

Memo

Date: June 13, 2018
To: G. Lawrence Carr, Zhenxian Liu
From: Raymond Fliller, Technical Authority for Top Off Safety System
Distribution: Mo Benmerrouche, Robert Lee, Steve Moss, Timur Shaftan, Paul Zschack
Subject: Top Off Safety of FIS-MET Front End

Top Off operation introduces the hazard that the injected electrons may be mis-steered and propagate down a beamline front end, beyond the ratchet wall, and into the First Optics Enclosure. The Top Off Safety System (TOSS) and associated credited apertures are designed to ensure that this does not occur. In addition, beamlines must be analyzed to ensure that the present interlocks and shielding are sufficient when buttressed with the credited apertures.

The unique design of the FIS-MET front end, with its mirror system and ratchet wall penetration located perpendicular to and below the plane of the electron beam make the FIS-MET front end inherently safe for Top Off operation, as the injected electrons cannot propagate through this front end. There are no credited apertures required to ensure FIS-MET is safe for top off. The TOSS interlocks are not required for FIS-MET to safely operate in top off mode.

FIS-MET is inherently safe for Top Off Operation and is approved for Top Off Operation.

This memo does not address any other radiological issues that may arise with respect to the FIS-MET front end. These will be addressed in a separate document.

APPROVED



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