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Radiation Safety Memo

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Subject: Dose rates outside the LARIAT-1 and μ CAL experimental stations

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The memo reports the dose rates when the zero-order beam from the PGM of SST-1 beamline is utilized in the LARIAT-1 and μ CAL experimental stations. The calculations are carried out with the STAC8 code [1] and the technique is described in detail in the Tech Note [2]. The white beam from EPU60 is reflected by mirrors M1 (at 1.3°), M2 and grating (both at 1.0°), and M3 and M4 (both at 0.5°). For the beam to enter the LARIAT-1 an additional reflection by the dithering mirror M5W (at 0.5°) is required.

The Titanium (12.7 mm) and the SS (3.2 mm) chamber walls [3] in LARIAT-1 are thick enough to stop the resulting beam. The scattered dose rates outside the LARIAT-1, I0_UP mesh and the μ CAL chambers are estimated to less than 0.05 mrem/h.

1. Y. Asano and N. Sasamoto, Development of Shielding Design Code for Synchrotron Radiation Beamline, *Radia. Phys. Chem.* 44 (1994) 133.
2. S. Chitra & M. Benmerrouche, 07-ID (SST) Beamline Radiation Shielding Analysis, NSLS-II Technical Note 275.
3. SST Beamline Survey & Alignment, LARIAT-1, PD-SST-BL-LAY-1070.