

*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

4.120.10.g 10 O'Clock (PEER 15) Power-Up Tests

C-A-OPM Procedures in which this Attachment is used.		
4.120.10		

Hand Processed Changes

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

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

V. Castillo

4.120.10.g 10 O'Clock (PEER 15) 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 Verify steps to place Peer 15 in No Access, Mode 24

- | | | | |
|--------------------------|---|---|----------------|
| <input type="checkbox"/> | PLACE | Peer 15 in Mode 16 | |
| <input type="checkbox"/> | VERIFY | Peer 15 is in Controlled Access | MODE 16 |
| | CLOSE | Peer 15 gate 11GS1 | |
| | RESET | Peer 15 gates: 9GS1, 9EL1, 9GI1, 9ED1, 10GE1, 10GI1, 10EL1, 10ED1 | |
| <input type="checkbox"/> | VERIFY | Peer 15 gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1, are | RESET |
| | SWEEP | Peer 15 Zones: 9Z1, 10Z1, 10Z2 | |
| <input type="checkbox"/> | VERIFY | Peer 15 Zones: <input type="checkbox"/> 9Z1, <input type="checkbox"/> 10Z1, <input type="checkbox"/> 10Z2 are | SWEPT |
| <input type="checkbox"/> | PLACE | Peer 15 in Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 15 is in No Access | MODE 24 |
| | WAIT | 90 secs | |
| | SET | RHIC Primary BS withdraw command | OUT |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 RHIC Injection inhibit, Div A <input type="checkbox"/> & Div B <input type="checkbox"/> | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 RHIC Ring inhibit Div A <input type="checkbox"/> & Div B <input type="checkbox"/> (BS 1 & 2) | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Permit Link Div A <input type="checkbox"/> & Div B <input type="checkbox"/> are | ENABLED |
| <input type="checkbox"/> | Check for acceptance of Verify steps to place Peer 15 in No Access, Mode 2 | | |

1.2 Test Div A PLC for Power-up conditions

- | | | | |
|--------------------------|-----------------|---|----------------|
| <input type="checkbox"/> | VERIFY | Peer 15 is in No Access | MODE 24 |
| | TURN OFF | AC Power to the Peer 15 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 15 Division A PLC is | OFF |
| | WAIT | 30 Seconds | |
| | TURN ON | AC Power to the Peer 15 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 15 Division A PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Division A PLC on Mtc. Status page | MODE 2 |
| <input type="checkbox"/> | VERIFY | Peer 15 Div A gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1 and <input type="checkbox"/> 11GS1 are | NG H/W |

- | | | | |
|--------------------------|---|---|------------------|
| <input type="checkbox"/> | RESET | Div A Hardware Faults | |
| <input type="checkbox"/> | VERIFY | Div A Hardware Faults are | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A RHIC Injection inhibit | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A RHIC Ring inhibit (BS 1 & 2) | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A Permit Link is | DISABLED |
| <input type="checkbox"/> | VERIFY | Peer 15 Div A gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1 and <input type="checkbox"/> 11GS1 are | CLOSED |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A Crash Systems are | OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A Zones are | NO SWEEP |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div B: <input type="checkbox"/> Mode, <input type="checkbox"/> H/W Faults, <input type="checkbox"/> RHIC Inj inh, <input type="checkbox"/> RHIC Ring inh, <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 Div A PLC for Power-up conditions | | |

1.3 Test Div B PLC for Power-up conditions

- | | | | |
|--------------------------|-----------------|---|------------------|
| <input type="checkbox"/> | VERIFY | Peer 15 Div B is still in No Access | MODE 24 |
| <input type="checkbox"/> | TURN OFF | AC Power to the Peer 15 Division B PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 15 Division B PLC is | OFF |
| | WAIT | 30 Seconds | |
| <input type="checkbox"/> | TURN ON | AC Power to the Peer 15 Division B PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 15 Division B PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Division B PLC on Mtc. Status page | MODE 2 |
| <input type="checkbox"/> | VERIFY | Peer 15 Div B gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1 and <input type="checkbox"/> 11GS1 are | NG H/W |
| <input type="checkbox"/> | RESET | Div B Hardware Faults | |
| <input type="checkbox"/> | VERIFY | Div B Hardware Faults are | RESET |
| <input type="checkbox"/> | VERIFY | MCR sees Div B RHIC Injection inhibit | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Div B RHIC Ring inhibit (BS 1 & 2) | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Div B Permit Link is | DISABLED |
| <input type="checkbox"/> | VERIFY | Peer 15 Div B gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1 and <input type="checkbox"/> 11GS1 are | CLOSED |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div B Crash Systems are | OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div B Zones are | NO SWEEP |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Div A: <input type="checkbox"/> Mode, <input type="checkbox"/> H/W Faults, <input type="checkbox"/> RHIC Inj inh, <input type="checkbox"/> RHIC Ring inh, <input type="checkbox"/> Perm. Link, <input type="checkbox"/> Gates, <input type="checkbox"/> Crash, <input type="checkbox"/> Zones | NO CHANGE |
| <input type="checkbox"/> | PLACE | Peer 15 in Mode 8 | |
| <input type="checkbox"/> | VERIFY | Peer 15 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | Peer 15 Div gates: <input type="checkbox"/> 9GS1, <input type="checkbox"/> 9EL1, <input type="checkbox"/> 9GI1, <input type="checkbox"/> 9ED1, <input type="checkbox"/> 10GE1, <input type="checkbox"/> 10GI1, <input type="checkbox"/> 10EL1, <input type="checkbox"/> 10ED1 and <input type="checkbox"/> 11GS1 are | CLOSED |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Crash Systems Div A & Div B are | OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 15 Zones Div A & Div B are | NO SWEEP |

- VERIFY** **MCR** sees Peer 15 **RHIC Injection inhibit Div A** & **Div B** **ON**
- VERIFY** **MCR** sees Peer 15 **RHIC Ring inhibit Div A** & **Div B** (BS 1 & 2) **ON**
- VERIFY** **MCR** sees Peer 15 **Permit Link Div A** & **Div B** are **DISABLED**

- Check for acceptance of Test Div B PLC for Power-up conditions**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: ____/____/____

TTL: Sign for completion of final testing: _____

Date: ____/____/____