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NOV 15 1983

General Electric Co.
ATTN: A. M. Zielinski
Environmental Control
Operation #1350
Lighting Research and Technical Services
Operation
Nela Park
Cleveland, OH 44112

Gentlemen:

We have completed a preliminary review of your renewal request for License Number SMB-191 contained in letter dated May 9, 1983 with attached application. In order to complete our review, it will be necessary to respond to the following:

1) Submit a description of the duties and responsibilities of your radiation protection officer, Mr. A. L. Kaplan, under your license. The typical duties of a radiation protection officer would be:

   a. To ensure that the use of radioactive material is by or under the direct supervision of individuals specifically listed on your license.

   b. To ensure that all users (where appropriate) wear personnel monitoring equipment when using radioactive materials.

   c. To ensure that radioactive materials are properly secured against unauthorized removal at all times when not in use.

   d. To perform routine inspections of all laboratories using or storing radioactive materials.

   e. To ensure that the terms and conditions of your license are met, and that all required records are maintained.

In addition, please list the criteria you use to assure that supervisory individuals who are responsible for the radiation safety programs at your multiple sites of use will have sufficient training and experience to adequately carry out their duties. If part of this training and experience is gained through an on-the-job training program, please submit outline of this program and include the name and qualifications of the instructor(s) as well as your method of insuring the training objectives have been met. Training should be sufficient to cover those items listed in Item 10 of Regulatory Guide 10.4 (enclosed).

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2) Please describe what methods you will use to assure that the licensed activities at your multiple sites of use will be conducted in accordance with the conditions of your license. Such measures as management audits of the routine safety program, site visits, documentation reviews and/or periodic reviews of radiation safety procedures with your supervisory staff should be considered.

3) There appears to be at least five sites of use where the potential for airborne hazards and/or spread of contamination exists. Typically, such sites have available to them a portable survey instrument for assessing these hazards on both a routine and an "as-needed" basis. The list of instrumentation in your application does not appear to be sufficient in number to meet this intent. Please, either supplement your instrumentation list to provide for a suitable instrument at each site with a potential airborne and/or contamination hazard or explain how this intent can be met using the instrumentation you currently possess.

4) Please state the frequency of calibration of your portable survey instruments. Daily or other frequent checks of survey instruments should be supplemented every six months with a full calibration.

5) Personnel monitoring is required if a person is likely to receive in a calendar quarter 313 millirems to the body, 4.69 rems to the extremities, or 1.88 rems to the skin (lower limits apply to those under 18 years of age; see Section 20.101 and 20.202 of 10 CFR Part 20.). If personnel monitoring equipment will be used, the name of the organization furnishing film badge or thermoluminescent dosimeter (TLD) service and the frequency for changing badges, dosimeters, etc., should be specified. If pocket chambers or pocket dosimeters will be used, the useful range of the device, in milliroentgens, the frequency of reading, and the procedures for maintaining and calibrating the devices should be specified.

   If personnel monitoring will not be used, you should submit calculations or documentation from radiation surveys that demonstrate that is is unlikely that any individual will receive a dose equal to or greater than that indicated in the preceding paragraph.

6) Describe the criteria, procedures, frequencies and equipment for performing bioassays. If a commercial bioassay service is to be used, provide the name and address of the firm. Bioassays may be required when individuals work with thorium or uranium in a dispersable form (depending on the chemical and physical form or procedures and equipment used.) Bioassays may also be required if the procedures and equipment used make it likely that radioactive material will be ingested, inhaled, or absorbed into the body. You should show that the need for bioassays has been thoroughly considered and that the proposed bioassay program is appropriate for the intended use of radioactive material. Enclosed for guidance in this area is a copy of Regulatory Guide 8.11, "Applications of Bioassay for Uranium". This guide specifically deals with depleted, natural and enriched uranium; however, some of the methods and concepts are applicable to thorium.

7) Please describe your routine survey program in greater detail.

The survey program for evaluation of alpha contamination of personnel and plant surfaces should include provisions for monitoring protective clothing, hands, and feet of workers leaving restricted areas before breaks and at the end of shifts. Surveys of gloves and other protective clothing, equipment, or tools required during processing should be described.

Please describe the survey program associated with cleanup efforts where dust or loose materials may be involved. Reasonable efforts should be made to remove all residual contamination.

Surface contamination evaluation should include unrestricted areas such as lunch rooms, offices, etc. Acceptable limits of fixed and removable contamination for all facilities and equipment should be established and submitted. Please state the frequency at which these surveys will be performed.

8) Please state the limits you consider acceptable for fixed and removable contamination for facilities and equipment to be released for unrestricted use as well as for restricted areas. For example, if, after reasonable efforts to remove all residual contamination, maximum alpha readings are 3,000 dpm/100 cm^2 or less and the average is 1,000 dpm/100 cm^2, unrestricted use is permissible provided that removable alpha contamination does not exceed 200 dpm/100 cm^2. These guidelines apply to natural thorium. For natural and depleted uranium, the levels may be a factor of 5 higher.

9) Please describe your air sampling program for restricted areas in greater detail and specify the areas where samples will be taken, the frequency of sampling, and appropriate spatial relationship between sampling locations and workers' breathing zones. The type (gross alpha, fluorimetric, etc.), and sensitivity of assays that will be performed to evaluate air samples and method to convert results to actual personnel exposure should be described. If air sampling instruments will not be returned to the manufacturer for calibration, the methods, frequency, and standards used for calibration should be specified.

10) Please describe your effluent monitoring program for airborne releases. This should be sufficient to confirm compliance with 10 CFR 20.106. If airborne releases are not routinely monitored, you should submit calculations or documentation from initial surveys which confirm compliance with 10 CFR 20.106. If routine air surveys are performed, please describe the type and frequency of evaluations as well as the instrumentation used and methods of calibration of these instruments.

11) Please confirm that flow rates of hoods and local exhausts used to control airborne contamination will be verified at least semi-annually.

12) Please describe your provisions for keeping and reviewing records of surveys, material inventories, personnel exposures (including bioassay results) and receipt, use and disposal of materials.

13) Describe your procedures for ordering radioactive materials, for receipt of materials and for notification of responsible persons upon receipt of radioactive materials. These procedures should be adequate to ensure that possession limits are not exceeded, that radioactive materials are secured against unauthorized removal at all times, and that radiation levels in unrestricted areas do not exceed the limits specified in Section 20.105 of 10 CFR Part 20.

14) Please describe your procedures for examining incoming packages of source material. Section 20.205, 10 CFR Part 20, requires monitoring of certain packages upon receipt depending on the quantity of contained material and its form. Monitoring of external package surfaces for contamination is required upon receipt of packages containing more than 1 millicurie of source materials (greater than 3.3 pounds of natural uranium). If removable contamination in excess of 0.01 microcuries/100 cm^2 is found on the external surfaces of the package, notification of the shipper and the Commission is required by Section 20.205, 10 CFR Part 20.

15) Ancillary personnel (clerical, housekeeping, security, etc.) whose duties may require them to work in the vicinity of radioactive material (whether escorted or not) need to be informed about radiation hazards and appropriate precautions. Outline your method to assure that these employees receive the necessary instructions. Confirm that this instruction will be given both initially and annually thereafter on a refresher basis.

16) Radiation workers must receive instruction as specified in 10 CFR 19.12 (enclosed). Note than many of these items pertain to circumstances at your particular institution; therefore, you may not assume that this instruction has been adequately covered by prior occupational training, etc. Please outline and submit your program for providing the necessary instruction. Confirm that this instruction will be given both initially and annually thereafter on a refresher basis.

17) Please be advised that disposal of scrape source material "without regard to its radioactivity" (Item 11 of your application) is <u>not</u> an acceptable means of disposal of material licensed by the NRC. This was brought to your attention in our letter dated September 27, 1982 from Earl G. Wright; Material Certification and Procedures Branch. Your alternatives for waste disposal are listed in 10 CFR 20.301 through 20.311.

17) Please submit the functions and controls of your Radioisotope Committee. This committee should be composed of such persons as a radiological safety officer, a representative of management, and other persons trained and experienced in the safe use of radioactive materials. One of the main functions of the radiation safety committee is to administer the institution's radioactive material program. The committee should have the authority and responsiblity for approval and disapproval of all proposals for radionuclide use prior to purchase of the materials.

The following information concerning the committee should be submitted.

a. A list of the members of the committee.

b. A description of each member's training and experience with radiation and radioactive material.

c. A specific and detailed desciption of the control functions of the committee and the administrative procedures by which these functions are carried out, including the following:

(1) Responsibilities, duties and authority of the committee.

(2) Frequency at which the full committee (or quorum) meets to discuss and act on proposals for the use of radionuclides. If less than the full committee is empowered to act for the committee, the number of members constituting a quorum as well as their names or fields of expertise should be specified.

(3) Procedures and criteria established for making safety evaulations of proposed uses of radioactive material. The procedures and criteria should include consideration of the adequacy of facilities and equipment; operating, handling and emergency procedures and the experience and training of the proposed users of the material.

(4) Procedures used for controlling and maintaining inventories, procurement of radioactive material, individual possession limits, total possession limit, transfer of radioactive material within the institution, and transfer of radioactive material to persons outside the institution.

(5) Methods employed for maintaining records of the committee's procedures and safety evaluations of proposed uses of radioactive material.

(6) Periodic review of the safety program, including review of records required to be maintained.

We will continue our review of your application upon receipt of this information. Please reply in duplicate, within 30 days, and refer to Control Number 07945. If you do not reply within 30 days, we will consider that you have abandoned your application. This could result in the termination of your license. Such action would require that you divest yourself of all licensed material and notification of our Inspection and Enforcement staff.

If you have any questions or require clarification on any of the information stated above, you may contact us at (312) 790-5625.

Sincerely,

William J. Adam, Ph.D.
Materials Licensing Section

Encl: Reg. Guides 8.11 and 10.4
Parts 19 and 20

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Adam/bm Mallett
09/23/83