

### 1. Purpose and Scope

A researcher or faculty member who would like to conduct research or other work activity that involves the use of an X-Ray generating device must first become an authorized user under the Kennesaw State University (KSU) Radiation Safety Program. A prospective authorized user must submit a completed **X-Ray Generating Device Use Application** and obtain approval through the KSU Radiation Safety Committee (RSC).

### 2. Applicable Rules and Regulations

Rule [111-8-90](#), State of Georgia Rules and Regulations for X-Ray, requires that KSU, as an educational and research institution establish administrative procedures to assure the following:

- Registration of all X-ray generating devices being used at KSU with the Georgia Department of Community Health, since operating such a device in Georgia is prohibited unless the user is registered with this Department
- Safe use of X-ray generating devices in accordance with Rule 111-8-90.
- Assessment of the proposed uses of X-ray generating devices to ensure that all required controls are in place, including proper facilities, adequate shielding/attenuating materials (if required), appropriate training of personnel, and safe operating procedures.
- Review and approval of the assessments by the RSC

The [KSU Radiation Safety Program](#) was written in accordance with Rule [391-3-17](#) and Rule [111-8-90](#). It highlights the requirements and provides guidance on the safe use of X-ray generating devices.

These documents should be reviewed and understood by prospective authorized users prior to applying to become an authorized user of X-Ray producing equipment.

### 3. Application Instructions

The RSC provides oversight for the KSU Radiation Safety Program, and all operation of X-ray equipment that takes place in facilities owned, operated, or controlled by KSU. Prospective authorized users must apply for authorized user status by submitting an X-Ray Generating Device Use Application. The proposed use of the equipment must be included in the application and submitted to the Radiation Safety Officer (RSO) and the RSC for review and approval before implementation. If the proposed use of X-ray equipment will involve the purchase, installation and use of new X-ray equipment, the applicant must first obtain EHS and RSC approval prior to purchasing the equipment. The application for authorized use must be completed with the following information with as much detail as possible.

1. Application type (e.g., new application, renewal, amendment, etc.).
2. Application date.
3. The applicant's name, academic degree, department, office building and room number, and contact information (i.e., phone, email, etc.).

4. A list of all proposed authorized users, their job title, applicable training, and the number of years of relevant experience.
5. The applicant's formal training (including radiation safety training) and location of training.
6. The laboratory/operation specific training that will be provided to operators of the equipment.

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***NOTE: Everyone who plans to use X-ray generating devices needs to complete X-ray safety training at KSU regardless of prior experience or completion of training at another institution or establishment.***

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7. Information and technical specifications about the X-ray device that is proposed for use.
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***NOTE: Prior to the purchase and installation of any radiation producing equipment, please complete the Equipment Purchase Safety and Facilities Review Request Form and submit to ehs@kennesaw.edu. EHS will conduct a hazard assessment to determine any required control measures for installation and operation of the equipment. The request will then be reviewed by the Radiation Safety Committee to authorize the use of the equipment and room.***

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The proposed use of the equipment, including the title of the project, description of its use, and the goals of the project.

8. The proposed location for the installation of the X-ray equipment.
9. A description of how the equipment will be secured from unauthorized use (e.g., restricted access, removal of key, computer password, etc.)
10. A description of any safety precautions for the equipment, such as required shielding or default safety mechanisms in the design of the device.
11. A detailed standard operating procedure for the device, which will include information such as powering the device, sample preparation, loading/unloading the device.
12. A description of emergency procedures that must be followed in the event the machine malfunctions or is found to be leaking.
13. List any available radiation survey equipment, and include the manufacturer, model and serial numbers, last date of calibration, and probe type.
14. An equipment use log must be kept, keeping track of the use of the equipment, and must include the name of the operator, date of use, starting time, ending time, the maximum voltage, and the maximum current. Verify how this information will be maintained (e.g., paper logbook, central server, computer file on the computer connected to the device, etc.)

## **A. Approval Process**

After the candidate has completed and submitted his/her application to become an authorized user, a preliminary review will be conducted by the RSO. The Radiation Safety Officer (RSO) will:

- Review the application submitted by the candidate.
- Conduct a walkthrough and inspection of proposed areas where the researcher plans to install and use the equipment.
- Determine whether there are any shielding requirements for the space and what they are.

- Ensure that any researchers and/or other personnel who share the proposed laboratory spaces are aware of the use of x-ray producing equipment in the laboratory and ensure that they have completed radiation safety awareness training.

When the RSO has completed the preliminary review, the application will be reviewed by the RSC at the next committee meeting.

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***NOTE: Please allow 2-4 weeks after RSC review for notification of the RSCs final decision.***

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The candidate will be notified of the RSC's decision in writing to either approve or decline the application.

Approvals will grant the authorized user a permit for a period not to exceed five (5) years, and will include the following (not limited to):

- Authorization number
- Approval date and renewal date
- Approved device
- Approved location for device installation and use
- Approved end-users
- The terms and conditions of use

When the application is approved, EHS will coordinate the registration of the X-ray device with the Georgia Department of Community Health, site inspection, and the proper installation of the equipment, including any required shielding.

When the equipment has been installed, the authorized user may then begin use of the X-ray device in accordance with the [Radiation Safety Program](#), and the [Georgia Rules and Regulations for X-Ray](#).

If an application is declined, the candidate will be informed of what corrective steps need to be taken to obtain approval.

#### **4. Revisions to Permits**

Revisions to X-ray device use permits may be made at any time during the approved period. Revisions to the permit can be made by resubmitting the X-Ray Generating Device Use Application form as an amendment. The requested amendment will be reviewed by the RSO. If the RSO determines that the proposed revision does not involve any significant changes from the initial safety assessment and is within the scope of the initial authorization, the amendment form will be forwarded to the RSC for review with recommendation for approval.

However, if a proposed revision involves significant changes such as with experimental procedure or relocation of the X-ray device, the authorized user will be required to resubmit a full application to include the proposed changes followed by full RSC review.

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***Note: X-ray devices may not be relocated without first being approved by the RSO and the RSC. Relocating an X-ray device will require a new hazard assessment and site inspection.***

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## 5. Renewal of Permits

X-Ray device use permits will be renewed every five (5) years from their initial authorization dates to ensure that all approved use remains current. For the renewal process, authorized users should review their initial application to identify any planned significant changes in radioactive sources or experimental protocol. If no major changes in radioactive source or experimental protocol are anticipated, renewal may only require resubmitting the previous application with minor changes (e.g., staff changes, training completion dates, etc.). However, in cases where significant changes such as in experimental protocol or relocation of the X-ray device is anticipated, a new application must be submitted, followed by a new hazard assessment, site inspection, and full RSC review.

Authorized users will be sent a written reminder to renew their permit 90 days prior to its expiration. The RSO will review the renewal application and submit comments, concerns, and records of any violations that were identified under the previous permit to the RSC. The RSC will review the application, identify any safety concerns, and approve or decline the renewal based on the review.

## 6. Penalties

Any individual found to be operating x-ray equipment without a permit, without having completed appropriate training, or in violation of any other requirements prescribed by the Radiation Safety Program, Rule 391-3-17, [or Rule 111-8-90](#) will be subject to penalties including (but not limited to) loss of permit, revocation of access to the facility, or any other penalties highlighted in [111-8-90-.08 \(Penalties\)](#).