II. Radiation Program Administrative Procedures

In all operations involving sources of ionizing radiation (such as radioisotopes, X-ray machines, electron microscopes, etc.) the written approval of the NCI-Frederick RSC must be obtained prior to the procurement, receipt, installation, operation, or use of such sources. **There are no exceptions to this policy.** A program or project using approved sources of ionizing radiation is hereafter referred to as a *radiation program*.

A. Application Procedure for a Radiation Program

All operations involving sources of ionizing radiation at NCI-Frederick must be performed under an approved radiation program. The proposed Radiation Program PI shall submit for approval a Radiation Program Application to the NCI-Frederick RSC, through the NCI-Frederick RSO. The application contains:

1. **Radiation Program Application Form:** Program application forms for various types of programs can be accessed at the following address:

   http://home.ncifcrf.gov/ehs/ehs.asp?id=35

   It is suggested that the RSO be consulted for comments and suggestions concerning the application prior to the final preparation of the document. The application form contains such information as:

   a. The name of the project wishing to procure radioisotopes or other ionizing radiation–producing sources/machines.

   b. The radioisotope(s), the chemical and physical forms, and the amount of activity (in µCi) to be used during each experiment, as well as the total amount of activity (inventory) of each isotope to be maintained under the program. If other sources of ionizing radiation are to be used (X-ray machines, electron microscopes, etc.), specific information concerning these sources must be include on the appropriate application form.

   c. The location, by building and room number or area, in which the radiation operations are to be performed.

   d. A complete list of radiation monitoring and other equipment available for the proposed program, including protective equipment available in authorized use areas.

   e. The radiation safety precautions to be used.

   f. A description of proposed waste storage space and handling methods.

g. The signature of the PI assuming responsibility over all radiation workers and sources of ionizing radiation within the proposed program.

2. PIs and radiation workers must have appropriate training and experience in the use of the proposed radioactive materials and/or other sources of ionizing radiation. The RSC will evaluate their training and experience relative to the isotopes and possession limits requested in the application for a radiation program. New **Training and Experience Forms (T&E Forms**) for all personnel must be provided in the application packet. T&E Forms for various types of radiation programs can be accessed at the following address:

   http://home.ncifcrf.gov/ehs/ehs.asp?id=35

   The proposed PI must sign all T&E Forms. It is highly recommended that the proposed PI list **all** prior training and experience with radioactive materials (as well as other sources of ionizing radiation) on his/her T&E Form. Approval of a proposed program is highly contingent upon the prior training and experience of the proposed PI.

3. All proposed radiation workers (including the proposed PI) must complete **Radiation Safety Training for New Users**. This training is located at the following address:

   http://home.ncifcrf.gov/ehs/ehs.asp?id=56

   For more information see section III: B: 2 Training. In addition to the above-mentioned training, some equipment-specific training may be necessary (for example, for irradiators, X-ray generators, etc.).

4. Include all radiation protocols associated with the proposed radiation program.

5. It is strongly suggested that the program, for future reference and radiation program renewals, keep a copy of the application on file.

6. The application is to be submitted to the RSO. After review, the RSO will forward the application to the RSC for approval.

7. Prior to RSC review of a Radiation Program Application, the RSO ensures that the facilities and equipment to be used are adequate for the safe use of the radiation sources listed in the application. This inspection may involve a check on ventilation systems, filters, hoods, survey instruments, waste storage techniques, flooring, bench surfaces, shielding, security, handling tools, and safety equipment. The Radiation Safety Office approves the equipment and facilities prior to RSC review and approval of the proposed radiation program.

8. The radiation program will be approved on the basis of the application and the available equipment and facilities, as well as the radiation experience of the proposed operating personnel and responsible investigator.

9. An NCI-Frederick *radiation program number* will be assigned to the program upon approval of the application. **Radiation operations shall not begin until the proposed program has been returned to the requester with an endorsement granting approval for the program.**

10. Any future change in radiation parameters must be approved in writing prior to initiation. These changes include such things as changes in isotopes, increases in activity levels, and substantial changes in protocol design.