TITLE:	**Floor Coordinator Preparations for Shielding Verifications**
***CATEGORY*:**	**Operations**
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ABSTRACT:

The following is intended to be a **guide** for the planning and execution of shielding verification exercises. Unique circumstances at a particular beam line may require additional activities.

Pre-BCRRT

- **Obtain** copies of the ray traces, station roof and profile drawings (maps), beam line drawings and any other documents that need to be distributed at the meeting.
- **Inspect** the station prior to attending the BCRRT. Get familiar with the beamline layout.
- **Notify** BCRRT Chair that the beamline personnel have requested a BCRRT for shielding verification – The Chair will make the arrangements. Plan to attend the meeting.

BCRRT

- **Familiarize** yourself with all issues being discussed. Ask questions when you are not clear about something. Pay particular attention to the status and location of masks, collimators, etc. (Radiation Safety System components).
- **Learn** what the schedule is. How soon after the BCRRT is shielding verification planned?
- **Ask** about the bremsstrahlung beam stop—who will provide it? Beamline personnel, or the CCSM. If the CCSM builds it, you will have to provide all lead, unistrut (cut exactly to length), and all other hardware needed for the construction including a good drawing (ray traces) showing the dimensions, elevation and construction of the stop.
  Note: It would be best to know beforehand the status/location of the two existing steel tables purchased for beam stop use. They are often used as loaners when needed. If other groups are not successful in providing a beam stop, use the loaner table with lead bricks.
- **Find out** what the verification plan is - how many targets, and where will they be placed? What survey sequence is to be followed? Will a transfer pipe be back-filled with nitrogen to provide scattered beam? If so, who will provide the nitrogen, the regulator and fittings?

Post-BCRRT

- **Compile** the list of Radiation Safety System components. Have the beamline personnel review the list with you and then complete the CCCL by obtaining the appropriate signatures. Check the list for consistency with the APS Assigned Health Physicist and Critical Component System Manager.
- **Remind** the APS Assigned Health Physicist that a CAA form is needed for posting in the beam line cabinet
- **Post** the Bremsstrahlung and sychrotron ray trace drawings.
- **Collect** the tools needed for the verification exercise—plumb bob, machine square, marker pens, measuring tape.
- **Check** to see that there is a beam line “snapped” or scribed on the station floor. This is needed to properly place the beam stop and for accurately placing targets and flight paths on the beam line. Do not snap the line yourself—get the beamline personnel to do it or have the Survey & Alignment group do it.

- **Look** for beam elevation survey stickers on the walls at various locations. If they are not there, it might be wise to have Survey & Alignment install such markers.
- **Supervise** the beam stop installation. Verify the position, physical dimensions and placement with respect to the ray traces. Establish marks on the face that show the maximum extent vertical and horizontal of the bremsstrahlung.
- **Tag** the beam stop in accordance with the Radiation Safety System policy; determine whether or not an aluminum plate is needed in front of the lead.
- **Determine** the need for a cooled white beam stop to be placed upstream from the beam stop (ID beamlines).
- **Verify** that chilled water will be provided for all components (copper beam stops, masks, etc.) that need it - sometimes two chillers are needed.
- **Verify** that flight tubes, ozone monitor, ozone destruct unit (if required) and hutch ventilation are installed as needed, and that the targets are positioned as needed.
- **Determine** suitable tie-off locations for roof access.

Pre-Shielding Verification Inspection

- **Perform** the Shielding Verification Process Checklist – inspect the station with respect to the configuration control items. Make sure everything that is to be labeled is so and check all labyrinths.
- **Check** the PSS status—try to search and secure the stations. This exercise can reveal problems (compressed air not available for pneumatics, search path or sequence may be unusual, etc.).
- **Close out** all Configuration Control Work Permits. See that all PSS, Alignment, APS Assigned Health Physicist, CCSM signatures are present if needed.
- **Check** beam line cabinet for the following:
  (1) CAA form
  (2) CCCL
  (3) Bremsstrahlung ray trace drawings
  (4) The presence of any open Configuration Control Work Permits or Administrative Restrictions.
- **Check** to see the station has been put Globally Online.
- **Verify** that the PSS is ready—email confirmation from a PSS System manager. ASK SPECIFICALLY ABOUT THE TRIP TESTS—HAVE THEY BEEN PERFORMED?
- **Verify** that a diamond window has been placed on the beryllium window assembly if required.
- **Verify** that helium gas cylinder, regulator and hoses are attached to the diamond window assembly, and that helium is actually flowing.
- **Have** User Keys available; close the gap to the pre-determined value for an ID beamline.
- **Check** the BPM screen to see the beam's location for the particular beamline.
- **Communicate** often with the validation team members, especially with Health Physics and the Commissioning Team Leader. Make sure there is agreement regarding schedule, what is to be done, etc. Make the appropriate notifications if plans are changed.
- **Have** the Beam Line Operational Status forms ready for the APS Assigned Health Physicist to complete upon the conclusion of the measurements; this form is to be immediately posted in the beam line cabinet.

Post Validation Tasks

- **Remove** the APS enable as necessary; return the User Keys to the FC lock box.
- **Post** the Beam Line Operational Status Report form.
- **Assist** with the break down and removal of commissioning equipment, if necessary.