

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

4.120.6.g 6 O’Clock (PEER 7) Power-Up Tests

C-A-OPM Procedures in which this Attachment is used.		
4.120.6		

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

4.120.6.g 6 O’Clock (PEER 7) 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 7 in No Access, Mode 24

- | | | | |
|--------------------------|---|--|----------------|
| | PLACE | Peer 7 in Mode 16 | |
| <input type="checkbox"/> | VERIFY | Peer 7 is in Controlled Access | MODE 16 |
| | CLOSE | Peer 7 gates: XGI2, YGI2 and 7GS1 | |
| | RESET | Peer 7 gates: 5GS1, 5EL1, 5GE1, 5ED1, 6GE1, 6GE2, 6MD1, 6ED1, 6GE3, 6EL1, 6ED2 | |
| <input type="checkbox"/> | VERIFY | Peer 7 gates: <input type="checkbox"/> 5GS1, <input type="checkbox"/> 5EL1, <input type="checkbox"/> 5GE1, <input type="checkbox"/> 5ED1, <input type="checkbox"/> 6GE1, <input type="checkbox"/> 6GE2, <input type="checkbox"/> 6MD1, <input type="checkbox"/> 6ED1, <input type="checkbox"/> 6GE3, <input type="checkbox"/> 6EL1, <input type="checkbox"/> 6ED2 are | RESET |
| | SWEEP | Peer 7 Zones: 5Z1, 6Z1, 6Z2 | |
| <input type="checkbox"/> | VERIFY | Peer 7 Zones: <input type="checkbox"/> 5Z1, <input type="checkbox"/> 6Z1, <input type="checkbox"/> 6Z2 are | SWEPT |
| | PLACE | Peer 7 in Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 7 is in No Access | MODE 24 |
| | WAIT | 90 secs | |
| | SET | RHIC Primary BS withdraw command | OUT |
| <input type="checkbox"/> | VERIFY | MCR sees RHIC Injection Critical Device inhibit | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees RHIC Critical Device inhibit (BS 1 & 2) | OFF |
| <input type="checkbox"/> | VERIFY | MCR sees Permit Link is | ENABLED |
| <input type="checkbox"/> | Check for acceptance of Verify steps to place Peer 7 in No Access, Mode 24 | | |

1.2 Test Div A PLC for Power-up conditions

- | | | | |
|--------------------------|-----------------|---|----------------|
| <input type="checkbox"/> | VERIFY | Peer 7 is in No Access | MODE 24 |
| | TURN OFF | AC Power to the Peer 7 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 7 Division A PLC is | OFF |
| | WAIT | 30 Seconds | |
| | TURN ON | AC Power to the Peer 7 Division A PLC | |
| <input type="checkbox"/> | VERIFY | AC Power to the Peer 7 Division A PLC is | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 7 Division A PLC on Mtc. Status page | MODE 2 |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 7 Div A gates: <input type="checkbox"/> 5GS1, <input type="checkbox"/> 5EL1, <input type="checkbox"/> 5GE1, <input type="checkbox"/> 5ED1, <input type="checkbox"/> 6GE1, <input type="checkbox"/> 6GE2, <input type="checkbox"/> 6MD1, <input type="checkbox"/> 6ED1, <input type="checkbox"/> 6GE3, <input type="checkbox"/> 6EL1, <input type="checkbox"/> 6ED2 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 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 7 Div A gates:** 5GS1, 5EL1, 5GE1, 5ED1, 6GE1, 6GE2, 6MD1, 6ED1, 6GE3, 6EL1, 6ED2 are **CLOSED**
- VERIFY** MCR sees **Peer 7 Div A Crash Systems** are **OK**
- VERIFY** MCR sees **Peer 7 Div A Zones** are **NO SWEEP**
- VERIFY** MCR sees **Peer 7 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** MCR sees **Peer 7 Div B** is still in **No Access** **MODE 24**
- VERIFY** MCR sees **Div B RHIC Injection Critical Device inhibit** **OFF**
- VERIFY** MCR sees **Div B RHIC Critical Device inhibit** (BS 1 & 2) **OFF**
- VERIFY** MCR sees **Div B Permit Link** is **ENABLED**
- TURN OFF** AC Power to the **Peer 7 Division B PLC**
- VERIFY** AC Power to the **Peer 7 Division B PLC** is **OFF**
- WAIT** **30 Seconds**
- TURN ON** AC Power to the **Peer 7 Division B PLC**
- VERIFY** AC Power to the **Peer 7 Division B PLC** is **ON**
- VERIFY** MCR sees **Peer 7 Division B PLC** on **Mtc. Status** page **MODE 2**
- VERIFY** MCR sees **Peer 7 Div B gates:** 5GS1, 5EL1, 5GE1, 5ED1, 6GE1, 6GE2, 6MD1, 6ED1, 6GE3, 6EL1, 6ED2 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 7 Div B gates:** 5GS1, 5EL1, 5GE1, 5ED1, 6GE1, 6GE2, 6MD1, 6ED1, 6GE3, 6EL1, 6ED2 are **CLOSED**
- VERIFY** MCR sees **Peer 7 Div B Crash Systems** are **OK**
- VERIFY** MCR sees **Peer 7 Div B Zones** are **NO SWEEP**
- VERIFY** MCR sees **Peer 7 Div A:** Mode, H/W Faults, RHIC Inj CD inh, RHIC CD inh, Perm. Link, Gates, Crash , Zones **NO CHANGE**

- | | | | |
|--------------------------|---|--|-----------------|
| <input type="checkbox"/> | PLACE | Peer 7 in Mode 8 | |
| <input type="checkbox"/> | VERIFY | Peer 7 is in Restricted Access | MODE 8 |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 7 gates: <input type="checkbox"/> 5GS1, <input type="checkbox"/> 5EL1, <input type="checkbox"/> 5GE1, <input type="checkbox"/> 5ED1,
<input type="checkbox"/> 6GE1, <input type="checkbox"/> 6GE2, <input type="checkbox"/> 6MD1, <input type="checkbox"/> 6ED1, <input type="checkbox"/> 6GE3, <input type="checkbox"/> 6EL1, <input type="checkbox"/> 6ED2,
<input type="checkbox"/> 7GS1, <input type="checkbox"/> YGI2, and <input type="checkbox"/> XGI2 are | CLOSED |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 7 Crash Systems are | OK |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 7 Zones are | NO SWEEP |
| <input type="checkbox"/> | VERIFY | MCR sees RHIC Injection Critical Device inhibit | ON |
| <input type="checkbox"/> | VERIFY | MCR sees RHIC Critical Device inhibit (BS 1 & 2) | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Permit Link is | DISABLED |
| <input type="checkbox"/> | 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: ____/____/____