

July 17, 2018

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SUBJECT: UNIVERSITY OF NEW MEXICO – ISSUANCE OF AMENDMENT NO. 6 TO
RENEWED FACILITY OPERATING LICENSE NO. R-102 FOR THE
AEROJET-GENERAL NUCLEONICS-201 MODIFIED REACTOR
(EPID NO. L-2017-LLA-0449)

Dear Dr. Busch:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 6 to Renewed Facility Operating License No. R-102 for the University of New Mexico (UNM) Aerojet-General Nucleonics-201 Modified (AGN-201M) Reactor. The amendment consists of a change to the facility operating license in response to UNM's application, dated October 20, 2017. The amendment is effective as of its date of issuance and shall be implemented by UNM within 30 days of issuance.

The revised facility operating license condition reflects a change in the protection and designation of the physical security plan for the UNM AGN-201M reactor.

The NRC staff's safety evaluation supporting Amendment No. 6 is enclosed. If you have any questions, please contact me at (301) 415-4067, or by electronic mail at Edward.Helvenston@nrc.gov.

Sincerely,

/RA/

Edward Helvenston, Project Manager
Research and Test Reactors Licensing Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

Docket No. 50-252
License No. R-102

Enclosures:

1. Amendment No. 6
2. Safety Evaluation

cc: See next page

University of New Mexico

Docket No. 50-252

cc:

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 AEROJET-GENERAL NUCLEONICS-201 MODIFIED REACTOR
 DATE: JULY 17, 2018

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***concurrence by e-mail**

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UNIVERSITY OF NEW MEXICO

DOCKET NO. 50-252

UNIVERSITY OF NEW MEXICO AGN-201M REACTOR

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 6
License No. R-102

1. The U.S. Nuclear Regulatory Commission (NRC or the Commission) has found that:
 - A. The application for an amendment to Renewed Facility Operating License No. R-102, filed by The University of New Mexico (the licensee) on October 20, 2017, 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 (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 Commission's regulations set forth in 10 CFR Chapter I;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this license amendment 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
 - F. Prior notice of this amendment was not required by 10 CFR 2.105, "Notice of proposed action," and publication of a notice for this amendment is not required by 10 CFR 2.106, "Notice of issuance."

2. Accordingly, paragraph 2.C.3 of Renewed Facility Operating License No. R-102 is hereby amended to read as follows:

Physical Security Plan

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security plan, including amendment and changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The approved physical security plan consists of a University of New Mexico document, withheld from public disclosure pursuant to 10 CFR 2.390(d), entitled, "The Physical Security Plan for the University of New Mexico AGN-201M Reactor Facility," dated February 13, 2007, as revised.

3. The license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

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

Attachment:
Changes to Renewed Facility Operating License No. R-102

Date of Issuance: July 17, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 6
RENEWED FACILITY OPERATING LICENSE NO. R-102
DOCKET NO. 50-252

Replace the following page of the Renewed Facility Operating License No. R-102 with the revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Facility Operating License

Remove

Page 3

Insert

Page 3

3. Pursuant to the Act and 10 CFR Part 30 to possess, use, and transfer but not to separate, except for byproduct material produced in non-fueled experiments, such byproduct material as may be produced by operation of the reactor.
- C. This license shall be deemed to contain and is subject to the conditions specified in Parts 20, 30, 50, 51, 55, 70, and 73 of the Commission's regulations in 10 CFR Chapter 1; is subject to all applicable provisions of the Act and rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified below:
1. Maximum Power Level

The licensee is authorized to operate the reactor at a steady-state power level not to exceed 5 watts (thermal).
 2. Technical Specifications

The technical specifications contained in Appendix A, as revised by Amendment No. 5, are hereby incorporated in the license. The licensee shall operate the reactor in accordance with the technical specifications.
 3. Physical Security Plan

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The approved physical security plan consists of a University of New Mexico document, withheld from public disclosure pursuant to 10 CFR 2.390(d), entitled, "The Physical Security Plan for the University of New Mexico AGN-201M Reactor Facility," dated February 13, 2007, as revised.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 6 TO

RENEWED FACILITY OPERATING LICENSE R-102

THE UNIVERSITY OF NEW MEXICO

DOCKET NO. 50-252

1.0 INTRODUCTION

The University of New Mexico (UNM or the licensee) requested an amendment to Facility Operating License No. R-102 for the UNM Aerojet-General Nucleonics-201 Modified (AGN-201M) Reactor (UNMR) by letter to the U.S. Nuclear Regulatory Commission (NRC) dated October 20, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17303A074).

In its license amendment request (LAR), UNM stated that a review of its physical security plan (PSP) found the PSP contains non-safeguards security-related information, but that the PSP was over-designated as Safeguards Information – Modified Handling. The Safeguards Information – Modified Handling designation for the UNMR PSP is a higher security designation than is required under NRC regulations. Safeguards Information – Modified Handling information must be withheld from public disclosure under Title 10 of the Code of Federal Regulations (10 CFR) 73.21, whereas non-safeguards security-related information is withheld from public disclosure under 10 CFR 2.390(d).

UNM requested a license amendment to designate its PSP as non-safeguards security-related information. License Condition (LC) 2.C.3 of Facility Operating License No. R-102 stated that the UNMR PSP is withheld from public disclosure pursuant to 10 CFR 73.21. LC 2.C.3 is revised to allow UNM to designate its PSP as security-related information and to withhold the information from public disclosure pursuant to 10 CFR 2.390(d).

By electronic mail dated July 9, 2018 (ADAMS Accession No. ML18197A040), the NRC staff provided UNM with a draft copy of the license change page to provide UNM the opportunity to check for errors and verify the changes were consistent with UNM's request. UNM confirmed that the draft change page was correct and consistent with its amendment request, in an electronic mail dated July 13, 2018 (ADAMS Accession No. ML18197A040).

2.0 REGULATORY EVALUATION

The NRC's regulations at 10 CFR 73.2 define categories of special nuclear materials. The definitions provide the maximum quantities and maximum enrichment of uranium for special nuclear material of low strategic significance, special nuclear material of moderate strategic significance, strategic special nuclear material, and formula quantity:

Special nuclear material of low strategic significance means:

- (1) Less than an amount of special nuclear material of moderate strategic significance as defined in paragraph (1) of the definition of strategic nuclear material of moderate strategic significance in this section, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in U-235 isotope) or 15 grams of uranium-233 or 15 grams of plutonium or the combination of 15 grams when computed by the equation, grams = (grams contained U-235) + (grams plutonium) + (grams U-233); or
- (2) Less than 10,000 grams but more than 1,000 grams of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope); or
- (3) 10,000 grams or more of uranium-235 (contained in uranium enriched above natural but less than 10 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category III quantity of material.

Special nuclear material of moderate strategic significance means:

- (1) Less than a formula quantity of strategic special nuclear material but more than 1,000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope) or more than 500 grams of uranium-233 or plutonium, or in a combined quantity of more than 1,000 grams when computed by the equation, grams = (grams contained U-235) + 2 (grams U-233 + grams plutonium); or
- (2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U-235 isotope).

This class of material is sometimes referred to as a Category II quantity of material.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U-235 isotope), uranium-233, or plutonium.

Formula quantity means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams = (grams contained U-235) + 2.5 (grams U-233 + grams plutonium). This class of material is sometimes referred to as a Category I quantity of material.

UNMR LC 2.B.2.a allows UNM “to receive, possess, and use up to 700 grams of contained uranium-235 enriched to less than 20 [percent] in uranium dioxide ... embedded in radiation stabilized polyethylene, in connection with the operation of the reactor.” UNMR LC 2.B.2.b allows UNM “to possess and use, but not to separate such other special nuclear material as may be produced by operation of the reactor.” UNMR technical specification (TS) 5.1.a states that the UNMR (including the reactor core and control rods) contains approximately 667 grams of uranium-235 in the form of less than 20 percent enriched uranium dioxide dispersed in approximately 11 kilograms of polyethylene. (The UNMR LCs and TSs, as revised by license amendment No. 5, dated May 3, 2018, may be found at ADAMS Accession No. ML14204A610.)

The NRC staff reviewed the definitions for special nuclear material (SNM) of low and moderate strategic significance at 10 CFR 73.2 and compared the maximum quantities and enrichment of

uranium permitted under UNM's Facility Operating License No. R-102. The NRC staff confirmed that the maximum quantity and enrichment of uranium which UNM may possess falls below the limits of SNM of low strategic significance. The NRC staff notes that the quantity of SNM produced by operation of the UNMR, which includes plutonium, is small and could not cause UNM to possess SNM that exceeds the limits of SNM of low strategic significance. The NRC staff confirmed that the maximum quantity of SNM that is permitted to be possessed at the UNMR facility falls below the quantities of SNM defined as Category I, Category II, and Category III.

The regulations at 10 CFR 73.2 also define Safeguards Information and Safeguards Information – Modified Handling:

Safeguards Information means information not classified as National Security Information or Restricted Data which specifically identifies a licensee's ... detailed security measures (including security plans, procedures, and equipment) for the physical protection of source, byproduct, or special nuclear material in quantities determined by the Commission through order or regulation to be significant to the public health and safety or the common defense and security.

Safeguards Information – Modified Handling is the designation or marking applied to Safeguards Information which the Commission has determined requires handling requirements modified from the specific Safeguards Information handling requirements that are applicable to Safeguards Information needing a higher level of protection.

10 CFR 73.21(a)(1)(i) requires that licensees that produce, receive, or acquire Safeguards Information (SGI) related to a formula quantity of strategic SNM, or to certain other activities and facilities (which do not include research or test reactors), shall ensure that it is protected against unauthorized disclosure by protecting the SGI in accordance with the requirements of 10 CFR 73.22 for SGI. The regulations at 10 CFR 73.21(a)(1)(ii) require that licensees that produce, receive, or acquire SGI related to research and test reactors that possess quantities of SNM that are of moderate or low strategic significance must protect the SGI in accordance with the requirements of 10 CFR 73.23 for Safeguards Information – Modified Handling (SGI-M). The regulation in 10 CFR 73.21(a)(1)(iii) requires that licensees that possess SGI not described in 10 CFR 73.21(a)(1)(i) or (ii) must also protect the SGI in accordance with the requirements of 10 CFR 73.22.

The quantity and enrichment of uranium permitted to be possessed under the UNM research reactor license fall below the limits of SNM of low or moderate strategic significance, and also do not constitute a formula quantity of SNM. For this reason, the NRC staff finds that UNM does not produce, receive, or acquire SGI, including SGI-M, related to the UNMR as part of its licensed activities. Therefore, because the UNMR PSP does not contain SGI or SGI-M, the PSP is not required to be protected from public disclosure under 10 CFR 73.21(a)(1).

The NRC's regulations at 10 CFR 2.390(a) provide that the NRC will make records and documents publicly available, in the absence of an NRC determination of a compelling reason for non-disclosure that balances the interests of the party seeking non-disclosure and the public interest in disclosure. 10 CFR 2.390(d), in relevant part, addresses the withholding of information considered to be commercial or financial information within the meaning of 10 CFR 9.17(a)(4). 10 CFR 2.390(d)(1) identifies "[c]orrespondence and reports to or from the NRC which contain information or records concerning a licensee's ... physical protection ... not otherwise designated as Safeguards Information or classified as National Security Information

or Restricted Data” as commercial or financial information. 10 CFR 9.17(a)(4) states that “[t]rade secrets and commercial or financial information obtained from a person that are privileged or confidential” are exempt from public disclosure.

In its review of the LAR, the NRC staff determined that the UNMR PSP contains information about security measures that are in effect at the at the facility. However, 10 CFR 73.21(a)(1) does not require this information about security measures at the facility to be protected as SGI or SGI-M.

The NRC staff finds that although security-related information for the UNMR is not required to be protected as SGI or SGI-M, it must be withheld from public disclosure pursuant to 10 CFR 2.390(d).

3.0 TECHNICAL EVALUATION

The original LC 2.C.3 stated:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The approved physical security plan consists of a University of New Mexico document, withheld from public disclosure pursuant to 10 CFR 73.21, entitled, “The Physical Security Plan for the University of New Mexico AGN-201M Reactor Facility,” dated February 13, 2007, as revised.

The revised LC 2.C.3 states:

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security plan, including amendment and changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The approved physical security plan consists of a University of New Mexico document, withheld from public disclosure pursuant to 10 CFR 2.390(d), entitled, “The Physical Security Plan for the University of New Mexico AGN-201M Reactor Facility,” dated February 13, 2007, as revised.

The original LC stated that the UNMR PSP was withheld from public disclosure pursuant to 10 CFR 73.21. The LC is revised to state that the UNM PSP is withheld from public disclosure pursuant to 10 CFR 2.390(d).

In its LAR, UNM requested to change the designation of its PSP from SGI-M to non-safeguards security-related information. SGI-M is required to be withheld from public disclosure pursuant to 10 CFR 73.21. However, non-safeguards security-related information is withheld from public disclosure pursuant to 10 CFR 2.390(d).

The NRC staff considered the re-designation of the UNMR PSP as security-related information. As stated in Section 2.0 of this safety evaluation, 10 CFR 73.21(a)(1) does not require licensees for research reactor facilities containing less than a Category III quantity of SNM to protect security-related information for their facility as SGI or SGI-M.

Therefore, the NRC staff finds that UNM is not required to continue to designate its PSP as SGI-M and to withhold the PSP from public disclosure under 10 CFR 73.21. The NRC staff also finds that UNM's designation of its PSP as security-related information is consistent with the designation of PSPs at research reactors that possess less than a Category III quantity of SNM. The NRC staff finds that the revised LC 2.C.3 requires that the PSP be withheld from public disclosure as required by 10 CFR 2.390(d). The NRC staff concludes that the re-designation of the UNMR PSP as security-related information, and the revision of LC 2.C.3, are acceptable.

The amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance. The 30-day implementation period provides UNM with adequate time to change the markings on its PSP from SGI-M to non-safeguards security-related information withheld from public disclosure under 10 CFR 2.390. The issuance of this amendment does not constitute NRC review or approval of any other changes to the PSP. Verification that UNM implemented the PSP designation change will occur during a future NRC inspection at the UNMR.

4.0 ENVIRONMENTAL CONSIDERATION

The NRC staff determined that the license amendment involves a change that is subject to a categorical exclusion pursuant to 10 CFR 51.22(c)(12)(i) and (iii). The NRC staff finds this 10 CFR Part 50 license amendment: 1) relates solely to safeguards matters (i.e., protection against sabotage or loss or diversion of SNM), and 2) is confined to organizational and procedural matters and administrative changes. Therefore, under 10 CFR 51.22(b), neither an environmental impact statement nor an environmental assessment is required to be prepared.

5.0 CONCLUSION

The Commission concludes: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: E. Helvenston, NRR
E. Reed, NRR

Date: July 17, 2018