January 13, 2016

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

SUBJECT: OREGON STATE UNIVERSITY - ISSUANCE OF AMENDMENT NO. 23 TO RENEWED FACILITY OPERATING LICENSE NO. R-106 TO ALLOW THE IRRADIATION OF UP TO THREE MEDICAL ISOTOPES PRODUCTION TARGETS CONTAINING FISSIONABLE MATERIAL (TAC NO. ME8443)

Dear Dr. Reese:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 23 to Renewed Facility Operating License No. R-106 for the Oregon State University TRIGA Reactor (OSTR). The amendment consists of changes to the facility operating license and technical specifications (TSs) in response to your application dated April 13, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12124A265), as revised and supplemented by letters dated January 8, 2013, August 23, 2013, April 14, 2014, March 2, 2015, July 13, 2015, and email dated January 4, 2016 (ADAMS Accession Nos. ML12124A266, ML13252A181, ML14106A379, ML15063A428, ML15198A031, and ML16005A551, respectively). The proposed changes would allow the irradiation of up to three medical isotope production targets containing fissionable material in the OSTR.

As discussed with and agreed by you during a telephone conversation on December 21, 2015, the NRC staff is also reissuing the TSs in their entirety to correct pagination and font conversion errors introduced by the NRC staff when: 1) the renewed license and the order modifying the license to reflect the conversion from HEU- to LEU-fuel (implemented as Amendment No. 22) were issued in September 2008, and 2) the TSs were converted to Portable Document Format (PDF) for inclusion in ADAMS. Due to a difference in the effective date for each action, the errors were not identified by the staff until after both licensing actions became effective.

The safety evaluation supporting Amendment No. 23 is enclosed. If you have any questions regarding this action, please contact Mr. Michael Balazik at (301) 415-2856, or by electronic mail at Michael.Balazik@nrc.gov.

Sincerely,

/RA/

Alexander Adams Jr., Branch Chief
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-243

Enclosures:
1. Amendment No. 23 to
   Renewed License No. R-106
2. Safety Evaluation

cc: See next page

cc:

Mayor of the City of Corvallis
Corvallis, OR 97331

Ken Niles
Division Administrator
Nuclear Safety Division
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3737

Dr. Cynthia Sagers
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Dr. Todd Keller
Reactor Administrator
Oregon State University
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Dr. Andrew Klein, Chairman
Reactor Operations Committee
Oregon State University
100 Radiation Center, A-100
Corvallis, OR 97331-5904

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

The safety evaluation supporting Amendment No. 23 is enclosed. If you have any questions regarding this action, please contact Mr. Michael Balazik at (301) 415-2856, or by electronic mail at Michael.Balazik@nrc.gov.

Sincerely,

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ADAMS Accession Nos.: ML15310A110 (Pkg.); ML15310A126 (Letter); ML15310A309 (Enclosure 2)
*** via e-mail NRR-106**

OFFICE	DPR/PROB/RE	DPR/PRLB/BC*	DPR/PRLB/LA*
NAME	WSchuster	AAdams	NParker
DATE	12/21/2015	12/21/2015	12/22/2015
OFFICE	DPR/PRLB/PM	OGC	DPR/PRLB/BC
NAME	MBalazik	MYoung	AAdams
DATE	12/22/2015	1/13/2016	1/13/2016

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OREGON STATE UNIVERSITY

DOCKET NO. 50-243

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 23
Renewed License No. R-106

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to Facility Operating License No. R-106 filed by the Oregon State University (the licensee) on April 13, 2012, as supplemented on January 8, 2013, August 23, 2013, April 14, 2014, March 2, 2015, July 13, 2015, and January 4, 2016, 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. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance that (i) the activities authorized by this amendment can be conducted without endangering the health and safety of the public and (ii) such activities will be conducted in compliance with Commission's regulations set forth in 10 CFR Chapter I;

   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 the regulations of the Commission as stated in 10 CFR Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions," and all applicable requirements have been satisfied; and

   F. Prior notice of this amendment was not required by 10 CFR 2.105, "Notice of Proposed Action," and publication of a notice of issuance for this amendment is not required by 10 CFR 2.106, "Notice of Issuance."

2. Accordingly, paragraph 2.B.(2) f. of License No. R-106 is hereby amended to read as follows:

    f. to receive, possess, and use, but not separate, in connection with operation of the facility, up to 0.5 kilograms of contained uranium-235 enriched to less than 20 percent in the form of molybdenum-99 production targets.

3. Accordingly, paragraph 2.C.(2) of License No. R-106 is hereby amended to read as follows:

    (2) Technical Specifications

    The technical specifications contained in Appendix A, as revised through Amendment No. 23, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the technical specifications.

4. This license amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Alexander Adams Jr., Chief
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Attachment:
Changes to Amend Facility Operating License
and Technical Specifications

Date of Issuance: January 13, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 23

RENEWED FACILITY OPERATING LICENSE NO. R-106

DOCKET NO. 50-243

Replace the following pages of the Facility Operating License No. R-106 with the attached revised pages. The revised pages are identified by amendment number and contains marginal lines indicating the area of change.

Remove	Insert
-	2a
3	3

Attachment

f. to receive, possess, and use, but not separate, in connection with operation of the facility, up to 0.5 kilograms of contained uranium-235 enriched to less than 20 percent in the form of molybdenum-99 production targets.

(3) Pursuant to the Act and 10 CFR Part 30 to receive, possess and use in connection with operation of the facility the following:

a. up to a 7-curie sealed polonium-210 beryllium source which may be used for reactor startup;

b. up to a 3-curie sealed americium-241 beryllium neutron source which may be used for reactor startup;

c. such byproduct material as may be produced by the operation of the facility. Byproduct material cannot be separated except for byproduct material produced in experiments.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Parts 20, 30, 50, 51, 55, 70, and 73; 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 1.1 megawatts (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. 23, 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 NRC-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,” as revised.

ATTACHMENT TO LICENSE AMENDMENT NO. 23

RENEWED FACILITY OPERATING LICENSE NO. R-106

DOCKET NO. 50-243

Replace the following pages of the Appendix A, “Technical Specifications” with the attached revised pages. The revised pages are identified by amendment number.

Technical Specifications

Remove	Insert
All	All

Attachment