# Harvard University RPO New X-Ray Device Fact Sheet

This document outlines the procedures and requirements for the registration and safe use of new x-ray devices at Harvard University. Accompanying reference documentation links are provided below.

**Please note a 30 day notice is required by the Harvard Radiation Protection Office (RPO) for any x-ray device to be brought into the Commonwealth of Massachusetts (MA). Contacting the RPO as soon as possible regarding the intent to purchase or import an x-ray device will help to ensure MA requirements are satisfied prior to the arrival of the x-ray device.**

For additional questions or assistance please contact <radiation_protection@harvard.edu>.

# Obtain an X-Ray Permit and MA Registration

Any purchase, use, or work undertaken with x-ray generating devices requires an X-Ray Permit authorized by the Radiation Safety Committee (RSC). Prior to starting work, the x-ray research lab must designate a Permit Holder responsible for the device and submit the X-Ray Permit Application, which includes information on Permit Holder contact information, device specification, and intent of work. The X-Ray Permit Application is provided on the EHS website.



Following the approval of a permit, the RPO will submit a formal registration of the x-ray device(s) allowed by the permit to the Commonwealth of Massachusetts, and may ask for additional information at that time.

# Schedule an Initial Workspace Evaluation

The RPO will classify the equipment at the time of permitting to determine the regulatory and safety requirements. A Health Physicist will evaluate the intended workspace to ensure that adequate engineering and administrative controls are in place to protect laboratory workers and the general public from radiation hazards.

In conjunction with the workspace evaluation, please follow the guidelines for setting up a safe work environment for x-rays found in the X-Ray Safety Policies and Procedures document (<http://ehs.harvard.edu/sites/ehs.harvard.edu/files/xray_safety_policies_procedures_0.pdf>). These requirements include proper training, dosimetry, signs and warnings, equipment labels and indicators, interlocks, and emergency procedures. Guidelines based on equipment type are also provided in the Additional Information section below.

# Complete Safety Training and Dosimetry

All x-ray device users must complete the RPO101 Radiation Safety Training online course before using the equipment. Device users should contact their lab’s Safety Officer/Coordinator to have the x-ray safety training requirement added to their individual training profile in the Training Management System ([www.ehs.harvard.edu/training](http://www.ehs.harvard.edu/training)). If dosimetry has been recommended by the Health Physicist, device users should contact the RPO Help Desk to register for a dosimeter following the completion of their training.

# Schedule an Initial X-Ray Survey

After MA approval to turn on the x-ray machine has been given, the Health Physicist will conduct an initial x-ray survey of the intended workspace to measure dose rates and calculate total potential exposure to lab users. Radiation exposure will be limited to 100 mrem per year and 2 mrem per hour during x-ray use. Additional modifications to usage time, distance, and shielding may be made as a result of the survey if these limits are not met. A finalized standard operating procedure (SOP) detailing the instructions for safe use of the device will be developed that must be acknowledged and available to all x-ray device users. Following completion of the survey and any remaining adjustments to the workspace and SOP, the lab will be approved to begin x-ray work.

# Additional Information

X-Ray Safety Policies and Procedures <http://ehs.harvard.edu/sites/ehs.harvard.edu/files/xray_safety_policies_procedures_0.pdf>

X-Ray Diffraction/Fluorescence General Safety Checklist <http://ehs.harvard.edu/sites/ehs.harvard.edu/files/xray_diffraction_fluorescence_general_safety_checklist.pdf>

X-Ray Cabinet General Safety Checklist <http://ehs.harvard.edu/sites/ehs.harvard.edu/files/xray_cabinet_general_safety_checklist.pdf>

Electron Microscope General Safety Checklist <http://ehs.harvard.edu/sites/ehs.harvard.edu/files/electron_microscope_general_safety_checklist.pdf>