

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match.*

*The on-screen version of the Collider-Accelerator Department Procedure is the Official Version. Hard copies of all signed, official, C-A Operating Procedures are available by contacting the **ESSHQ Procedures Coordinator, Bldg. 911A***

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.13.g WXY (PEER 5) POWER UP TESTS

C-A-OPM Procedures in which this Attachment is used.		
4.120.13		

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
_____	_____	_____	_____
_____	_____	_____	_____

Approved: _____ *Signature on File* _____
 Collider-Accelerator Department Chairman Date

V. Castillo

4.120.13.g WXY (PEER 5) Power Up Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title: _____ Checksum: _____

Division B Software Filename and Checksum: Title: _____ Checksum: _____

Initial testing complete:

Test Team Leader's Name (Print): _____ Life Number: _____

Test Team Leader's Name (Sign): _____ Date: ____/____/____

Acceptance test procedure complete (following repairs and retesting if required):

Test Team Leader's Name (Print): _____ Life Number: _____

Test Team Leader's Name (Sign): _____ Date: ____/____/____

Test results reviewed by:

Safety Section Head's Name (Print): _____ Life Number: _____

Safety Section Head's Name (Sign): _____ Date: ____/____/____

Test results accepted by Radiation Safety Committee:

RSC Member's Name (Print): _____ Life Number: _____

RSC Member's Name (Sign): _____ Date: ____/____/____

NOTE:

All personnel working on any electrical system or equipment in the C-AD shall be familiar with BNL [SBMS Electrical Safety](#), BNL [SBMS Lockout/Tagout \(LO/TO\)](#), [C-A-OPM 1.5, "Electrical Safety Implementation Plan"](#), [C-A-OPM 1.5.3 "Procedure to Open or Close Breakers and Switches and Connecting/Disconnecting Plugs"](#), [C-A-OPM 2.36, "Lockout/Tagout for Control of Hazardous Energy"](#). C-AD will provide on-site/work specific training to individuals in the electrical safety aspects of their job functions and assignments.

1.1 Test of Peer 5 PLC for Power-up conditions in Mode 24

<input type="checkbox"/>	PLACE	Peer 5 in Mode 16	
<input type="checkbox"/>	VERIFY	Peer 5 is in Controlled Access	MODE 16
	RESET	Peer 5 gates: WGE1, XGI1, XGI2, YGI1, YGI2 and WGE2	
<input type="checkbox"/>	VERIFY	Peer 5 gates: <input type="checkbox"/> WGE1, <input type="checkbox"/> XGI1, <input type="checkbox"/> XGI2, <input type="checkbox"/> YGI1, <input type="checkbox"/> YGI2, and <input type="checkbox"/> WGE2 are	RESET
	SWEEP	Peer 5 Zones: W, X and Y	
<input type="checkbox"/>	VERIFY	Peer 5 Zones Div A <input type="checkbox"/> & Div B <input type="checkbox"/> for <input type="checkbox"/> W, <input type="checkbox"/> X and <input type="checkbox"/> Y are	SWEEP OK
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> & Div B <input type="checkbox"/> Crash Systems are	OK
	SET	RHIC Primary Beam Stop Withdraw Cmd button in MCR	IN
<input type="checkbox"/>	VERIFY	MCR sees RHIC Primary Beam Stop Withdraw Cmd	IN
<input type="checkbox"/>	VERIFY	MCR sees RHIC Injection CDs (U, W) on CD page	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic Inj Rhbk Lth	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic Rhbk Lth (BS 3)	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> ATR inh (for 8° & 20°)	ON
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> ATR Rhbk Lth	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A Rhic Ring inh (BS 1,2)	ON
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div B Rhic Ring inh (BS 1,2)	ON
	PLACE	Peer 5 in Mode 24	
<input type="checkbox"/>	VERIFY	Peer 5 is in No Access	MODE 24
<input type="checkbox"/>	VERIFY	MCR sees RHIC Injection CDs (U, W) on CD page	ENABLED
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic Inj Rhbk Lth	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic Rhbk Lth (BS 3)	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> ATR inh (for 8° & 20°)	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> ATR Rhbk Lth	OFF
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A Rhic Ring inh (BS 1,2)	ON
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div B Rhic Ring inh (BS 1,2)	ON
	SET	RHIC Primary Beam Stop Withdraw Cmd button in MCR	OUT
<input type="checkbox"/>	VERIFY	MCR sees RHIC Primary Beam Stop Withdraw Cmd	OUT
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic Ring inh (BS 1,2)	OFF
<input type="checkbox"/>	Check for acceptance of Test of Peer 5 PLC for Power-up conditions in Mode 24		

1.2 Test of Peer 5 PLC Division A for Power-up conditions in Mode 24

- | | | | |
|--------------------------|---|---|---------------------|
| <input type="checkbox"/> | VERIFY | Peer 5 is in No Access | MODE 24 |
| | TURN OFF | AC Power to the Peer 5 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 5 Division A PLC is | OFF |
| | WAIT | 30 Seconds | |
| | TURN ON | AC Power to the Peer 5 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 5 Division A PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Division A on Mtce Status page | MODE 2 |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A gates: <input type="checkbox"/> WGE1, <input type="checkbox"/> XGI1, <input type="checkbox"/> XGI2, <input type="checkbox"/> YGI1, <input type="checkbox"/> YGI2, and <input type="checkbox"/> WGE2 , are | NG H/W |
| | RESET | Div A Hardware Faults | |
| <input type="checkbox"/> | VERIFY | Div A Hardware Faults are | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees RHIC Injection CDs (U, W) on CD page | A ≠B |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A Rhic Inj RhbK Lth | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> Rhic RhbK Lth (BS 3) | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A ATR inh (for 8° & 20°) | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> ATR RhbK Lth | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A Rhic Ring inh (BS 1,2) | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 W Rchbk | A ≠ B |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A gates: <input type="checkbox"/> WGE1, <input type="checkbox"/> XGI1, <input type="checkbox"/> XGI2, <input type="checkbox"/> YGI1, <input type="checkbox"/> YGI2, and <input type="checkbox"/> WGE2 , are | CLOSED |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A Crash Systems are | OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div A Zones are | NO SWEEP |
| | RESET | Reachback | |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 W Rchbk | Reachback OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div B: <input type="checkbox"/> Mode, <input type="checkbox"/> H/W Faults, <input type="checkbox"/> RHIC Inj CD, <input type="checkbox"/> RHIC CD, <input type="checkbox"/> Perm. Link, <input type="checkbox"/> Gates, <input type="checkbox"/> Crash , <input type="checkbox"/> Zones | NO CHANGE |
| <input type="checkbox"/> | Check for acceptance of Test of Peer 5 PLC Division A for Power-up conditions in Mode 24 | | |

1.3 Test of Peer 5 PLC Division B for Power-up conditions in Mode 24

- | | | | |
|--------------------------|-----------------|--|----------------|
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Div B is in No Access | MODE 24 |
| | TURN OFF | AC Power to the Peer 5 Division B PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 5 Division B PLC is | OFF |
| | WAIT | 30 Seconds | |
| | TURN ON | AC Power to the Peer 5 Division B PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 5 Division B PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 Division on Mtce Status page | MODE 2 |

- VERIFY** **MCR sees Peer 5 Div B gates:** WGE1, XGI1, XGI2, YGI1, YGI2, and WGE2 , are **NG H/W**

- RESET** **Div B Hardware Faults**
- VERIFY** **Div B Hardware Faults** are **RESET**

- VERIFY** **MCR sees RHIC Injection CDs (U, W) on CD page** **A ≠B**
- VERIFY** **MCR sees Peer 5 Div B Rhic Inj Rhbk Lth** **OFF**
- VERIFY** **MCR sees Peer 5 Div A and Div B Rhic Rhbk Lth (BS 3)** **OFF**
- VERIFY** **MCR sees Peer 5 Div B ATR inh (for 8° & 20°)** **ON**
- VERIFY** **MCR sees Peer 5 Div A and Div B ATR Rhbk Lth** **OFF**
- VERIFY** **MCR sees Peer 5 Div A & Div B Rhic Ring inh (BS 1,2)** **ON**

- VERIFY** **MCR sees Peer 5 W Rchbk** **Reachback**
- VERIFY** **MCR sees Peer 5 RHIC Rchbk** **Reachback OK**
- VERIFY** **MCR sees RHIC BS 3** **IN**

- VERIFY** **MCR sees Peer 5 Div B gates:** WGE1, XGI1, XGI2, YGI1, YGI2, and WGE2, are **CLOSED**

- VERIFY** **MCR sees Peer 5 Div B Crash Systems** are **OK**
- VERIFY** **MCR sees Peer 5 Div B Zones** are **NO SWEEP**

- VERIFY** **MCR sees Peer 5 Div A:** Mode, H/W Faults, RHIC Inj CD, RHIC CD, Perm. Link, Gates, Crash , Zones **NO CHANGE**

- RESET** **Reachbacks**

- VERIFY** **MCR sees Peer 5 W Rchbk** **Reachback OK**
- VERIFY** **MCR sees Peer 5 RHIC Rchbk** **Reachback OK**
- VERIFY** **MCR sees RHIC BS 3** **OUT**

- PLACE** **Peer 5 in Mode 8**
- VERIFY** **Peer 5 is in Restricted Access** **MODE 8**

- VERIFY** **MCR sees RHIC Injection CDs (U, W) on CD page** **DISABLED**
- VERIFY** **MCR sees Peer 5 Div A and Div B Rhic Inj Rhbk Lth** **OFF**
- VERIFY** **MCR sees Peer 5 Div A and Div B Rhic Rhbk Lth (BS 3)** **OFF**
- VERIFY** **MCR sees Peer 5 Div A and Div B ATR inh (for 8° & 20°)** **ON**
- VERIFY** **MCR sees Peer 5 Div A and Div B ATR Rhbk Lth** **OFF**
- VERIFY** **MCR sees Peer 5 Div A and Div B Rhic Ring inh (BS 1,2)** **ON**

- VERIFY** **MCR sees Peer 5 Div A & Div B gates:** WGE1, XGI1, XGI2, YGI1, YGI2, and WGE2 , are **CLOSED**

- VERIFY** **MCR sees Peer 5 Div A & Div B Crash Systems** are **OK**
- VERIFY** **Peer 5 Zones Div A & Div B for W, X and Y are** **NO SWEEP**

- VERIFY** **MCR sees Peer 5 W Rchbk** **Reachback OK**
- VERIFY** **MCR sees Peer 5 RHIC Rchbk** **Reachback OK**
- VERIFY** **MCR sees RHIC BS 3** **OUT**

- Check for acceptance of Test of Peer 5 PLC Division B for Power-up conditions in Mode 24**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: ____/____/____

TTL: Sign for completion of final testing: _____

Date: ____/____/____