

*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

4.120.2.g 2 O'Clock (PEER 11) Power-Up Tests

C-A-OPM Procedures in which this Attachment is used.		
4.120.2		

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

4.120.2.g 2 O’Clock (PEER 11) 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 11 in No Access, Mode 24

- | | | | |
|--------------------------|--|---|----------------|
| <input type="checkbox"/> | PLACE | Peer 11 in Mode 16 | |
| <input type="checkbox"/> | VERIFY | Peer 11 is in Controlled Access | MODE 16 |
| | CLOSE | Peer 11 gate 3GI1 | |
| | RESET | Peer 11 gates: 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, and 2ED1 | |
| <input type="checkbox"/> | VERIFY | Peer 11 gates: <input type="checkbox"/> 1GS1, <input type="checkbox"/> 1EL1, <input type="checkbox"/> 1GI1, <input type="checkbox"/> 2MD1, <input type="checkbox"/> 2GE1, <input type="checkbox"/> 2MD2, <input type="checkbox"/> 2GI1, <input type="checkbox"/> 2GE2, <input type="checkbox"/> 2MD3, <input type="checkbox"/> 2EL1, and <input type="checkbox"/> 2ED1 are | RESET |
| | SWEEP | Peer 11 Zones: 1Z1, 2Z1, 2Z2 | |
| <input type="checkbox"/> | VERIFY | Peer 11 Zones: <input type="checkbox"/> 1Z1, <input type="checkbox"/> 2Z1, <input type="checkbox"/> 6Z2 are | SWEPT |
| <input type="checkbox"/> | PLACE | Peer 11 in Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 11 is in No Access | MODE 24 |
| | WAIT | 90 secs | |
| | SET | RHIC Primary BS withdraw command | OUT |
| <input type="checkbox"/> | VERIFY | MCR sees Div A <input type="checkbox"/> & Div B <input type="checkbox"/> RHIC Injection Critical Device inhibit | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Div A <input type="checkbox"/> & Div B <input type="checkbox"/> RHIC Critical Device inhibit (BS 1 & 2) | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Div A <input type="checkbox"/> & Div B <input type="checkbox"/> Permit Link is | ENABLED |
| <input type="checkbox"/> | Check for acceptance of Verify steps to place Peer 11 in No Access, Mode 24 | | |

1.2 Test Div A PLC for Power-up conditions

- | | | | |
|--------------------------|-----------------|--|----------------|
| <input type="checkbox"/> | VERIFY | Peer 11 Div A <input type="checkbox"/> and Div B <input type="checkbox"/> is in No Access | MODE 24 |
| | TURN OFF | AC Power to the Peer 11 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 11 Division A PLC is | OFF |
| | WAIT | 30 Seconds | |
| | TURN ON | AC Power to the Peer 11 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 11 Division A PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 11 Division A PLC on Mtc. Status page | MODE 2 |

- VERIFY** **MCR sees Peer 11 Div A gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1 and 2ED1 are **NG H/W**
- RESET** **Div A Hardware Faults**
- VERIFY** **Div A Hardware Faults** are **RESET**
- VERIFY** **MCR sees Div A RHIC Injection Critical Device inhibit** **ON**
- VERIFY** **MCR sees Div A RHIC Critical Device inhibit (BS 1 & 2)** **ON**
- VERIFY** **MCR sees Div A Permit Link is** **DISABLED**
- VERIFY** **MCR sees Peer 11 Div A gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1 and 2ED1 are **CLOSED**
- VERIFY** **MCR sees Peer 11 Div A Crash Systems** are **OK**
- VERIFY** **MCR sees Peer 11 Div A Zones** are **NO SWEEP**
- VERIFY** **MCR sees Peer 11 Div B:** Mode, H/W Faults, RHIC Inj CD inh, RHIC CD inh, Perm. Link, Gates, Crash, Zones **NO CHANGE**
- Check for acceptance of Test Div A PLC for Power-up conditions**

1.3 Test Div B PLC for Power-up conditions

- VERIFY** **Peer 11 Div B** is still in **No Access** **MODE 24**
- TURN OFF** **AC Power to the Peer 11 Division B PLC**
- VERIFY** **AC Power to the Peer 11 Division B PLC is** **OFF**
- WAIT** **30 Seconds**
- TURN ON** **AC Power to the Peer 11 Division B PLC**
- VERIFY** **AC Power to the Peer 11 Division B PLC is** **ON**
- VERIFY** **MCR sees Peer 11 Division B PLC on Mtc. Status page** **MODE 2**
- VERIFY** **MCR sees Peer 11 Div B gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, 2ED1 and 3GI1 are **NG H/W**
- RESET** **Div B Hardware Faults**
- VERIFY** **Div B Hardware Faults** are **RESET**
- VERIFY** **MCR sees Div B RHIC Injection Critical Device inhibit** **ON**
- VERIFY** **MCR sees Div B RHIC Critical Device inhibit (BS 1 & 2)** **ON**
- VERIFY** **MCR sees Div B Permit Link is** **DISABLED**
- VERIFY** **MCR sees Peer 11 Div B gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, 2ED1 and 3GI1 are **CLOSED**
- VERIFY** **MCR sees Peer 11 Div B Crash Systems** are **OK**
- VERIFY** **MCR sees Peer 11 Div B Zones** are **NOT SWEPT**

- VERIFY** **MCR sees Peer 11 Div A:** Mode, H/W Faults, RHIC Inj CD inh, RHIC CD inh, Perm. Link, Gates, Crash , Zones **NO CHANGE**

- PLACE** **Peer 11 in Mode 8**
- VERIFY** **Peer 11 is in Restricted Access** **MODE 8**

- VERIFY** **Peer 11 Div A & B gates:** 1GS1, 1EL1, 1GI1, 2MD1, 2GE1, 2MD2, 2GI1, 2GE2, 2MD3, 2EL1, 2ED1, 3GI1 are
- VERIFY** **MCR sees Peer 11 Div A and Div B Crash Systems are** **CLOSED**
- VERIFY** **MCR sees Peer 11 Div A and Div B Zones are** **OK**

- VERIFY** **MCR sees Div A & Div B RHIC Injection Critical Device inhibit** **ON**
- VERIFY** **MCR sees Div A & Div B RHIC Critical Device inhibit (BS 1 & 2)** **ON**
- VERIFY** **MCR sees Div A & Div B Permit Link is** **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: ____/____/____