

9.1.14 Procedure for Establishing NMC Response in a Beam Line

1. Purpose

To provide instructions for Liaison Physicists (LP) and Radiological Control Technicians (RCT) for establishing the NMC response as a function of particle beam intensity in a beam line prior to setting the operating limit. For NMC units in which the alert limit is used to set a lower operating limit, then the response of the alert level must be established. In this case replace the word alarm level with alert level in the procedure.

2. Responsibilities

2.1 The [Liaison Physicist](#) is responsible for ensuring a stable beam of known intensity is available.

2.2 The Radiological Control Technician (RCT) is responsible for determining the alarm setting for a particular particle intensity.

3. Prerequisites

3.1 There must exist an associated beam line check-off list.

3.2 This procedure requires a [Liaison Physicist](#) and a RCT.

4. Precautions

Area surveys should be conducted prior to this procedure to ensure that this procedure does not produce unnecessary dose or risk to areas that can be occupied by personnel.

5. Procedures

5.1 The Liaison Physicist will ensure that a stable beam condition has been established.

5.2 The [Liaison Physicist](#) will establish a beam intensity of approximately 1/10 of the intended operating limit stated on the associated beam line check-off list.

5.3 The [Liaison Physicist](#) will record the particle intensity and alarm level.

5.4 Repeat steps 1 and 3 until a factor of 10 times (if possible) the operating limit stated on the associated beam line check-off list is reached with a minimum of two intensity points per decade.

5.5 Plot the data.

- 5.6 The response curve should allow for the trip limit to be set with an accuracy of 50% of the designated operating limit.
- 5.7 Attach the data and the plot to the associated beam line check-off list.
- 5.8 Exception to this procedure must be approved by the [Liaison Physicist](#), an RCT and the C-A Radiation Safety Committee (RSC) Chairman, or designee.

6. Documentation

Data and plot attached to associated beam line check-off list.

7. References

None

8. Attachments

None