



RADIATION NOTES



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ANALYTICAL X-RAY USERS

PLEASE POST

Analytical X-Ray Users Have “Near Miss” With Primary Beam:

Two x-ray users were working on a unit with two ports (one port was operational and one was out of use). One researcher was demonstrating the operation of the “Hall Effect” device that controls the opening and closing of the shutter mechanism. This demonstration was on the non-operational port and they did not view this demonstration as being any more hazardous than a sample exchange. The shutter of this non-operational port was accidentally opened when one researcher manually moved the magnet over the sensor. The x-ray unit was *not* powered down and was operating at normal mA and kVp settings. The safety enclosure to the x-ray unit was open and the shutter open light was disconnected. With these two safety mechanisms in place (each of these prevent the shutter from opening) the workers believed the shutter device could not be opened. They failed to recognize the manner in which these two interlock devices prevent the shutter from opening. Essentially, they prevent the sending of an electronic signal that moves the magnet over the sensor. By moving the magnet manually, these safety interlocks were useless. To their credit, they immediately notified REHS when they realized what happened. Fortunately, it was determined that both workers avoided exposure to the primary x-ray beam near the port opening. That being the case, conditions existed that easily could have led to a significant exposure. **Please realize:** Non-operational ports should be covered with lead tape to prevent the accidental emergence of the primary beam. A hand, finger or wrist in the primary beam (near the port opening) for only one second may cause a significant skin exposure. Do not rely on safety mechanisms (interlocks) alone and always follow lab specific standard operating procedures. Wear your dosimeters when working with x-ray devices and when in doubt, don't take a chance and power down the unit.

REHS wants to insure the University community is following strict standard operating procedures (SOPs) while performing procedures *other* than sample change-outs. When performing any procedures other than sample change-out or pre-approved beam alignments, the unit must **ALWAYS** be powered down. **During bi-annual inspections in October, REHS will ask for a written copy of your SOPs, including beam alignment (if your lab performs its own alignments) and any other procedures that are not sample change outs. Please feel free to forward these to Debbie Hrabinski at the above address prior to your October inspection.**

X-RAY TRAINING

As most of you already know, x-ray users should not be operating the units without first taking the online x-ray training (available from the Training link of our web page) and applying for a dosimeter. Once a person successfully completes the x-ray training quiz, they will automatically be routed to the online badge application.

ACTION REQUEST FORM

Recently REHS distributed a copy of the new Action Request Form. If you obtain a new radiation producing machine, or plan to dispose of a unit, please fill out this form (which is also available on our web site) **before** the acquisition or disposition date. Contact Debbie Hrabinski by phone at 445-2550 or at dhrabinski@rehs.rutgers.edu for details.