

February 1, 2008

Mr. Timothy F. Mengers, CHP, PE
Chief of Health Physics
National Institute of Standards
and Technology
Building 245 Room C125
100 Bureau Drive, MS 1731
Gaithersburg, MD 20899-1731

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING THE NATIONAL
INSTITUTE OF STANDARDS AND TECHNOLOGY LICENSE RENEWAL
APPLICATION (TAC L32643)

Dear Mr. Mengers:

We have completed our review of your application for license renewal of License Number SNM-362, transmitted by letter dated June 29, 2007 (ML071930318), and accepted by our letter dated August 3, 2007 (ML072080154). Our review of your application has identified that additional information is needed before final action can be taken on your submittal.

Your responses to the enclosed Request for Additional Information (RAI) should be provided within 30 days from the date of this letter. Please reference the above Technical Assignment Control (TAC) number in your response to our request, and all future correspondence associated with this action.

Pending the additional information responses to the RAIs, we anticipate completing our review by the end of July 2008. This date could change depending on the findings of our technical review, urgent assignments, or other factors. We will promptly communicate any significant changes to this schedule.

If you have any questions regarding this matter, please contact me at (301) 492-3110 or via e-mail to bmr@nrc.gov.

In accordance with 10 CFR 2.390 of the Nuclear Regulatory Commission's (NRC) "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, a component of NRC's Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

/RA, by M. Adams for/

M. Breeda Reilly, Project Manager
Fuel Facilities Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No.: 70-398
License No.: SNM-362

Enclosure: Request for Additional Information

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REQUEST FOR ADDITIONAL INFORMATION

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY LICENSE RENEWAL APPLICATION

Please provide the following information:

Nuclear Criticality Analysis

- N1. Commit to or request an exemption from the criticality accident alarm system (CAAS) requirements specified in 10 CFR 70.24. Provide the appropriate change pages to your license renewal application.

10 CFR 70.24(a) requires licensees authorized to possess a critical mass of special nuclear material (SNM), as defined in 10 CFR 70.4, to maintain a CAAS in each area where the licensed SNM is handled, used, or stored.

Fire Safety

- F1. There are various flammable, combustible, and explosive gases and liquids referenced throughout the license renewal application, and were observed during our site visit, however, no specific code commitments were found in reference to the safe handling, storage, and use of these materials. Through change pages to your license renewal application, provide either a code commitment or the details on how safe practices are insured in the handling, storage, and use of these materials. Chapter 7 of NFPA 801, "Standard for Fire Protection for Facilities Handling Radioactive Materials," describes several means of compliance on how safe practices may be insured in the handling, storage, and use of these materials.

10 CFR 70.23(a)(1) requires that the licensee's equipment and facilities are adequate to protect health and minimize danger to life or property.

Decommissioning Funding Plan

- D1. The decommissioning funding plan (DFP) does not contain sufficient detail to determine if the requirements of 10 CFR 70.25(e) have been addressed. Therefore, the DFP should be supplemented to: (1) explain how the items listed below were included; or (2) revise the cost estimate to include the following:
- a. NUREG-1757, Vol. 3, App. A.3.1.2.1 "Labor costs associated with all decommissioning tasks and activities should include basic wages and benefits for licensee and contractor staff performing decommissioning-related tasks, overhead costs, and contractor profit sufficient to allow an independent third party to carry out the decommissioning project."

Enclosure

- b. NUREG-1757, Vol. 3, App. A.3.1.2.3, "Because of the uncertainty in contamination levels, waste disposal costs, and other costs associated with decommissioning, the cost estimate should apply a contingency factor of 25 percent to the sum of all estimated decommissioning costs."
 - c. 10 CFR Part 30.35(e) – Means for Adjusting the Cost Estimate; "Cost estimates must be adjusted at intervals not to exceed three years."
- D2. National Institute of Standards and Technology's (NIST) cost estimate states, "In addition other areas of Building 245 have residual induced activity due to accelerator operations conducted from the 1960s through the 1980s. These are not considered in this analysis but will require additional resources to address before all portions of the building may be released for uncontrolled use."

As described in NUREG-1757, Vol. 3, App. A.3.1, the NRC staff evaluates the completeness of decommissioning cost estimates. To ensure completeness of the cost estimate, substantiate all sources and costs associated with fully decommissioning, including the general costs associated with decommissioning Building 245. After our site visit, it appears that the additional costs associated with the areas of Building 245, which were not addressed in the cost estimate, will exceed \$10,000.00. If the total cost of decommissioning increases by more than \$10,000.00, the amount of NIST's statement of intent will need to be increased in order to provide a satisfactory level of financial assurance. Note that the language of the statement of intent has been found acceptable, but the dollar amount may need to be increased.

Radiation Protection

- R1. With regard to the radiation protection programs required under 10 CFR 20.1101, provide the following information:

The section regarding the "Radiation Safety Committee" (pages 12-13 of the license renewal application) states that the Ionizing Radiation Safety Committee (IRSC) reviews proposals for major radiation facility uses (page 13). Through a change page to your license renewal application, specify the purpose of the review. If the IRSC provides recommendations, how are they addressed before approval of a new or modified program?

- R2. With regard to staff training and experience required under 10 CFR 70.23(a)(2), provide the following information:

Item 9 "Facilities and Equipment" (pages 24-25) describes a review and approval process that Health Physics will conduct for new radiological activities. The Hazards Assessment does not appear to include a review of the individual's training or qualification to use radioactive material. Through a change page to your license renewal application, provide a statement that Health Physics will review and verify that the laboratory staff has the requisite training and qualifications required to conduct the radiological activities.

- R3. With regard to worker training required under, 10 CFR 19.12, provide the following information:

The section entitled "Training for Individuals Working in or Frequenting Restricted Areas" contains multiple requirements for training. Provide additional training emphasis on the as low as reasonably achievable (ALARA) principles including minimizing dose through time, distance, and shielding.

- R4. Consistent with the regulatory requirements in 10 CFR 20.1101 and 10 CFR 70.9(a), provide the following administrative corrections:

The section on "Extremity Dosimetry" (page 40) contains a commitment to use extremity dosimetry under certain circumstances. The first bullet in the section is not clearly stated. Through a page change, clarify under what conditions extremity dosimetry will be required. Specifically, clarify the meaning of, "... on the safety review of the facilities, source terms, and knowledge of previous similar operations."

- R5. With regard to surveys and monitoring requirements in 10 CFR 20.1501(a), provide the following information:

In the last bullet of the section entitled "External Personnel Dosimetry Monitoring," on the top of page 40, revise the statement "secondary direct reading dosimetry" from a recommendation ("should") to a commitment. Clarify the type of monitoring included in "direct reading dosimetry," as used on page 40, and provide additional criteria for when "direct reading dosimetry" will be required.

The commitment to use secondary direct reading dosimetry (top of page 40) implies the licensee will take some precautionary, ALARA measures under some undefined circumstances. State the action levels and follow-up actions to be taken as a result of staff detecting elevated direct reading dosimetry values.

General Information

- G1. Item 3, page 1, of the license renewal application states that material under this license may be approved for use and possession at any location on the NIST campus and annex located in Gaithersburg, MD. In the same section, the main NIST facility is described as a fenced, federal facility consisting of 234 hectares (578 acres), encompassing fifty-two structures and facilities. Please provide a brief description of the annex, including its location in relation to the main NIST facility, and its size, structures, and activities.

Also, on page 2, the license renewal application states that any location within the NIST grounds may be approved by Health Physics for use and possession of licensed material. Please clarify whether the NIST grounds refers to both the campus and the annex.

10 CFR 70.22(a)(2) requires licensees to describe the activity for which a SNM license is requested and the place at which the activity is to be performed.