

SAFETY EVALUATION REPORT

DOCKET NO.: 70-0113

LICENSE NO.: SNM-95

LICENSEE: The Pennsylvania State University

SUBJECT: APPROVAL OF LICENSE AMENDMENT REQUEST FOR AMENDMENT 5 TO SPECIAL NUCLEAR MATERIAL LICENSE SNM-95 TO AUTHORIZE REMOVAL OF A LINE ITEM AND A POSSESSION LIMIT FROM THEIR MATERIAL LICENSE AND TO AUTHORIZE AN ADDITION TO POSSESSION LIMITS CORRESPONDING TO SEALED SOURCES OF THREE DIFFERENT PLUTONIUM NUCLIDES - DOCKET NUMBER 070-0113 (CAC/EPID 000222/07000113/L-2025-NFA-0007)

BACKGROUND

By letter dated June 23, 2025 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML25184A058), the Pennsylvania State University (PSU) requested a license amendment to (1) remove an unused line item and possession limit from its PSU material license and (2) add possession limits corresponding to [Redacted] sources of three different plutonium nuclides.

In its license amendment request (LAR), PSU stated that the amendment is being requested to make two changes to their material license. The first change proposes to remove a possession limit on the license that is not currently used or needed, and which is not expected to be needed at any time in the future. The second change proposes to add possession limits corresponding to [Redacted] sources of three different plutonium nuclides. These possession limits support research planned to take place at University Park.

REGULATORY REQUIREMENTS

The U.S. Nuclear Regulatory Commission (NRC) reviewed the radiation protection program described in the PSU license application to determine whether the radiological health and safety of workers is adequately protected, as required by the regulations at Title 10 of the *Code of Federal Regulations* (10 CFR) Part 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," 10 CFR Part 20, "Standards for Protection Against Radiation," and 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material."

The Material Control and Accounting (MC&A) requirements applicable to PSU are contained in 10 CFR Part 74, Subpart B, "General Reporting and Recordkeeping Requirements." Licensees who possess, transfer, or receive special nuclear material (SNM) in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium are subject to the applicable general reporting and recordkeeping requirements of 10 CFR 74.11, 74.13, 74.15, and 74.19.

Enclosure 4

NUREG-2210, Revision 2 (ML22335A087), contains guidance for submitting applications under 10 CFR Part 70 for possession and use of special nuclear material (SNM) of critical mass that are not subject to the requirements in 10 CFR Part 70, Subpart H, “Additional Requirements for Certain Licensees Authorized To Possess a Critical Mass of Special Nuclear Material.” Specifically, NUREG -2210 describes the information required under 10 CFR 70.22, “Contents of applications,” for those that apply for a new, renewed, or amended materials license for possession and use of SNM in quantities exceeding the thresholds for critical mass quantities in 10 CFR 150.11, “Critical mass,” and that, due to the nature of their activities, are not subject to the requirements in 10 CFR Part 70, Subpart H.

Under 10 CFR 70.22(a)(8), the NRC may request financial qualification information when the nature of the proposed activities warrants such consideration. Under 10 CFR 70.22(a)(9), certain applications must include a decommissioning funding plan or certification of financial assurance, as required by 10 CFR 70.25.

Under 10 CFR 70.23, (a)(3) and (a)(4), (“Requirements for the approval of applications”), applicants proposed equipment and facilities are adequate to protect health and minimize danger to life or property and applicants proposed procedures are adequate to protect health and to minimize danger to life or property.

Finally, 10 CFR 73.67, “Licensee fixed site and in-transit requirements for the physical protection of special nuclear material of moderate and low strategic significance”, outlines the physical protection objectives that licensees must meet for storing, using, or transporting such material.

REGULATORY GUIDANCE

NUREG-1757, Volume 2, Revision 1, “Consolidated Decommissioning Guidance: Characterization, Survey, and Determination of Radiological Criteria Final Report,” September 2006 (ADAMS Accession No. ML063000243).

NUREG-1757, Volume 3, Revision 1, “Consolidated Decommissioning Guidance: Financial Assistance, Recordkeeping, and Timeliness,” February 2012, (ML12048A683).

NUREG-1520, Revision 2, “Standard Review Plan for Fuel Cycle Facilities License Applications,” June 2015 (ML15176A258).

NUREG-1556, Volume 20, Revision 1, “Guidance About Administrative Licensing Procedures,” November 2020 (ML20318A384).

Draft NUREG-2212, “Standard Review Plan for Applications for 10 CFR PART 70 Licenses for Possession and Use of Special Nuclear Materials of Critical Mass but not Subject to the Requirements in 10 CFR Part 70, Subpart H,” (ML22335A087).

REGULATORY GUIDE 5.59, “Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance,” February 1983 (ML100341301).

RADIATION PROTECTION

Purpose of this Review

The NRC staff reviewed the radiation protection program described in the Pennsylvania State University (PSU) license amendment request to determine whether the radiological health and safety of workers are adequately protected, as required by the regulations in 10 CFR Part 19, “Notices, Instructions and Reports to Workers: Inspection and Investigations,” 10 CFR Part 20, “Standards for Protection Against Radiation,” and 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material.”

PSU requested an amendment to its currently approved special nuclear materials license, SNM-95, to remove a possession limit that is no longer used or needed and to add three sealed sources containing three different plutonium isotopes.

Staff Review and Analysis

Proposed Changes

Change 1

Request to remove line item 6E and possession limit on the special nuclear materials license SNM-95. There is no source under line item 6E. Line-item E covers the possession of [Redacted] sources of plutonium isotopes (plutonium-238, plutonium-239, plutonium-240, plutonium-241, and plutonium-242). PSU in the 2014 renewal requested that this line item be removed. There is no source under this line currently and no plan for future. There is no change to radiation protection due to removal of this line item.

Change 2

Request adding [Redacted]. This amendment request supports funded research involving Mossbauer spectroscopy of actinide materials, including plutonium. The technique relies on recoilless gamma-ray emission and absorption from specific actinide isotopes such as neptunium-237, uranium-234, uranium-236, and uranium-238. Conducting these measurements requires [Redacted]—specifically, americium-241, plutonium-238, plutonium-240, and plutonium-242—which will need to be fabricated, likely at a national laboratory, and transferred to PSU for use in this work.

Radiation Source

The amendment covers [Redacted] containing plutonium-238, plutonium-240, and plutonium-242 for use in Mossbauer spectroscopy research on actinide materials. All sources [Redacted], meet the regulatory criteria for sealed source classification, and will be supplied with appropriate special-form certification. Upon receipt, [Redacted]

[Redacted]

If a received source is determined to be unsuitable, [Redacted] this approach enables the Principal Investigator (PI) to obtain a replacement source without interrupting research activities.

Incorporating a margin in possession limits has consistently proven effective in supporting research needs and is a standard practice at PSU.

The current special nuclear materials license, SNM-95, authorizes PSU to possess the same nuclides requested in this amendment—plutonium-238, plutonium-240, and plutonium-242. These isotopes are currently listed under line-item E, which is proposed for removal as part of Change 1. While the existing license specifies different possession limits and material forms for these nuclides, the isotopes themselves are identical to those included in this request.

Facility description

The research described in this amendment [Redacted] within the Radiation Science & Engineering Center (RSEC) at PSU's University Park campus. [Redacted]. [Redacted] The RSEC operates as a secured facility under a Class 104(c) license in accordance with 10 CFR Part 50.

Handling procedure

The sources included in this request will be [Redacted] radioactive materials; however, they can generate significant localized external dose rates and must therefore be handled as SNM. [Redacted] All activities involving the sources will be conducted in accordance with written procedures and authorizations reviewed and approved by the University Isotope Committee (UIC).

When not in active use, the sources will be stored in a shielded location within the laboratory. At all times, they must either remain under the direct supervision of an authorized worker or be secured with a tamper-indicating seal.

[Redacted]

Because of the potential for elevated extremity doses, personnel will be required by UIC to use long-handled tools—such as tongs or tweezers—when manipulating or moving the sources. Direct hand contact is prohibited by UIC, even when gloves are worn. Standard measurement activities will be performed using only one source at a time. If a spectroscopy experiment requires multiple sources, additional safety measures will be implemented, including posting the room as a radiation area, performing radiation surveys before, during, and after handling, and conducting pre-job planning or briefings. These requirements will be incorporated into the user authorization and the formal work procedure.

The primary hazard associated with this work is external radiation exposure from handling the [Redacted] Dose-rate evaluations indicate that plutonium-238 produces slightly higher external dose rates than plutonium-240, though both are similar in magnitude. The plutonium-242 source, [Redacted] presents a substantially lower external dose hazard.

[Redacted] Given these exposure characteristics, effective shielding is essential to the work controls for this research, and preventing direct handling of the sources remains a critical safety measure.

Internal radiation dose hazards were evaluated and determined to be negligible [Redacted]. However, due to the potential for external exposure, all personnel working in the Mossbauer

spectroscopy laboratory will be required to wear both extremity and whole-body dosimeters. These dosimeters will be managed through PSU's existing dosimetry program, which currently supports approximately 175 monitored individuals. Dosimetry results will be reviewed quarterly by Environmental Health & Safety radiation safety staff.

Ventilation and Airborne Radioactivity Evaluation

The Mossbauer laboratory space provides adequate ventilation, and airborne radioactivity is not anticipated due to the sealed-source configuration of the materials. In addition to evaluating worker exposures, potential radiation doses to members of the public were assessed. Restricting public access to the laboratory during any source handling or movement will ensure exposures remain well within regulatory limits—specifically below 2 millirem in any one hour and under 100 millirem per year, as required by 10 CFR 20.1301. Accordingly, no members of the public will be permitted in the laboratory during source transfers or handling activities. When not in use, the sources will be stored in a secured and shielded configuration that maintains radiation levels outside the laboratory within acceptable limits.

[Redacted]. All results are documented and retained for future reference.

[Redacted]

Radiation and contamination monitoring

The RSEC maintains a broad inventory of calibrated radiation-detection instruments suitable for both exposure monitoring and contamination surveys. Available equipment includes ion chambers for measuring radiation fields and Geiger-Mueller survey meters for contamination

detection. When alpha-emitting nuclides require evaluation, environment, health, and safety (EHS) radiation safety staff use a calibrated plastic scintillation detector. For the Mossbauer spectroscopy laboratory, a dedicated, calibrated radiation monitor will be assigned to the room and remain there at all times.

EHS radiation safety personnel conduct monthly radiation surveys using a calibrated ion chamber in all areas where SNM is used or stored. Survey results are documented and retained. In addition, weekly contamination checks are performed in general RSEC areas— [Redacted]—with results recorded and kept on file.

Incoming radioactive-material packages are also surveyed for contamination upon receipt to ensure compliance with NRC and Department of Transportation requirements. Personnel who receive and inspect these packages wear both extremity and whole-body dosimetry during the process.

Personnel Considerations

Qualifications of Supervising Principal Investigators

Dr. Jon Schwantes will serve as the Principal Investigator, with work conducted at the RSEC under the direction of Dr. Kenan Ünlü. A brief description of Dr. Ünlü's experience is provided in ML11294A215. Dr. Schwantes is a professor and Acting Department Head of Nuclear

Engineering at PSU, with expertise in nuclear and radiochemistry, nuclear forensics, and actinide science. Prior to joining PSU, he spent many years as a Senior Research Scientist at Pacific Northwest National Lab and has authored more than 120 publications.

His career highlights include contributing to the confirmation of element 111, leading the identification of the oldest known reactor-produced plutonium, and serving on Department of Energy response and investigation teams for major radiological events, including Fukushima and the Waste Isolation Pilot Plant contamination incident.

Dr. Schwantes' current research includes development of an Actinide Mossbauer Spectral Imager, establishment of Time of Flight Inductively Coupled Plasma Mass Spectrometry (TOF-ICP-MS) capabilities with laser ablation, and fundamental studies in actinide chemistry. He has more than 30 years of experience safely handling a broad range of radionuclides across diverse facilities and radiological environments.

Training Personnel

PSU requires radiation safety training for all employees, students, and visitors who work with radioactive materials on campus. Before performing any activities involving licensed or special nuclear materials, individuals must complete PSU's initial radiation safety program. This program includes in-person, hands-on instruction in contamination monitoring and fundamental radiation protection practices.

Waste Management

No changes to the existing waste management process are proposed in this amendment. [Redacted], EHS radiation safety staff will manage it in accordance with established procedures and transfer it to the secure centralized waste facility in the Academic Projects Building for storage, processing, and preparation for disposal.

Transportation

No change to the transportation requested in this amendment.

Responses to Incidents, Accidents, and Emergency Situations

All personnel authorized to work with radioactive materials receive training on spill and incident response and are instructed to contact EHS for any non-trivial event. EHS staff are fully equipped to manage spills and can provide additional protective equipment as needed.

[Redacted]

[Redacted]

Evaluation Findings

The NRC staff reviewed PSU's amendment request to add [Redacted] plutonium [Redacted] sources—plutonium-238, plutonium-240, and plutonium-242—and determined that, with appropriate controls on access, handling, and operations, the change remains fully consistent with existing RSEC and University procedures. The PI's extensive experience with nuclear

materials further supports this determination. The radiological risks to workers are comparable to those associated with sources already in use and can be effectively managed under PSU's established radiation protection programs. The review also identified no anticipated increase in radiological risk to the public from the additional materials. The NRC staff concluded that adding these [Redacted] sources does not alter the PSU radiation protection program as described in the license amendment submittal for the license application renewal dated November 5, 2014 (ML14314A043).

FIRE SAFETY

Purpose of Review

The purpose of this review was to determine, with reasonable assurance, that PSU has designed a facility that provides adequate protection against fires and explosions that could affect the safety of licensed materials and thus present an increased radiological risk. The review evaluated whether the application has considered radiological consequences of fires and instituted suitable safety controls to protect workers, the public, and the environment.

Staff Review and Analysis

Proposed Changes

PSU requests two changes to the special nuclear materials license, SNM-95, Amendment 4. First, PSU proposes removing a possession limit that is no longer used or needed and is not expected to be needed in the future. Second, PSU proposes adding possession limits for [Redacted] of three different plutonium nuclides. These possession limits support planned research activities at University Park.

Staff Review of Proposed Changes

The application states that research described in this amendment request would take place at the RSEC on PSU Park campus. The RSEC is a currently approved location listed on the existing special nuclear materials license SNM-95 (Amendment 4). The RSEC facilities include a variety of nuclear and radiochemistry laboratories and research areas, including the Breazeale Nuclear Reactor.

The NRC staff reviewed SNM sources, facility, and handling procedures as described in the application, and finds that there are no changes to the existing RSEC facility fire safety design or procedures with this amendment request. The existing fire safety features and procedures in place at RSEC are sufficient to afford an adequate degree of protection and safety for the individuals involved in the activities described in this amendment request.

Evaluation Findings

Based on this review, the NRC staff determines that the applicant's fire protection program at the existing RSEC will continue to meet the acceptance criteria presented in Chapter 7 of the NUREG 1520 Revision 2 and is adequate to protect against fires and explosions that could affect the safety of licensed materials. Therefore, the NRC staff concludes that the license amendment provides a reasonable level of assurance that adequate fire protection will be provided to meet the safety performance requirements of 10 CFR 70.23(a)(3) and (a)(4).

MATERIAL CONTROL AND ACCOUNTING

Purpose of Review

The purpose of this review was to ensure there would be no adverse impact on public health and safety or common defense and security because of PSU's license amendment request.

Staff Review and Analysis

The Material Control and Accounting (MC&A) requirements applicable to PSU are contained in 10 CFR Part 74, Subpart B, "General Reporting and Recordkeeping Requirements." Licensees who possess, transfer, or receive SNM in a quantity of one gram or more of contained uranium-235, uranium-233, or plutonium are subject to the applicable general reporting and recordkeeping requirements of 10 CFR 74.11, 74.13, 74.15, and 74.19. PSU requests to increase the possession limit to add [Redacted] plutonium sources, [Redacted] as sealed sources and to delete from the

authorized inventory approximate [Redacted] The [Redacted], [Redacted]. Since the new material amount is [Redacted] such that the total licensed material under the SNM-95 license remained below critical mass and the material would be subject to equivalent controls as other previously licensed material, as described in the application, the NRC staff considered there would be no impact on PSU's ability to detect and report loss, submit required Nuclear Materials Management Safeguards System reports, perform physical inventory, and maintain records, the general reporting and recordkeeping requirements as listed above.

Evaluation Findings

Based on the above, the NRC staff concludes that the MC&A portion in the application for amendment is acceptable and is in accordance with the requirements in 10 CFR 70.34, "Amendment of Licenses." The NRC staff finds that the facilities MC&A program, as delineated in its license and related safeguards conditions, remains effective [Redacted] as described in the amendment request.

DECOMMISSIONING FUNDING AND FINANCIAL ASSURANCE

Purpose of Review

The purpose of this review to determine whether the Pennsylvania State University (PSU) possession limits remain adequate to ensure decommissioning financial assurance requirements in accordance with guidance in NUREG-1757, Volume 3, Rev. 1, "Consolidated Decommissioning Guidance: Financial Assurance, Recordkeeping, and Timeliness." It must be determined if changes to the licensee's possession limits invoke new requirements, and it must be determined if PSU's financial instrument is adequate for the current scope of the program.

Staff Review and Analysis

NUREG-1556, Volume 20, Rev. 1, "Guidance About Administrative Licensing Procedures," states certain areas should be reviewed as part of the technical review of a license renewal application to ensure consistency with the applicable NUREG-1556 guidance.

NUREG–1757, Volume 3, Rev. 1, “Consolidated Decommissioning Guidance: Financial Assurance, Recordkeeping, and Timeliness,” provides guidance to the NRC staff on the information required to establish financial assurance for decommissioning, including recommended format. As part of the review, staff must evaluate the licensee’s possession limits to confirm whether decommissioning financial assurance requirements remain adequate or whether new requirements are triggered. If changes to the licensee’s possession limits invoke new requirements, the application must provide the appropriate supporting documents. For those licensees that must provide a financial assurance instrument, staff must verify that the instrument is adequate for the current scope of licensed activities.

In NRC’s Safety Evaluation of the PSU special nuclear materials license, SNM-95, 2024-2025 financial test for a self-guarantee (SG) for decommissioning funding (ML25168A019, non-public), NRC staff determined that the PSU self-guarantee agreement met the financial test criteria for a non-profit college that issues bonds. PSU conforms to the guidance in NUREG-1757, Volume 3, Revision 1, and meets the applicable requirements of 10 CFR Part 30 and 10 CFR 70.25.

PSU submitted documentation to demonstrate the university’s continued eligibility to use the self-guarantee. The submittal consisted of the following:

- An updated SG and associated Financial Test signed by the Associate Vice President for Finance
- An Independent Accountants Report and Schedule of Reconciling Amounts contained in NRC annual certification letter with amounts in the licensee’s consolidated financial statements, and
- PSU’s audited financial statements (with a web link) for the most recent fiscal year, including auditor’s opinion on the financial statements

According to the SG agreement (ML24362A105, attachment B, non-public), it states that the guarantee was made by the PSU, a nonprofit university organized under the laws of the Commonwealth of Pennsylvania, such that PSU has the authority to enter into the SG under its bylaws.

The certified decommissioning amount is based on a 2019 cost estimate projected to 2024 using compounded interest, with an additional 25 percent contingency. The SG agreement is signed by Virginia A. Teachy, Associate Vice President for Finance. The NRC staff finds the estimated amount to be reasonable and has determined that the licensee has an acceptable method of financial assurance to decommission, so as to protect public health and minimize danger to life or property. Therefore, the NRC staff finds that the licensee meets the requirement of 10 CFR 70.25(f)(2), for this LAR.

The NRC staff determined that PSU submitted the required documentation in 10 CFR Part 30, Appendix E, Section II(C)(2). PSU meets all the requirements of the financial test. In 10 CFR Part 30, Appendix E, Section III.A through G, it describes the terms for a SG, including:

- A. The guarantee will remain in force unless the licensee sends notice of cancellation by certified mail, and/or return receipt requested to the NRC. Cancellation may not occur unless an alternative financial assurance mechanism is in place.
- B. The license shall provide alternate financial assurance as specified in the NRC’s regulations within 90 days following receipt by the NRC of a notice of cancellation of the guarantee.

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- C. The guarantee and financial test provisions must remain in effect until the NRC has terminated the license or until another financial assurance method acceptable to the NRC has been put in effect by the licensee.
- D. PSU must provide the NRC with a written guarantee which states that the licensee will fund and carry out the required decommissioning activities or, upon issuance of an order by the NRC, the licensee will set up and fund a trust in the amount of the current cost estimates for decommissioning.
- E. If, at any time, the PSU's most recent bond issuance ceases to be rated in any category of "A" or above by either Standard & Poor's or Moody's, the licensee shall provide notice in writing of such fact to the NRC within 20 days after publication of the change by the rating service.
- F.
- G. A standby trust must be established to protect public health and safety and the environment for decommissioning costs prior to an SG being submitted; and
- H. Guarantor agrees that if guarantor admits in writing its inability to pay its debts generally, or makes a general assignment for the benefit of its creditors, or any proceeding is instituted against by or against the guarantor seeking to adjudicate it as bankrupt or insolvent ... then the Commission may: (a) declare the financial assurance guaranteed by the guarantee agreement is immediately due and payable to the standby trust ... ; and (b) exercise any and all of its other rights under applicable law.

NRC staff finds that PSU's SG contains the required terms and is consistent with the recommended language in NUREG-1757, Volume 3, Revision 1, Appendix A.9 and A.12. Therefore, it meets the requirements of 10 CFR Part 30, Appendix E, Section III.A–G and is considered reasonable. If PSU becomes insolvent or otherwise unable to meet financial obligations, the NRC may declare the SG immediately payable to the standby trust and exercise all other applicable legal rights.

In order for PSU to demonstrate reasonable assurance of the availability of funds for decommissioning based on the furnishings of its own guarantee and to demonstrate that PSU passes the financial test of Appendix E of 10 CFR Part 30, PSU is required per 10 CFR 70.25 to resubmit a decommissioning funding plan with adjustments as necessary to account for charges in costs and the extent of contamination for review and approval at an interval not to exceed three years. This updated decommissioning funding plan estimate evaluation will be subject to a separate safety evaluation.

Regarding financial assurance for this amendment, PSU stated, "...PSU is currently approved to possess each of the nuclides requested in this document (plutonium-238, plutonium-240, and plutonium-242, each listed under line-item E, which is requested to be removed as part of Change 1). [Redacted]

[Redacted]

[Redacted], PSU has concluded that the current self-guarantee agreement has allocated adequate funds for the disposal of any additional radioactive materials associated with this proposed change. This is due mainly to the 25% contingency included in the approved Decommissioning Funding Plan which is considered to be

[Redacted] Pursuant to 10 CFR 30.35 (g), and 10 CFR 40.36 (f), PSU maintains records of information important to the decommissioning of facilities and will transfer these records when licensed activities are terminated.”

[Redacted]

By letter dated December 22, 2025 (ML26006A137, non-public), the PSU submitted updates to the Decommissioning Cost Estimate (DCE) for Special Nuclear Materials, University Park campus, special nuclear materials license SNM-95, in compliance with 10 CFR 30.35(e)(1)(i)(A) for NRC staff review and approval. It is stated “that the University plans to provide financial assurances and self-guarantees as required and in accordance with approved DCEs.” In PSU’s 2025 updated DCE, they estimated that the total cost to decommission, for unrestricted use, to be \$413,272, with 25% contingency, in 2025 dollars.

Evaluation Findings

The NRC staff has determined that the PSU possession limits do not change the decommissioning financial assurance requirements, in accordance with guidance in NUREG–1757, Volume 3, Rev. 1. The NRC staff has determined that changes to PSU’s possession limits do not invoke new requirements, and it has been determined that PSU’s financial instrument is adequate for the current scope of the program.

Based on NRC staff’s review of the license amendment request, the approved 2024-2025 financial test for self-guarantee, and the 2025 updated DCE, the request to remove line item 6E and to add line item G for possession limits corresponding to sealed sources of three different plutonium nuclides, is acceptable and is therefore approved.

PHYSICAL SECURITY

Purpose of Review

The purpose of NRC staff’s review is to determine if the proposed changes to special nuclear materials license, SNM-95, to increase its special nuclear material (SNM) possession limits, as discussed in the license amendment, continues to meet the regulatory requirements in 10 CFR 73.67(f) and 73.7(g) for the protection of Category III (Cat III) SNM while in storage/use and during transit, and is consistent with the guidance in Regulatory Guide (RG) 5.59, “Standard Format and Content for a Licensee Physical Security Plan for the Protection of Special Nuclear Material of Moderate or Low Strategic Significance” (ML100341301).

Staff Review and Analysis

A safety evaluation report (SER) is not needed for fixed site or transport security for a minor increase in plutonium possession; the NRC staff performed a site visit and produced a safety evaluation report in December 2024, regarding receiving SNM at a new location on the PSU campus and transporting Cat III SNM to other buildings on PSU campus and on public roads that was a part of license amendment 4. The following is a discussion with regards to why an SER is not needed for this license amendment request:

The NRC staff reviewed the June 23, 2025, request from PSU to increase possession limits for [Redacted] The NRC staff also reviewed the PSU November 5, 2014, license renewal submittal (ML14314A044) that shows the SNM inventory [Redacted]. [Redacted] Based on this information, PSU is still in possession of Category III SNM [Redacted].

The staff reviewed the license amendment request to amend special nuclear materials license SNM-95, to increase its SNM limits. The NRC staff finds that the proposed increase in possession limits to SNM license SNM-95 are acceptable, and that PSU has adequate procedures in place to continue to meet the requirements of 10 CFR 73.67(f) and (g) and are consistent with the guidance in RG 5.59. Accordingly, the NRC staff finds that the proposed changes to the license will not be inimical to the common defense and security and does not constitute an unreasonable risk to public health and safety.

ENVIRONMENTAL REVIEW

The NRC staff determined that PSU's proposed license amendment request meets the categorical exclusion provision in 10 CFR 51.22(d)(7), and there are no extraordinary circumstances present that would preclude reliance on this exclusion. The NRC staff have made this finding because the action pertains to an amendment to a 10 CFR Part 70 license that will not result in: any ground disturbance, effluent changes, increased additional exposure or increased accident consequences. Therefore, pursuant to 10 CFR 51.22, the NRC staff concludes that this action does not require either an environmental assessment or an environmental impact statement.

The NRC staff has determined that the action is not a type of activity that has the potential to cause effects on historic properties. Therefore, in accordance with 36 CFR 800.3(a)(1), the NRC has no further obligation under Section 106 of the National Historic Preservation Act. The NRC staff has determined that the action would have no effect on listed species or critical habitats, therefore, consultation is not required under Section 7 of the Endangered Species Act.

CONCLUSION

The NRC staff concludes that PSU's safety program, the actions taken by PSU, as discussed herein, prior to and after the submittal of their LAR 1) to remove line item 6E and possession limit on the SNM-95 license and 2) to authorize an addition to possession limits corresponding to [Redacted] of three different plutonium nuclides provides reasonable assurance that public health and safety and the environment will be adequately protected from the hazards posed by PSU's NRC-licensed activities.

For the reasons set forth above, the staff finds that the proposed changes to special nuclear materials license, SNM-95, are acceptable, meet the requirements of 10 CFR 70.23(a)(3) and (a)(4), 10 CFR 70.34, and 10 CFR 73.67(f) and (g), and are consistent with the guidance in RG 5.59. Accordingly, the NRC staff finds that the proposed changes to the license will not be inimical to the common defense and security and does not constitute an unreasonable risk to public health, safety, and security.

As such, the NRC staff concludes that PSU's LAR can be approved.

REFERENCES

~~OFFICIAL USE ONLY – SECURITY-RELATED INFORMATION~~

NRC, NUREG-1520, “Standard Review Plan for Fuel Facilities License Applications,” Revision 2, June 2015, ML15176A258.

NRC, NUREG-2212 (Draft), “Standard Review Plan for Applications for 10 CFR Part 70 Licenses for Possession and Use of Special Nuclear Materials of Critical Mass but not Subject to the Requirements in 10 CFR Part 70, Subpart H,” September 2022, ML22335A087.

NRC, “Pennsylvania State University – License Amendment Request to Add One Authorized Building (Enterprise Project Identification Number L-2023-NFA-0002),” August 5, 2024, ADAMS Accession No. ML24198A034.

NRC, “Request for Supplemental Information,” August 5, 2024, ADAMS Accession No. ML24198A032.

NRC, “Request for Additional Information,” March 10, 2025, ADAMS Accession No. ML25049A289.

Pennsylvania State University (PSU), “License Amendment Request to Add Nuclide Possession Limits for Research,” June 23, 2025, ADAMS Accession No. ML25184A058.

PSU, “Amendment Request to PSU License Renewal Application dated August 1, 2014,” November 5, 2014, ADAMS Accession No. ML14314A043.

NRC, “Safety Evaluation for PSU 2022 Financial Test for Self-Guarantee,” June 2025, ADAMS Accession No. ML25168A019.

PSU, “Attachment B – PSU Self Guarantee,” December 13, 2024, ADAMS Accession No. ML24362A105.

PSU, “PSU Decommissioning Cost Estimates,” December 22, 2025, ADAMS Accession No. ML26006A137.

PSU, “PSU Enclosure 1 – Renewal Application,” November 5, 2014, ADAMS Accession No. ML14314A044.

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