

Memorandum

Michael Lindgre
Division Head

Accelerator Division
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Date: November 18, 2019
To: Todd Sullivan
From: Mike Lindgren 
Re: Approval for running of beam through P3 to Switchyard Absorber

Safety documentation and procedures for approval to run beam through P3 to Switchyard Absorber are now complete and in place. Therefore, you are hereby authorized to run beam through P3 to Switchyard Absorber.

cc: M. Convery
P. Czarapata
T. Kobilarcik
N. Chelidze
E. McHugh
M. Schoell

SYSTEM START-UP SIGN-OFF

The signatures below, unless noted in the comments section, indicate that the relevant systems are ready for the restart of beam operation. Indicate in the comments section any remaining work that would affect the restart of beam operations. Indicate N/A for departments that did not do any work on the system.

SYSTEM BEING SIGNED OFF: Linac NIF MTA Booster [8-GeV Line-MI-10 Region]
(Circle as Applicable) [MI-20-MI-62/Recycler] BNB NuMI P1-P2 Muon P3-Switchyard
Meson Primary MT MC NM FAST PIP-II

DEPARTMENT	DATE	SIGNATURE (Department Head/Designee)
1. Controls	10/28/19	James Patrick
2. Cryogenics		
3. E/E Support	10/23/19	[Signature]
4. RPO Manager	11/18/19	Macklyn Schell
5. LSO		
6. External Beamlines	11/18/2019	[Signature]
7. Instrumentation	10/23/2019	[Signature]
8. Interlocks	11/18/2019	Lang M. Zifko
9. Main Injector		
10. Mechanical Support	10/23/2019	W. Wong-Sing
11. Muon		
12. Operations	11/18/2019	Todd Hill
13. Proton Source		
14. RF		
15. ENG Support	10/24/19	Paul C. Gargano
16. Target Systems		
17. Shutdown Coordinator	11/5/19	[Signature]

Comments and special conditions (please mark comment with department # to connect comment with appropriate department):

The P3 to SY Absorber radiation shielding meets the requirements documented in the 2017 "P3 to Switchyard Absorber Incremental Shielding Assessment" + 2019 "P3 to Switchyard Absorber shielding assessment. Incremental Shielding Assessment for IERC".

FINAL APPROVALS

System Department Head Thomas C. Robitaille Date 11/18/2019
Assigned RSO N. Chelidze Date 11/18/2019
AD Division Head [Signature] Date 11/18/2019

Operator Signatures

Crew Chiefs

Crew A

Crew B

Crew C

Crew D

Crew E

Other

Running Condition P3 - Switchyard 120

November 18, 2019

Area RSO

Nino Chelidze

Mode of Operation Beam to Switchyard Absorber

Beam Limits	Beam Energy	ASE Limit	Operating Limit
	120 GeV	1.03 E16 protons/hr	6.00 E14 protons/hr

Critical Devices S:HP3US & S:HP3DS

Enclosures Protected Transfer Hall & Enclosures B, C, D, E, J, G1 Stub

Preferred Intensity is monitored via I:BEAM sampled on the \$39 or S:SYDINT

Monitoring Devices* Intensity to the SY Absorber is monitored via S:SYDINT (see Operational Comments)

*Other methods of monitoring intensity may be used.

Requirements

Access Devices S:HP3US and S:HP3DS must be disabled to access the enclosures protected.

Cool Off Period none

Special Interlocks The CDC Inputs including failure mode devices may all be found on the Safety System Status pages.

Special Concerns Any work performed on critical devices or obtaining a critical device key requires prior RSO approval.

Gates, Fencing and Passive Shielding Requirements There is no access to radiologically fenced areas without prior RSO approval.

Shielding, fencing and posting are in accordance with the following shielding assessment documents:
2017 "P3 to Switchyard Absorber Incremental Shielding Assessment"
2019 "Addendum to P3 to Switchyard Absorber Incremental Shielding Assessment for IERC"

Assigned RSO approval also signifies that all necessary Interlock Tests have been completed and Removable Shielding is installed.

Ops. Dept. Head Approval *Todd Miller* 11/18/2019

Assigned RSO Approval *N. Chelidze* 11/18/19

Sys. Dept. Head Approval *Fernando Chelidze* 11/18/2019

AD Head Approval *Mark ...* 11/18/2019

November 18, 2019

Area RSO

Nino Chelidze

Operational Comments

MCR must be appropriately staffed according to the Accelerator Safety Envelope.

The sustained beam intensity to the Absorber should not exceed 6.00 E14 protons/hour due to thermal considerations of the Absorber. Protons per pulse may change depending on the rep rate.

It is also acceptable to transport beam to the Switchyard Absorber using single turn extraction.

Operator Signatures

Crew Chiefs

Crew A

Crew B

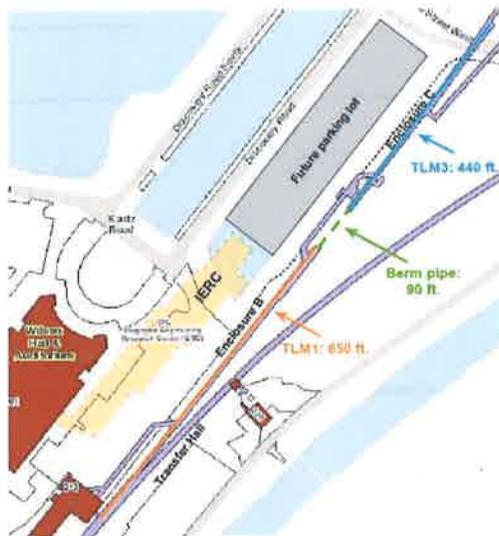
Crew C

Crew D

Crew E

Other

Operating Note
P1-P2 Beamline
November 18, 2019



This Operating Note has been issued for commissioning the slow spill from the Main Injector to P1-P2 beamline. The intensity of the beam is limited to the beamline physicist discretion.

The critical devices to Switchyard are racked out and the kirk keys are locked inside the RSO lock box in the Main Control Room.

There is no access to the Transfer Hall, F sector and enclosures B, C, D while this Operating Note is effective.

This Operating Note is in use during the testing of the slow spill extraction or until it is rescinded by the assigned RSO.

Nino Chelidze

N. Chelidze

Operator Signatures

Crew Chiefs

Crew A

Crew B

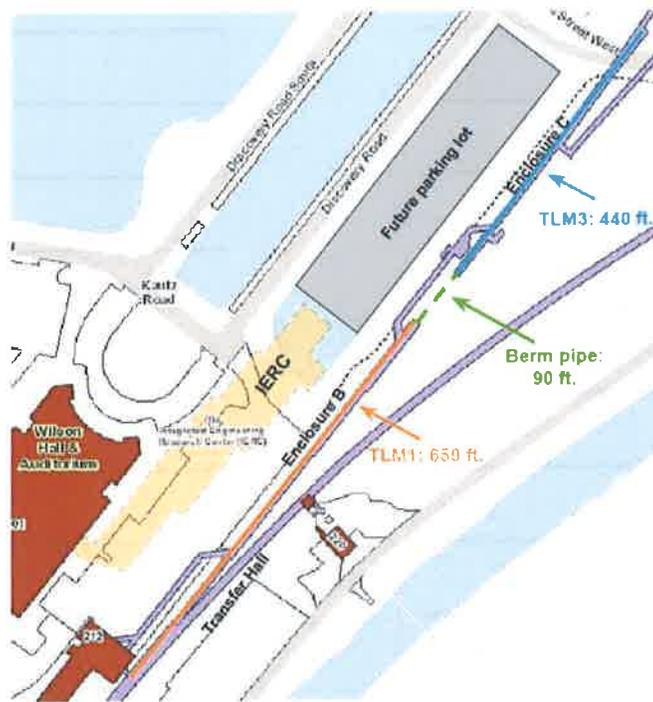
Crew C

Crew D

Crew E

Other

Operating Note
P3 to Switchyard Absorber beamline
November 18, 2019



This Operating Note has been issued for a dedicated TLM study that is going to be performed in P3 to Switchyard Absorber region. This study is required to calibrate TLM-s that span the length of the IERC project boundary in order to provide added protection for future IERC building occupants.

This study will occur in the evening and night hours, when construction site at IERC is closed. During daytime the critical device(s) to Switchyard will be locked off by the RSO.

The beam intensity for this study is limited to $8E12$ protons per pulse, 60 pulses per hour, out of the Main Injector.

During this TLM study the readings will be taken with 5 chipmunks, temporarily stationed across the SY berm at two locations: above VH94 and MLAM. The data will be collected through the MUX system. The chipmunk readings will be monitored live from the MCR by Adam Watts or designee. The area is locally posted with "Caution Radiation Area", "TLM studies in progress", "Authorized personnel only" signs. Authorized personnel include Adam Watts, Nino Chelidze or designee. If at any point any of the 5 temporary chipmunk readings exceed 100mrem/hr, the study shall be stopped, and conditions re-evaluated.

This Operating Note is in effect with the conditions described here, until it is rescinded by the assigned RSO.

Nino Chelidze

Operator Signatures

Crew Chiefs

Crew A

Crew B

Crew C

Crew D

Crew E

Other
