

*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.a WXY (PEER 5) CRITICAL DEVICE 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>
_____	_____	_____	_____
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Approved: _____ *Signature on File* _____
 Collider-Accelerator Department Chairman Date

4.120.13.a WXY (PEER 5) Critical Device 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: ____/____/____

1.1 Setup and test of the Critical Devices response to a loss of PASS enable.

<input type="checkbox"/>	VERIFY	CD Key switch is set for	XY ARC
	PLACE	Peer 5 in Mode 8	
<input type="checkbox"/>	VERIFY	Peer 5 is in Restricted Access	MODE 8
<input type="checkbox"/>	VERIFY	MCR sees Inj CD	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	ON
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring CD (B/S: <input type="checkbox"/> G1, <input type="checkbox"/> G2)	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G1 and G2)	ON
<input type="checkbox"/>	VERIFY	MCR sees RHIC Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G3)	OFF
<input type="checkbox"/>	VERIFY	MCR sees ATR Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	OFF
	PLACE	Peer 5 in Mode 16	
<input type="checkbox"/>	VERIFY	Peer 5 is in Controlled Access	MODE 16
	CLOSE	Peer 5 gates: UED1, WGE1, WGE2, XGI1, XGI2, YGI1 and YGI2	
	RESET	Peer 5 gates: WGE1, WGE2, XGI1, XGI2, YGI1 and YGI2	
<input type="checkbox"/>	VERIFY	Peer 5 gates: WGE1, WGE2, XGI1, XGI2, YGI1 and YGI2	RESET
	SWEEP	Peer 5 Zones: W, X and Y	
<input type="checkbox"/>	VERIFY	Peer 5 Zones: W, X, and Y	SWEPT
	PLACE	Peer 5 in Mode 24	
<input type="checkbox"/>	VERIFY	Peer 5 is in No Access	MODE 24
<input type="checkbox"/>	VERIFY	MCR sees Inj CD	ENABLED
<input type="checkbox"/>	VERIFY	MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	OFF
	REQUEST	RHIC Primary Beamstop command OUT	
<input type="checkbox"/>	VERIFY	RHIC Primary Beamstop command is	OUT
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring CD B/S : <input type="checkbox"/> G1, <input type="checkbox"/> G2	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G1 and G2)	OFF
<input type="checkbox"/>	VERIFY	MCR sees RHIC Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G3)	OFF
<input type="checkbox"/>	VERIFY	MCR sees ATR Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	OFF
<input type="checkbox"/>	TURN OFF	Any key in the WXY Key Tree	
<input type="checkbox"/>	VERIFY	MCR sees Peer 5 go to	MODE 2
<input type="checkbox"/>	VERIFY	MCR sees Inj CD	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	ON
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring CD (B/S: <input type="checkbox"/> G1, <input type="checkbox"/> G2)	DISABLED
<input type="checkbox"/>	VERIFY	MCR sees RHIC Ring inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G1 and G2)	OFF
<input type="checkbox"/>	VERIFY	MCR sees RHIC Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> (BS G3)	OFF
<input type="checkbox"/>	VERIFY	MCR sees ATR Reachback Latch inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/>	OFF
	PLACE	Peer 5 in Mode 8	
<input type="checkbox"/>	VERIFY	Peer 5 is in Restricted Access	MODE 8
<input type="checkbox"/>		Check for acceptance of Setup and test of the Critical Devices response to a loss of PASS enable.	

1.2 Verify Critical Device, PSWarc20 and PSWarc8, Reachback

- VERIFY** **CD Key switch** is set for **XY ARC**

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

- VERIFY** **MCR** sees **Inj CD** on CD pg **DISABLED**
- VERIFY** **MCR** sees **ATR inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **ATR Reachback Latch inhibit Div A** and **Div B** **OFF**
- VERIFY** **MCR** sees **AGS Reachback Latch** on CD pg **OK**

- REMOVE** **PSWarc20** readback **relay** from **CD Iface Box B** circuit in **encl 5601** in **1000P**

- VERIFY** **MCR** sees **Inj CD** on CD pg **DISABLED**
- VERIFY** **MCR** sees **ATR inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **ATR Reachback Latch inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **AGS Reachback Latch** on CD pg **REACHBACK**

- REPLACE** **PSWarc20** rdback **relay** in **CD Iface Box B** circuit in **encl 5601** in **1000P**

- RESET** **Reachback**

- VERIFY** **MCR** sees **Inj CD** on CD pg **DISABLED**
- VERIFY** **MCR** sees **ATR inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **ATR Reachback Latch inhibit Div A** and **Div B** **OFF**
- VERIFY** **MCR** sees **AGS Reachback Latch** on CD pg **OK**

- REMOVE** **PSWarc8** readback **relay** from **CD Iface Box A** circuit in **encl 5600** in **A House**

- VERIFY** **MCR** sees **Inj CD** on CD pg **DISABLED**
- VERIFY** **MCR** sees **ATR inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **ATR Reachback Latch inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **AGS Reachback Latch** on CD pg **REACHBACK**

- REPLACE** **PSWarc8** readback **relay** in **CD Iface Box A** circuit in **encl 5600** in **A House**

- RESET** **Reachback**

- VERIFY** **MCR** sees **Inj CD** on CD pg **DISABLED**
- VERIFY** **MCR** sees **ATR inhibit Div A** and **Div B** **ON**
- VERIFY** **MCR** sees **ATR Reachback Latch inhibit Div A** and **Div B** **OFF**
- VERIFY** **MCR** sees **AGS Reachback Latch** on CD pg **OK**

- Check for acceptance of test** **Verify Critical Device, PSWarc20 and PSWarc8, Reachback**

1.3 Verify that under power Critical Device: PSWarc20 and PSWarc8 are disabled with broken Keytree

- | | | | |
|--------------------------|----------------|--|-----------------|
| <input type="checkbox"/> | VERIFY | CD Key switch is set for | XY ARC |
| | PLACE | Peer 5 in Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 5 is in No Access | MODE 24 |
| <input type="checkbox"/> | VERIFY | MCR sees Inj CD | ENABLED |
| <input type="checkbox"/> | VERIFY | MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OFF |
| | TURN ON | PSWarc20 and bring up to ~100 mA | |
| | TURN | Any key in ATR keytree | |
| <input type="checkbox"/> | VERIFY | MCR sees Inj CD on CD pg | DISABLED |
| <input type="checkbox"/> | VERIFY | MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 is in | MODE 2 |
| | RESET | All Peer 5 trips | |
| | PLACE | Peer 5 in Mode 24 | |
| <input type="checkbox"/> | VERIFY | Peer 5 is in No Access | MODE 24 |
| <input type="checkbox"/> | VERIFY | MCR sees Inj CD on CD pg | ENABLED |
| <input type="checkbox"/> | VERIFY | MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | OFF |
| | TURN ON | PSWarc8 and bring up to ~100 mA | |
| | TURN | Any key in ATR keytree | |
| <input type="checkbox"/> | VERIFY | MCR sees Inj CD on CD pg | DISABLED |
| <input type="checkbox"/> | VERIFY | MCR sees ATR inhibit Div A <input type="checkbox"/> and Div B <input type="checkbox"/> | ON |
| <input type="checkbox"/> | VERIFY | MCR sees Peer 5 is in | MODE 2 |
| | RESET | All Peer 5 trips | |
| | PLACE | Peer 5 in Mode 8 | |
| <input type="checkbox"/> | VERIFY | Peer 5 is in Restricted Access | MODE 8 |
- Check for acceptance of Verify that under power Critical Device: PSWarc20 and PSWarc8 are disabled with broken Keytree

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: ____/____/____

TTL: Sign for completion of final testing: _____

Date: ____/____/____