August 4, 2009

Dr. Jay F. Kunze, P.E., CHP
Dean, Professor and Reactor Administrator
Idaho State University
Campus Box 8060
Pocatello, ID 83209-8060

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING RENEWAL OF SPECIAL NUCLEAR MATERIAL LICENSE SNM-1373 (TAC NO. L32827)

Dear Dr. Kunze:

We have reviewed your application, dated February 27, 2009, for renewal of Materials License SNM-1373 and have identified additional information that is needed before we can take final action on the license renewal application. The additional information, identified in Enclosure 1, should be provided within 30 days of the date of this letter. We also reviewed the Physical Security Plan for the research reactor license R-110 to determine whether or not it addresses all requirements for special nuclear material. Review questions concerning the physical security plan are in Enclosure 2; these review questions are security-related information and will be withheld from public disclosure. Replies to the Physical Security Plan review questions may also be security-related information and should be transmitted in accordance with the requirements for handling such information.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the U.S. Nuclear Regulatory Commission's (NRC's) "Rules of Practice," a copy of this letter and the enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

If you have any questions regarding this matter, please contact me at (301) 415-8103 or via e-mail to Mary.Adams@nrc.gov.

Sincerely,

/RA/

Mary T. Adams, Senior Project Manager
Fuel Manufacturing Branch
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 70-1374
License No.: SNM-1373

Enclosure(s)
1. Request for Additional Information, Safety Review
2. Physical Security Plan Request for Additional Information –Security-Related information (non-public)

If you have any questions regarding this matter, please contact me at (301) 415-8103 or via e-mail to Mary.Adams@nrc.gov.

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REQUEST FOR ADDITIONAL INFORMATION
RENEWAL OF SPECIAL NUCLEAR MATERIALS LICENSE SNM-1373
IDAHO STATE UNIVERSITY
POCATELLO, IDAHO
DOCKET NO. 70-1374

Radiation Safety

RP-1 Revise Section 8 and/or 10 of the Application to include reference to the Emergency Plan. This is necessary for staff to confirm compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) 70.22(i)(1).

RP-2 Please provide evaluations performed involving release of radioactive material in the event of fire. This is necessary for staff to confirm compliance with 10 CFR 70.22(i)(1)(i) and 70.23(a)(2).

RP-3 Revise Section 8(a) of the application to include discussion regarding developing written operating procedures, policies, and instructions to ensure that occupational radiation exposures are maintained as low as is reasonably achievable. This may be similar to the discussion in the University's Radiation Safety manual Sections 3.1 and 3.2.3. This is necessary for staff to confirm compliance with 10 CFR 20.1101(b) and 70.23(a)(4).

RP-4 Revise Section 7(a) of the application to include a brief discussion on the history of internal and external exposure with regards to the handling of the licensed materials so staff can assess the physical controls in place. This is necessary for staff to confirm compliance with 10 CFR 20.1101, 20.1501(a)(2), and 70.23(a)(3).

RP-5 Revise Section 7(c) and/or 8(a) of the application to include discussion regarding processing frequency of dosimeters and assessment of external exposures. This may be similar to discussion in Section 10.4(1) of the University's Radiation Safety manual. This is necessary for staff to confirm compliance with 10 CFR 20.1201 and 70.23(a)(4).

RP-6 Revise Section 8(a) of the application to include discussion of controls to prevent and methods available to assess internal intakes of licensed material. This may be, in part, similar to section 11.3 of the University's Radiation Safety manual. This is necessary for staff to confirm compliance with 10 CFR 20.1204(a), 20.1701, and 70.23(a)(4).

RP-7 Revise Section 7(c), 8(a), 8(c) [the 2nd 8(c)], and/or 8(d) [the 1st 8(d)] of the application, as appropriate, to include discussion regarding analysis methods and action levels for contamination surveys, leak tests, and analysis of "experiment" water. This may be, in part, similar to Section 11.1(3) of the University's Radiation Safety manual. If the action level is based on detection sensitivity, state the required minimum detectable concentration of the analytical method. This is necessary for staff to confirm compliance with 10 CFR 20.1501(a)(2) and 70.23(a)(4).

RP-8 Revise Section 7(c) and/or 7(d) of the application to include discussion regarding gaseous and liquid effluents and, if applicable, the treatment and monitoring systems in place as well as the action levels. This is necessary for staff to confirm compliance with 10 CFR 20.1501(a)(2), 20.1101(b), and 70.23(a)(3).

RP-9 Revise Section 8(a) of the application to include discussion regarding reporting of incidents in accordance with 10 CFR 70.74 and 10 CFR 20 Subpart M. This is necessary for staff to confirm compliance with these regulatory citations.

RP-10 Revise Section 8(a) of the application to include discussion on maintaining records of audits, instrument calibrations, surveys, exposures, waste disposal, training, etc. consistent with 10 CFR 20 Subpart L. This is necessary for staff to confirm compliance with this regulatory citation.

RP-11 Revise Section 6 of the application to outline the radiation protection program structure and define the minimum qualifications and responsibilities of key program personnel. This may be, in part, similar to Section 4 of the University's Radiation Safety manual. This is necessary for staff to confirm compliance with 10 CFR 70.22(a)(6), 70.23(a)(2), and 10 CFR 20.1101(a), please

RP-12 Revise Section 8(a) of the application to discuss content, review, and assessment of the training program for radiation protection. This may be similar to Section 6 of the University's Radiation Protection manual. This is necessary for staff to confirm compliance with 10 CFR 19.12 and 10 CFR 70.23(a)(2).

RP-13 Revise Section 7(d) of the application to discuss waste disposal and waste minimization practices. This may be similar to Section 17 of the University's Radiation Safety manual. This is necessary for staff to confirm compliance with 10 CFR 20 Subpart K.

RP-14 Revise Section 8(a) of the application to describe that the Radiation Protection Program will be evaluated annually consistent with 10 CFR 20.1101(c). This may be similar to the discussion in the University's Radiation Safety manual Section 7.

RP-15 Clarify how the statement in Section 8(d) [2nd 8(d)] of the application is not inconsistent with the note in Section 10 (i.e., Is the Physical Science Building Particle Beam Laboratory the same as the Idaho Accelerator Center?).

<u>Criticality Safety</u>

CS-1 State how the criticality accident alarm system (CAAS) will be established and maintained to initiate personnel protective actions in the event of inadvertent criticality, such as by following the requirements in ANSI/ANS-8.3-1997, "Criticality Accident Alarm System," as modified by the U.S. Nuclear Regulatory Commission Regulatory Guide 3.71, Revision 1, dated October 2005. If the standard will not be used, demonstrate that an alternative provides at least the same level of safety as provided by the standard and regulatory guide.

10 CFR 70.22(a)(7) states that the license application must contain a description of the equipment and facilities which will be used by the applicant to protect health and minimize danger to life or property and 70.22(a)(8) states that the license application must contain proposed procedures to protect health and minimize danger to life or property.

CS-2 State the criteria for emergency planning and response to a nuclear criticality accident for facilities outside reactors that process, store, or handle fissionable material, such as by following the requirements in ANSI/ANS-8.23-2007, "Nuclear Criticality Accident

Emergency Planning and Response." If the standard is not used, discuss how the alternative achieves at least the same level of safety as the standard.

10 CFR 70.22(a)(7) states that the license application must contain a description of the equipment and facilities which will be used by the applicant to protect health and minimize danger to life or property and 70.22(a)(8) states that the license application must contain proposed procedures to protect health and minimize danger to life or property.

CS-3 State the provisions for the CAAS to be out of service (OOS), an OOS period limitation and compensatory measures while the CAAS is OOS. According to the CAAS requirements in 10 CFR 70.24, address the following:

(a) State how the CAAS is designed to remain operational during credible events such as a fire, an explosion, a corrosive atmosphere, and other credible conditions.

(b) State how fixed and personnel accident dosimeters in areas that require a CAAS are used.

(c) State how the CAAS alarm is clearly audible in areas that must be evacuated. Alternatively, discuss other notification methods that are documented to be effective in notifying personnel that evacuation is necessary.

(d) State how emergency power for the CAAS is provided. Alternatively, justify the use of continuous monitoring with portable instruments.

10 CFR 70.24 states that the licensee shall maintain emergency procedures for each area in which the licensed special nuclear material is handled, used, or stored to ensure that all personnel withdraw to an area of safety upon the sounding of the alarm.

<u>Fire Safety</u>

FS-1 10 CFR 70.22 (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.)."

To satisfy this requirement in regard to fire safety, the licensee should provide the following:

a) A description of Room 23 and any other areas where special nuclear material may be stored. Describe the construction of the facility and fire ratings of walls, floors, ceilings, doors, and windows that may serve as fire boundaries to such areas. Fire rated doors, windows, and other openings should be described in terms of compliance with National Fire Protection Association 80 "Standard for Fire Doors and Other Opening Protectives."

b) A list with the name, type and estimated maximum quantity of combustibles that may exist in Room 23 and other areas containing SNM. Distinguish between in-situ and transient combustibles.

c) A description of your fire protection program including control of combustibles and ignition sources, employee training, pre-fire plans, and the identification of managers in charge of fire safety.

d) A description of any automatic fire detection and suppression systems within the areas of interest with regard to locations and their design basis or performance criteria. List the codes and standards used in the design, surveillances, testing, and maintenance of these systems.

e) The renewal application lists dry-chemical fire extinguishers as a means of suppression in the areas of interest. Describe the extinguisher training (if any) provided to operators. Also, discuss type, size, and placement of fire extinguishers in regard to compliance with NFPA 10, "Standard for Portable Fire Extinguishers."

f) Provide the response time of the nearest fire department including notification time and time to reach the fire location with fire suppression equipment.

FS-2 Describe any potential fire induced electrical failures, including spurious signals or actuations that could result in a radiological or chemical release and/or criticality. If the potential for such events exists, provide the likelihood of such events and the controls provided (if any) to prevent or mitigate such events.

Physical Security

Review questions related to physical security are provided in Enclosure 2, which is designated as sensitive unclassified nuclear security information and will be withheld from public disclosure.