts (thermal) and, in the pulse mode, with reactivity insertions not to exceed 2.55\$.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 20, 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 maintain and fully implement all provisions of the Commission's approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). The approved security plan consists of documents withheld from public disclosure pursuant to 10 CFR 73.21, entitled "Oregon State University TRIGA Reactor Physical Security Plan," submitted by letters dated September 14, 1974, October 24, 1974, June 26, 1975, March 19, 1976, June 10, 1976, February 4, 1977, October 18, 1979, January 15, 1980, September 19, 1980, November 26, 1980, December 22, 1980, June 21, 1999, and May 24, September 21 and November 23, 2004.

D. This amended operating license is effective as of the date of issuance and shall expire at midnight, August 15, 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

R/A Charles M. Tromwell for

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Appendix A – Technical Specifications

Date of Issuance: July 21, 1976

Amendment No. 21
April 4, 2008

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING THE ORDER ON

POSSESSION LIMIT CHANGES TO ALLOW CONVERSION

FROM HIGH-ENRICHED TO LOW-ENRICHED URANIUM FUEL

AMENDED FACILITY OPERATING LICENSE NO. R-106

OREGON STATE UNIVERSITY TRIGA REACTOR

DOCKET NO. 50-243

1.0 INTRODUCTION

By letter dated November 6, 2007, as supplemented on February 11, 2008, Oregon State University (the licensee or OSU) requested a change to the OSU TRIGA Reactor license to increase the possession limit of low-enriched uranium (LEU) in the form of reactor fuel. The licensee made the request to allow for the receipt of LEU fuel needed to convert the reactor from the use of high-enriched uranium (HEU) fuel before the certification on the shipping container used to transport the LEU fuel from the fuel manufacturer in France expires in June 2008. The conversion from the use of HEU fuel to LEU fuel is in accordance with Title 10, Section 50.64, "Limitations on the Use of Highly Enriched Uranium (HEU) in Domestic Non-Power Reactors," of the *Code of Federal Regulations* (10 CFR 50.64). The U.S. Nuclear Regulatory Commission (NRC) promulgated this regulation to reduce the risk of theft and diversion of HEU fuel used in non-power reactors (research and test reactors). The NRC staff has determined, as discussed below, that the addition of License Condition 2.B.(5) to allow receipt and possession, but not use in the reactor, of up to 16.30 kilograms of contained uranium-235 in the form of reactor fuel at enrichments less than 20 percent (LEU fuel) is acceptable.

2.0 BACKGROUND

On November 6, 2007, as supplemented on February 11, 2008, the licensee submitted its application for conversion of the OSU TRIGA Reactor from the use of HEU fuel to LEU fuel. The NRC staff is currently reviewing the application. In the application, the licensee also identified the need to possess the LEU fuel sooner than the current NRC schedule for completing the review of the application for conversion would permit.

The licensee is working with the U.S. Department of Energy (DOE), DOE contractors, and the NRC to convert the OSU TRIGA Reactor from HEU fuel to LEU fuel in support of the Global Threat Reduction Initiative. The OSU license currently includes a possession limit on uranium-235 to allow for operation of the facility to conduct licensed research reactor activities. The licensee indicated that an increase to the possession limit is required to allow for the timely conversion to LEU fuel. Because of constraints in the conversion review schedule, the certification for the shipping container used to ship the LEU fuel from the manufacturer in France will expire before the NRC issues the order for reactor conversion. The order for reactor

conversion would normally authorize possession of the LEU fuel, but the NRC will not complete the conversion review before the expiration of the shipping container certification. This Order will allow the licensee to receive and possess the LEU fuel needed for conversion before the shipping container certification expires in June 2008.

To support this possession limit Order, the NRC evaluated the pertinent material in the November 6, 2007, conversion submittal and in the letter dated February 11, 2008, which responded to a request for additional information (RAI) from the NRC staff.

3.0 EVALUATION

The OSU license currently authorizes the receipt, possession, and use of 12.83 kilograms of any enrichment, contained uranium-235 in connection with operation of the reactor. The license also authorizes the receipt and possession, but not use, of up to an additional 656 grams of uranium-235 at an enrichment of approximately 19.79 percent contained in the control rods and core from an AGN-201-type reactor that the licensee operated in the past. The AGN-201 reactor was decommissioned, and its license was terminated. The fuel was transferred to the TRIGA license to be held until its return to DOE.

The licensee has not requested any changes to the technical specifications (TSs) or to its security plan. Thus, it will receive and possess all fuel material under the current terms of the reactor license. The NRC staff reviewed the license, TSs, and security plan requirements for the facility and finds that the possession of the additional LEU fuel will not require additional safety or security controls or conditions beyond those already in place.

The increased possession limit allows for the receipt and possession of the LEU fuel. It does not allow for the use of the LEU fuel in the reactor. This Order does not authorize conversion of the reactor to LEU fuel. The NRC staff is currently performing a separate evaluation of the licensee's application for conversion of the reactor to allow the use of LEU fuel. Therefore, the increased fuel possession limit will not increase the radioactive fission product inventory in the reactor core, and routine effluent releases to the unrestricted environment or potential accident releases will not increase beyond those already analyzed and accepted under the current license and TSs.

DOE is providing the LEU fuel to OSU. The licensee will fabricate and install a sufficient number of fuel storage racks to store the existing HEU fuel and the new LEU fuel. The licensee was originally planning to store both HEU and LEU fuel in similar storage racks, as discussed in its conversion safety analysis report. As described in its February 11, 2008, response to the NRC's RAI, the licensee subsequently decided to fabricate different storage racks for the HEU and LEU fuel. The conversion safety analysis report discusses the storage racks for the HEU fuel, while the licensee's answer to RAI No. 2 describes the LEU storage racks. The staff reviewed information about both storage racks.

In accordance with the existing TS 5.5(a), all reactor fuel assemblies shall be stored in a geometric array where the multiplication factor, k-eff, is less than 0.8 for all conditions of moderation. (The conversion application submitted on November 6, 2007, as supplemented, refers to a k-eff limit of 0.9. In the licensee's application for license renewal, submitted October 4, 2004, as supplemented, the licensee requested that the k-eff limit be changed from 0.8 to 0.9. The NRC staff is still reviewing the license renewal request. Therefore, the existing limit applied to this review is 0.8.) All racks have a multiplication constant (k-eff) that is less than 0.8.

For the HEU storage racks, the licensee provided information on the storage of the HEU and LEU fuel in the racks. The racks are on a square pitch of 8.0 centimeters. The licensee modeled five racks, each with a capacity of two rows of 20 fuel elements. The licensee analyzed three cases with the storage racks in water—storage of all HEU fuel in the racks, storage of all LEU fuel in the racks, or storage of an equal mixture of HEU fuel and LEU fuel in the racks. The licensee's analysis showed that the TS limit is satisfied with a considerable margin under all three cases. The analysis showed a k-eff of less than 0.548 for the case with HEU fuel only, a k-eff of 0.612 for the case with LEU fuel only, and a k-eff of 0.577 for the case with an equal mixture of both fuel types. A critical array would have a k-eff of 1.000. The licensee also performed calculations for the same cases with the storage racks in air. The multiplication factors were reduced as compared with water for the three fuel cases. These values are below the multiplication factor limit of 0.8, so the fresh and spent fuel elements can be stored safely in these storage racks.

For the LEU storage racks, the licensee modeled an infinite two-dimensional array of fresh LEU fuel elements with a 10 centimeter fuel storage lattice pitch. The use of an infinite array provided conservative results as compared to a finite array. If air surrounds the fuel, k-infinity is 0.668 (k-infinity in this case can be compared against the TS k-eff); if water surrounds the fuel, k-infinity is 0.646. These values are below the multiplication factor limit of 0.8, so fresh fuel elements can be stored safely in these storage racks.

The licensee used the Monte Carlo N-Particle Transport code MCNP. This is a state-of-the-art code frequently used for this type of analysis. The staff has reviewed the licensee's use of the code for all other aspects of its conversion analysis and found that it is knowledgeable in the application of the code. Hence, the staff has a high level of confidence in the licensee's application of the code and in the results.

In reviewing the licensee's application for conversion, the NRC staff verified that licensed senior reactor operators will supervise all fuel handling activities using approval procedures. Therefore, the staff concludes that the licensee will have approved procedures and appropriate staff for the receipt and possession of the LEU fuel. The staff also concludes that the potential for accidental criticality during fuel movement and storage is not increased.

The increase in the special nuclear material possession limit does not impact the security requirements for the facility. In accordance with 10 CFR 73.2, "Definitions," this possession limit is consistent with special nuclear material of moderate strategic significance (Category II). The licensee's current security plan meets the requirements for this level of material under 10 CFR 73.67(d).

The inspection program has found that the licensee has routinely used special nuclear material safely and securely.

The licensee proposed a new license condition for the receipt and possession of the LEU fuel that will be needed for conversion of the reactor. The license condition will not allow use of the fuel in the reactor. The proposed new license condition reads as follows:

- 2.B.(5) Pursuant to the Act and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," to receive and possess but not use up to 16.30 kilograms of contained uranium-235 at enrichment less than 20 percent in the form of non-power reactor fuel.

The license condition as proposed by the licensee ended with the phrase "in connection with operation of the reactor." To clarify that the new LEU fuel is limited to receipt and possession and is not for use, the OSU Radiation Center Director and the NRC Project Manager agreed during a telephone conversation on March 14, 2008, to remove "in connection with operation of the reactor" from the wording of the license condition.

Because the licensee has demonstrated that nuclear fuel can be stored safely and securely under the terms of the existing TSs and security plan, the NRC staff finds it acceptable to increase the LEU possession limit as proposed by the licensee. Furthermore, the NRC staff has determined that public health and safety and the common defense and security require the licensee to receive and possess the LEU fuel so that the LEU fuel may be used to convert the reactor from HEU fuel in accordance with a schedule that allows OSU to meet its educational mission as well as with that planned by DOE to support U.S. nonproliferation policies.

4.0 ENVIRONMENTAL CONSIDERATION

In accordance with 10 CFR 51.10(d), an order is not subject to Section 102 of the National Environmental Policy Act. The NRC staff notes, however, that even if these changes were not being imposed by an order, the changes would not require an environmental impact statement or environmental assessment. The license changes involve use of a facility component located within the restricted area as defined in 10 CFR Part 20, "Standards for Protection Against Radiation," or changes in inspection and surveillance requirements. The NRC staff has determined that the changes involve no significant increase in the amounts or types of any effluents that may be released off site 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). Therefore, pursuant to either 10 CFR 51.10(d) or 10 CFR 51.22(b), no environmental impact statement or environmental assessment is required.

5.0 CONCLUSION

On the basis of the considerations discussed above, the NRC staff has concluded that (1) the proposal by the licensee for the possession of LEU fuel is consistent with and in furtherance of the requirements of 10 CFR 50.64, (2) there is reasonable assurance that the proposed activities will not endanger public health and safety, and (3) such activities will be conducted in compliance with the Commission's regulations and will not be inimical to the common defense and security or public health and safety. Accordingly, the NRC concludes that it should issue an enforcement order pursuant to 10 CFR 50.64(c)(3) to allow the receipt and possession of LEU fuel.

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