

REQUEST FOR ADDITIONAL INFORMATION
Pennsylvania State University
License Renewal
(TECHNICAL ASSIGNMENT CONTROL L33343, Docket 70-113)

General

1. Provide the name, citizenship, and address of the principal office of the senior management official for this application.

In describing the organizational structure, Section 2.1 of the renewal application (Ref. 1) states that the senior management official responsible for radiation safety at Pennsylvania State University (PSU) is the Vice President for Research (VPR), who reports to the Executive Vice President and Provost. The license application dated 2003 (Ref. 2), which is currently in effect pending review of the subject application, identified and was signed by the VPR. The renewal application of 2013 (Ref. 3) was signed by an interim VPR; version of the license application that accepted by the U.S. Nuclear Regulatory Commission (NRC) staff for a detailed technical review (Ref. 1) was signed by the Radiation Safety Officer (RSO).

Title 10 of the *Code of Federal Regulations* (10 CFR) 70.22(a)(1) requires the full names, address, and citizenship of its principal officers, and shall include information known to the applicant concerning the control and ownership.

2. Discuss the position of the individual who has ultimate authority to stop activities with special nuclear material (SNM) should someone determine that hazardous or security-related condition exists. Discuss how such authority is delegated to subordinates, from the Radiation Protection Staff (Section 2.4 of Reference 1) to the Radiation Worker (Section 2.6 of Reference 1).

10 CFR 70.22(a)(8) requires proposed procedures to protect health and minimize danger to life or property.

3. Should a student or subordinate research assistant allege that SNM is misused, discuss the key elements and attributes of the means to prevent retaliation by senior researchers and professors.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and minimize danger to life or property.

4. Discuss the mechanism, available for use by any person, for reporting potentially unsafe conditions or activities. Discuss how reported concerns are assessed and resolved. Discuss the timeliness of a response. Discuss resulting documentation.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and minimize danger to life or property.

Enclosure

5. Indicate major nearby highways whereby off-site responders could approach the University Park Campus. Includes this information in Section 1.1.4 of the renewal application (Ref. 1).

10 CFR 70.22(a)(7) requires, in part, a description of facilities which will be used by the applicant to protect health and minimize danger to life or property.

6. Section 8 of the renewal application (Ref. 1) correctly states that an emergency plan is not required. State key elements and attributes of written agreements with offsite emergency resources such as fire fighters, police, ambulance units, rescue units, and medical services (e.g., hospitals).

10 CFR 70.22(a)(8) requires proposed procedures to protect health and minimize danger to life or property.

7. A principal investigator is the first level of safety in being responsible for all activities using radioactive material. Discuss the minimum requirements for a principal investigator to conduct activities safely.

10 CFR 70.22(a)(6) requires technical qualifications, including training and experience of the applicant and members of his staff to engage in the proposed activities in accordance with the regulations.

8. Section 2.5 of the renewal application (Ref. 1) states that the principal investigator is responsible for all activities using radioactive material as authorized; their duties and safety responsibilities are discussed in PSU Safety Policy SY-01. State key elements and attributes of such responsibilities. Discuss the process to conduct a safety assessment so the hazards of a proposed activity (including potential chemical hazards) are identified.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and to minimize danger to life or property are adequate.

9. Discuss key elements and attributes of the review process stated in Section 1.1.6 of the renewal application (Ref. 1). List key review criteria. Discuss the key elements and attributes of the information that is examined by reviewers (e.g., the RSO, the University Isotopes Committee (UIC)). Discuss the scope of the safety assessment (e.g, radiological, chemical, fire) submitted for review. Identify the individual who initiates and maintains the safety assessment during the course of a review. See also RAI 13.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and to minimize danger to life or property are adequate.

10. Discuss where the safety review process is documented. Discuss how the review process is revised should changes be necessary. Discuss who makes revisions.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and to minimize danger to life or property are adequate.

Fire Safety

11. The renewal application (Ref. 1) lacks a discussion of the fire protection features of the SNM use and storage locations in the Academic Projects Building (APB). Discuss the fire protection features.

10 CFR 70.22(a)(7) requires a description of equipment and facilities which will be used by the applicant to protect health and minimize danger to life or property (such as handling devices, working areas, shields, measuring and monitoring instruments, devices for the disposal of radioactive effluents and wastes, storage facilities, criticality accident alarm systems, etc.);

Radiation Safety

12. Section 4.3.3.1 of the renewal application (Ref. 1) states that dosimetry for this application is not required. Furthermore, it states that dosimetry is required where an individual might exceed 10% of the limits specified in 10 CFR 20.1502(a) and that dosimetry used will come from a provider holding accreditation with the National Voluntary Laboratory Accreditation Program (NVLAP). The need for dosimetry is determined on a case by case basis as part of the review by the RSO. Describe, in detail, how PSU demonstrates compliance with the specified limits. State what is required and reviewed as part of an authorization to make a determination of the need for dosimetry. Include descriptions of surveillances of work following approval of an authorization to ensure compliance with the terms of an authorization.

10 CFR 20.1502 requires a licensee to monitor exposures to radiation and radioactive material at levels sufficient to demonstrate compliance with occupational dose limits.

13. Section 1.1.6 renewal application (Ref. 1) states that the use of SNM is authorized by the University Isotopes Committee (UIC) and Radiation Protection Office, to ensure compliance with license conditions, that procedures are prepared, and physical security is maintained. Describe, in detail, the authorization, review, and approval process, to include who prepares the request, the content of the authorization request, expectations of the UIC in an authorization (e.g., procedures, controls, security, duration) approvals, where these are retained, and any in-process reviews (e.g., surveillance) conducted to ensure that compliance is maintained. See also RAI 9.

10 CFR 20.1101(b) requires a licensee to use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are As Low As Reasonably Achievable (ALARA).

14. Section 4.1 renewal application (Ref. 1) states a policy of PSU is to keep the exposure of people to ionizing radiation ALARA. Provide the basis of how PSU demonstrates compliance with the dose limits for individual members of the public.

10 CFR 20.1301(a) requires a licensee to conduct operations such that (1) the Total Effective Dose Equivalent (TEDE) to individual members of the public from licensed operations shall not exceed 0.1 Rem in a year, and that (2) the dose in any unrestricted area from external sources

does not exceed 0.002 Rem in any one hour. 10 CFR 20.1302 requires that a licensee show compliance with the annual dose limit in 20.1301 as demonstrated in subparagraphs (1) or (2).

15. Section 1.4.1 of the renewal application (Ref. 1) states the UIC has authorized three locations for the use of SNM. Section 4.7.1 states the normal storage location is within the Radiation Science and Engineering Center (RSEC) Controlled Access Area (CAA). Describe the controls and physical security for radioactive materials under this license when not in normal storage within the CAA. NOTE: to the extent that such information has been provided to the NRC in a response to RAIS on physical security dated June 17, 2015, PSU may refer to the submitted information by reference to specific answers.

10 CFR 73.67(a) provides general performance objectives for the physical security of SNM for Low Strategic Significance (LSS) and 10 CFR 73.67(f) provides specifics for fixed site requirements for SNM of LSS. 10 CFR 20.1801 and 20.1802 states the control and security regulations for materials in or not in storage.

Material Control and Accountability

16. Section 1.1.2 of the renewal application (Ref. 1) requests that License Condition 12 be removed. The license condition states that a university-issued authorization to use SNM is granted for a 3-year period and that a new request requires approval by the UIC for continuation. Section 4.4.1 states it is redundant to the PSU practice of renewing authorizations every three years. Section 2.2 states that 3-year authorization renewals are one of the responsibilities of the UIC. Clarify the reason for deleting Condition 12 that is a common practice of the UIC. Discuss how the subject request does not decrease the effectiveness in the material control and accounting program. Discuss why it is of no value to the UIC to be informed of the continuance of work. Discuss why the approval of continued use of SNM is invested in one person, namely the RSO.

10 CFR 70.32(c)(3) states that the licensee shall make no change that would decrease the effectiveness of the material control and accounting program.

17. Discuss the key elements and attributes of the current revision of Administrative Procedure AP-19, SNM Control and Accounting, as it pertains to license SNM-95.

Title 10 Code of Federal Regulations (CFR) Parts 74.11, 74.13, 74.15, and 74.19 contain material control and accounting (MC&A) requirements for licensees possessing 1 gram or more of SNM. Section 11.4, Material Control and Accountability, of the license renewal application states that SNM Accountability is managed in compliance with 10 CFR Subpart B through reactor Administrative Procedure AP-19, SNM Control and Accounting.

10 CFR 70.22(a)(8) requires proposed procedures to protect health and minimize danger to life or property (such as procedures to avoid accidental criticality, procedures for personnel monitoring and waste disposal, post-criticality accident emergency procedures, etc.).

Other

18. The renewal application (Ref. 1) makes reference to websites for supplemental information. Discuss information, if any, that PSU would want the NRC staff to consider

during the review of the renewal application. Information that the NRC staff considers must be docketed.

A website link can change. Information on the website can change.

10 CFR 70.33 states that applications for renewal of a license should be filed in accordance with 10 CFR 70.21 and 10 CFR 70.22. Information contained in previous applications, statements or reports filed with the Commission under the license may be incorporated by reference, provided that such references are clear and specific.

References

1. Letter from J. Leavey, Pennsylvania State University, "Amendments to PSU License Renewal Application Dated August 1, 2014", November 5, 2015. ADAMS accession number ML14314A040.
2. Letter from E. Pell, Pennsylvania State University, "Application for Material License, NRC form 313", May 23, 2003. ADAMS accession number ML031640416.
3. Letter from N. Sharkey, Pennsylvania State University, "License renewal request for License SNM-95 (Docket: 070-0113)", September 23, 2013. ADAMS accession number ML13273A207.