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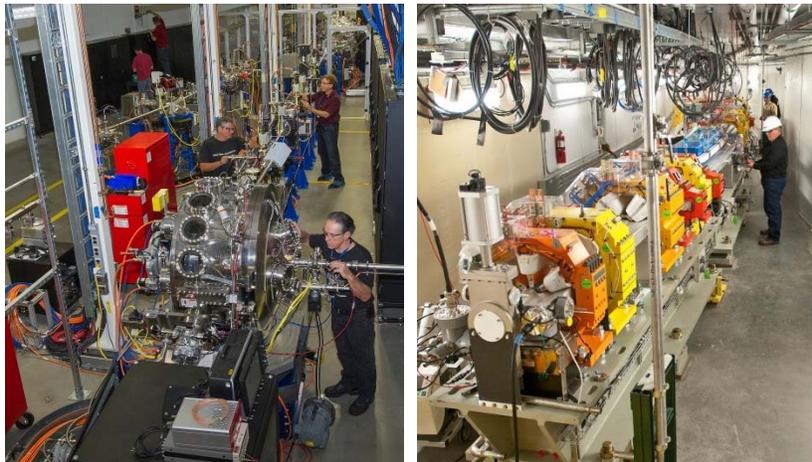
Doc No: NSLSII-ESH-PRC-032

NSLS-II PROCEDURE: BEAMLINER ENCLOSURE SEARCH AND SECURE AND BREAKING SECURITY

February 01, 2018

Rev. 3

T. McDonald



 **Think Safety. Act Safely.**

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Doc No. NSLSII-ESH-PRC-032	Author: T. McDonald	Review Frequency: 3 yrs	Rev. 3
Title: Beamline Enclosure Search and Secure and Breaking Security			Effective Date: 01FEB2018

ESH Review:

2/1/2018

X Robert Chmiel

Robert Chmiel
NSLS-II Safety Officer
Signed by: Chmiel, Robert

By signing this Procedure I acknowledge that it complies with all ESH requirements and if performed correctly, will not present a significant hazard to personnel or equipment.

Authorization Basis Review:

2/1/2018

X 

Steve Moss
Authorization Basis Manager
Signed by: Moss, Steven H

By signing this Procedure I acknowledge that a USI Screening/Evaluation has been performed and this Procedure does not adversely impact the NSLS-II Authorization Basis Documents.

Approved:

2/1/2018

X 

Robert Lee
ESH Manager
Signed by: Lee, Robert J

By approving this Procedure I agree that the appropriate personnel have reviewed this document and I authorize this work to commence as written.

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REVISION HISTORY

REVISION	SECTION(S)	PAGE #	DATE	List of Reviewers	DESCRIPTION
1	All	All	30May2014	See Cover	First Issue
1	NA	NA	02Oct2014	See Cover	MPC No. 1: Name of button in step 4.2.2 changed to reflect what is posted in the field.
1	NA	NA	30Oct2014	See Cover	MPC No. 2: Added Attachments A-D to provide the Searcher an aid when searching the following beamlines: 3-ID, 5-ID, 10-ID, and 11-ID.
2	NA	NA	01Jul2015	See Cover	Changed hutch to "enclosure" in title; added requirement for validation of beamline-specific Beamline Enclosure Search and Secure Sketch in sections 3.3, and 4.3; added prerequisite that Search and Secure Sketches shall be completed and posted in the KSR; added responsibility for the Configuration Management Specialist; added precaution that search shall be discontinued if the search path or sequence can not be followed in section 3.5; changes made to address finding F13 from the IRR for beamlines 3-ID, 5-ID, 10-ID, and 11-ID; beamline sketches made an example, attachments removed and now require posting in the KSR; re-worded section 4.1 (moved steps 4.1a and b to after step 4.1.9) -Searchers check PPS for faults if the enclosure fails to interlock. Moved steps 4.1.2 and 4.1.3 to prerequisites, now 2.3.
3	All	All	01Feb2018	A. Ackerman M. Benmerrouche M. Buckley S. Buda B. Lein E. Orr C. Porretto P. Zschack	Document number changed from PS-C-XFD-PRC-010 and format updated in accordance with NSLSII-DPT-PDN-001, <i>Management of NSLS-II Documents and Records</i> . Reviewed in accordance with the required review cycle; no changes other than reformatting required. Validation waived by the author, T. McDonald and the Conduct of Operations Manager, S. Moss.

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ACRONYMS

ESH	Environment, Safety and Health	NSLS-II	National Synchrotron Light Source II
FLOCO	Floor Coordinator	PPS	Personnel Protection System
FOE	First Optical Enclosure	SB	Search Button
HMI	Human Machine Interface	SBE	Search Button External
ID	Insertion Device		

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1 PURPOSE AND SCOPE

The purpose of this procedure is to perform a search of an NSLS-II beamline enclosure, as well as to break security of a secured beamline enclosure.

2 PREREQUISITES

- 2.1 The Searcher shall be trained and qualified to perform this search procedure.
- 2.2 A Beamline Enclosure Search and Secure Sketch has been generated for the beamline enclosure(s) and is posted in the Key Safety Records section of the NSLS-II Document and Records Center.
- 2.3 Secondary doors are closed and locked.

3 HAZARDS, CONTROLS AND LIMITS

- 3.1 Searches shall be performed without distraction (e.g., non-search related discussions, personal conversations, distractive material, emails, etc.) to ensure that an adequate search is performed.
- 3.2 Radiation levels in the beamline enclosures during beam operation constitute a "High Hazard" radiation field. All personnel shall be removed from the beamline enclosures prior to opening the beamline safety shutter(s).
- 3.3 Searching the enclosures shall be performed by only one Searcher. More than one Searcher is not permitted.
- 3.4 Personnel shall press the Emergency Stop button inside the enclosure if the "Beam Imminent" beacon/alarm is seen or heard during the performance of this procedure.
- 3.5 Searches shall be discontinued and the Lead Beamline Scientist or designee notified if the search path (including a clear line of sight using mirrors) or sequence cannot be followed in accordance with the Beamline Enclosure Search and Secure Sketch.

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4 PROCEDURE

Note: Beamline Enclosure Search and Secure Sketches are located in the Key Safety Records section of the NSLS-II Document and Records Center.

4.1 Search and Secure a Beamline Enclosure

Note: Pressing SB1 activates the “search in progress” amber beacon(s) and sounders inside the beamline enclosure.

Note: Pressing SB1 starts a countdown, within which the search shall be completed. The time of the countdown will be appropriately programmed for the size of the particular beamline enclosure being searched.

4.1.1 Searcher presses SB1.

Note: Beamline enclosures may have more than two interior search buttons (e.g., SB1, SB2, SB3).

4.1.2 Searcher performs the search AND presses all of the SBs inside the enclosure, in order.

4.1.3 Searcher uses search mirrors to check for hidden personnel.

4.1.4 Searcher exits the beamline enclosure through the primary door.

Note: When using an automated door controller, the Searcher shall maintain visual contact with the door until it is fully closed.

4.1.5 Searcher fully closes the primary door.

Note: 30 seconds after SBE is pressed, the interlock sign will illuminate.

Note: Once SBE has been pressed, the Beam Imminent alarm will sound, the magnetic door lock on the primary door engages, and the red “Beam Imminent” beacon will flash.

4.1.6 Searcher presses SBE.

4.1.7 IF the enclosure fails to interlock, THEN:

- a. Check the PPS HMI for interlock faults.

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- b. Contact the FLOCO to clear and reset any faults before proceeding.
- c. IF unable to reset faults, THEN the FLOCO contacts the Accelerator Safety Systems Staff.

4.2 Breaking Beamline Enclosure Security

- 4.2.1 User OR Authorized Beamline Staff member closes the appropriate beamline shutter(s).
- 4.2.2 User OR Authorized Beamline Staff member presses the SBE button on the beamline HMI keypad.

4.3 Periodic Validation of Beamline-specific Beamline Enclosure Search and Secure Sketches

- 4.3.1 ESH Staff validate the information contained on beamline-specific Beamline Enclosure Search and Secure Sketches during PPS certification testing.

5 REFERENCES

- 5.1 NSLSII-DPT-PDN-001, *Management of NSLS-II Documents and Records*

6 ATTACHMENTS

Attachment A, *Example Beamline Enclosure Search and Secure Sketch*

7 DOCUMENTATION

The following records are generated as a result of this procedure, and shall be maintained in accordance with NSLSII-DPT-PDN-001, *Management of NSLS-II Documents and Records*:

- Beamline Enclosure Search and Secure Sketches

8 DEFINITIONS

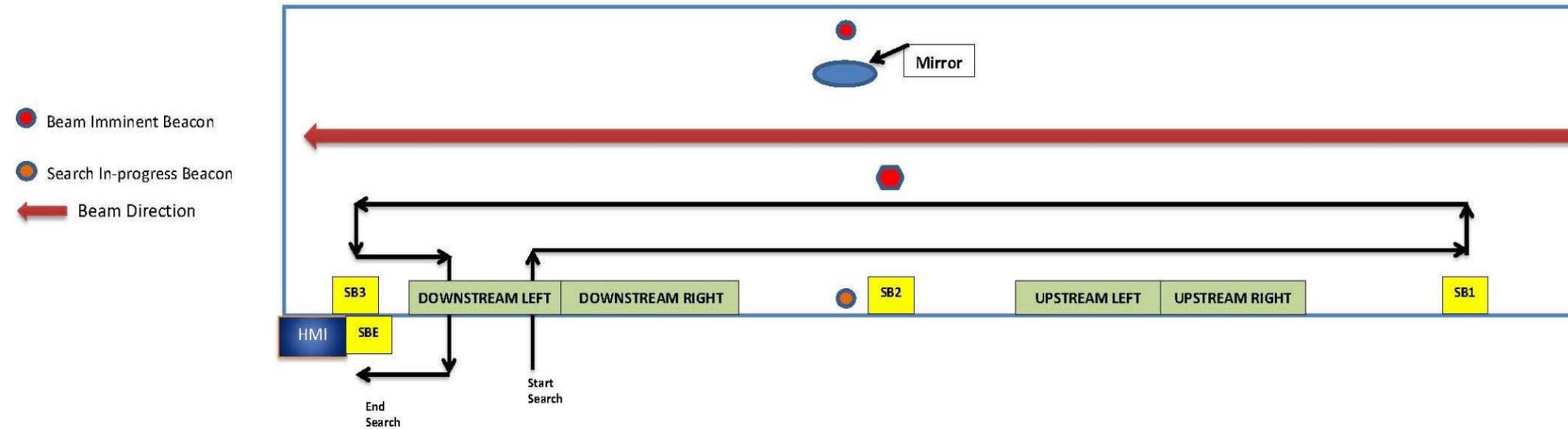
- 8.1 Searcher: A User or Authorized Beamline Staff, who searches and secures the beamline enclosure, as well as breaks security.

[If you have any questions or feedback regarding this document, please click this link.](#)

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Attachment A
Example Beamline Enclosure Search and Secure Sketch

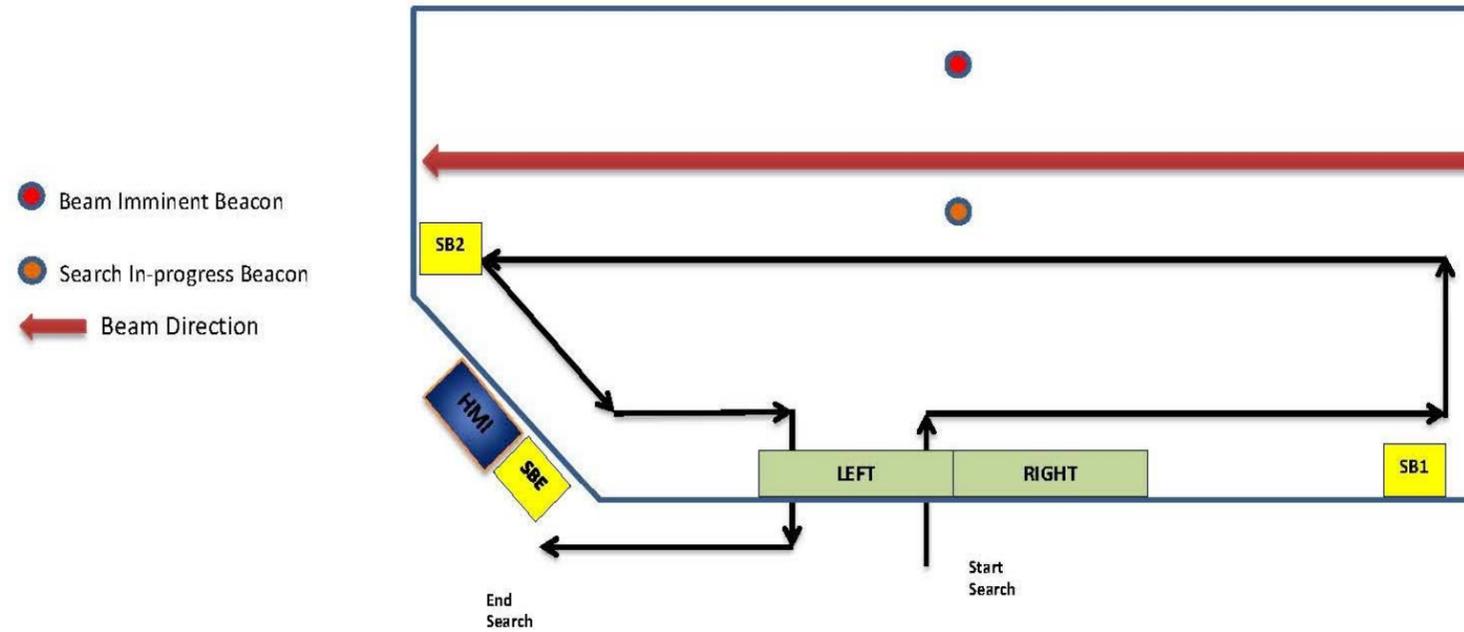
3-ID A (FOE) Beamline Enclosure Search Sequence



1. Check PPS HMI for PPS Faults and turn Door Maglocks ON (green) using HMI
2. Contact FLOCO to clear and reset any faults before starting search
 Initial Search Conditions are:
 - Door Maglocks ON (Green on Keypad)
 - Both Upstream and Downstream RIGHT Doors are Closed
 - Downstream LEFT door remains Open
 - HMI clear of any faults (No red A chain or B chain faults)
3. Confirm the enclosure is free of people before beginning the search
4. Search Sequence:
 - a. Enter enclosure through the open door and Press SB1
 - b. Stop and check mirror for personnel behind beamline components
 - c. Press SB2
 - d. Press SB3 and exit enclosure
 - e. Close the downstream LEFT door (if using automatic door closer- watch door at all times)
5. Press SBE
6. Beam Imminent warning sounds for 30 seconds
7. Hutch is now interlocked.

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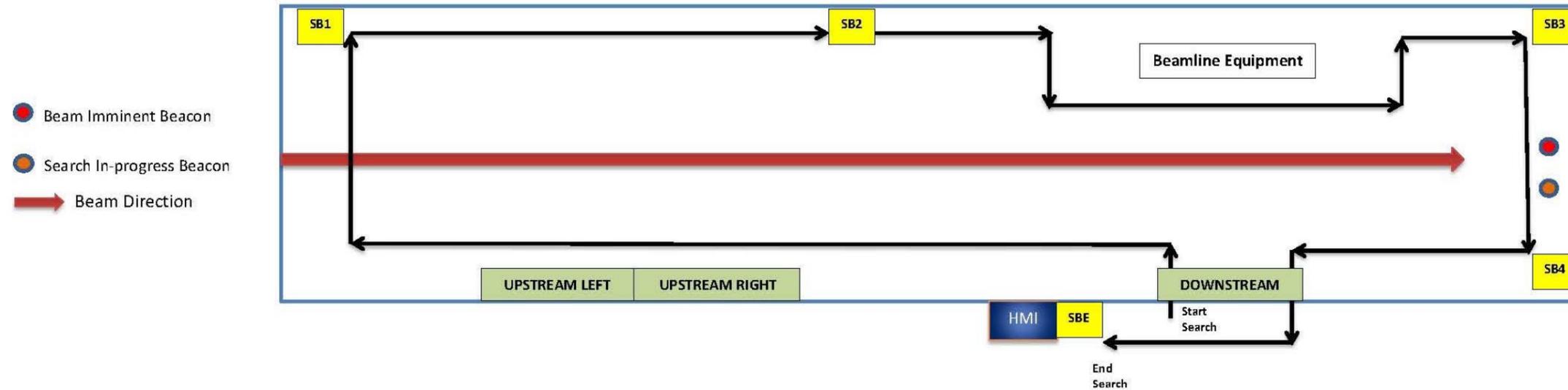
3-ID B Beamline Enclosure Search Sequence



1. Check PPS HMI for PPS Faults and turn Door Maglocks ON (green) using HMI
2. Contact FLOCO to clear and reset any faults before starting search
Initial Search Conditions are:
 - Door Maglocks ON (Green on Keypad)
 - RIGHT Doors is Closed
 - LEFT door remains Open
 - HMI clear of any faults (No red A chain or B chain faults)
3. Confirm the enclosure is free of people before beginning the search
4. Search Sequence:
 - a. Enter enclosure through the open door and Press SB1
 - b. Press SB2 and exit enclosure
 - c. Close the LEFT door (if using automatic door closer- watch door at all times)
5. Press SBE
6. Beam Imminent warning sounds for 30 seconds
7. Hutch is now interlocked.

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3-ID C Beamline Enclosure Search Sequence



1. Check PPS HMI for PPS Faults and turn Door Maglocks ON (green) using HMI
2. Contact FLOCO to clear and reset any faults before starting search
Initial Search Conditions are:
 - Door Maglocks ON (Green on Keypad)
 - Both Upstream Doors are Closed
 - Downstream door remains Open
 - HMI clear of any faults (No red A chain or B chain faults)
3. Confirm the enclosure is free of people before beginning the search
4. Search Sequence:
 - a. Enter enclosure through the open door and Press SB1
 - b. Press SB2
 - c. Check behind beamline equipment and Press SB3
 - d. Press SB4 and exit hutch
 - e. Close the Downstream door
5. Press SBE
6. Beam Imminent warning sounds for 30 seconds
7. Hutch is now interlocked.

-END-