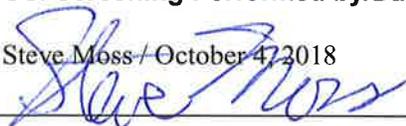
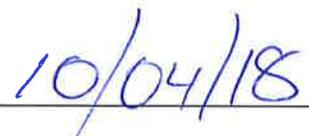


Photon Sciences Directorate, Brookhaven National Laboratory			
Doc No. NLSII-ESH-PRC-019	Author: S. Moss	Review Frequency: 3 yrs	Rev. 5
Title: Unreviewed Safety Issue Determination Procedure			Effective Date: 10NOV2017

Attachment B
USI Screening Checklist

A) USI Screening Purpose: <input checked="" type="checkbox"/> Proposed Activity <input type="checkbox"/> Existing Condition	B) Description of Proposed Activity/Discovered Condition and Sponsor/Condition Owner: Top Off Safety of FIS-MET Front End Memo R. Fliiller – Technical Authority for TOSS
C) USI Screening Outcome: <input checked="" type="checkbox"/> No potential USI <input type="checkbox"/> Potential USI	USI Screening Performed by/Date: Steve Moss / October 4, 2018  

Qualified Screener answers the following questions; if:

- Any question is answered yes (i.e., "Y"), check "Potential USI" box in Part C, above.
- If all questions are answered no (i.e., "N"), check "No potential USI" box in Part C, above.

Does the proposed change or discovered condition impact or potentially impact:

1) The personnel protection system (PPS)?

Examples: Access doors, fencing, hatches, accelerator enclosures, software change, hardware modifications that are not, "replacement-in-kind."

Y or N

2) ODH Monitoring System?

Examples: Hutch ODH monitors, filling station ODH monitors.

Y or N

3) Radiation Safety Component?

Examples: Shielding, earthen berms, hatches, concrete walls, beam shutters, scatter shields, burn-through devices, exclusion zones, labyrinths, beam stops, beam masks, collimators, hatch guillotine and beam transport pipes.

Y or N

4) Area radiation monitoring system or components?

Examples: Changing instrument position or use of a new type of instrument used for area radiation monitoring, alarms and controls.

Y or N

5) Radiological source terms identified in the SAD?

Examples: New insertion devices, change to the maximum synchrotron energy or accelerated charge values, accelerator modifications that are not "replacement-in-kind."

Y or N

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6) Critical devices

Examples: Safety shutters, dipole magnets, top-off apertures.

Y or N

7) PS operating organization?

Examples: Control room operators, support staff responsible for PPS, radiation monitoring or shielding configuration management.

Y or N

8) Operational safety limits described in the Authorization Basis Documents?

Examples: Maximum current, beam energy, pulse rate.

Y or N

Forward the completed form to the Authorization Basis Manager

Memo

Date: June 13, 2018
To: G. Lawrence Carr, Zhenxian Liu
From: Raymond Filler, 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



Raymond Filler
NSLS-II Accelerator Division,
Technical Authority for Top Off Safety System

