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

4.120.102.a NASA Space Radiation Laboratory (NSRL) (Peer 27) Critical Device Tests

Attachment

C-A-OPM Procedures in which this Attachment is used.		
4.120.102		

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials
_____	_____	_____	_____
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Approved:_____***Signature on File***_____ _____
Collider-Accelerator Department Chairman Date

V. Castillo

4.120.102.a NASA Space Radiation Laboratory (NSRL), (PEER 27) Critical Device Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

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

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

<u>Initial testing complete</u>:

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

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

<u>Acceptance test procedure complete (following repairs and retesting if required</u>):

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

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

<u>Test results reviewed by</u>:

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

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

<u>Test results accepted by Radiation Safety Committee</u>:

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

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

1.1 Test Critical Devices' states: enabled or disabled with the Critical Device Switch (CDS) set for NSRL inclusive (NI) operation in Modes 2, 8, 9, 10, 16, 17, 18 and 24

SET **Critical Device Switch (CDS)** switch to NSRI inclusive **(NI)** operation

☐ **VERIFY** **CDS** is set to **NI OPERN**

FOLLOW **Table 1** below

Place peer 27 in Mode	Verify Peer 27 is in mode	Verify TTB is	Verify LTB is	Verify B6 is	Verify D6 AC is	Verify D6 DC is	Verify NSRL plug is	Cont on Table 1 cont'd
2	**2** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
8	**8** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
9	**9** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	
10	**10** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Disab** ☐	
16	**16** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
17	**17** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	
18	**18** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Disab** ☐	
24	**24** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	

Table – 1 Critical Devices' States with CDS set for NI operation in Modes 2,8,9,10,16,17,18 and 24

Verify Peer 27 is in mode	Verify RD1D2 is	Verify NSRL Valve	Verify NSRL Shutter	Go to next mode in Table 1
2 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
8 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
9 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
10 ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	
16 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
17 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
18 ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	
24 ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	

Table – 1 Cont'd, Critical Devices' States with CDS set for NI operation in Modes 2,8,9,10,16,17,18 and 24

☐ **Check for acceptance of Test Critical Devices' states: enabled or disabled with the Critical Device Switch (CDS) set for NSRL inclusive (NI) operation in Modes 2, 8, 9, 10, 16, 17, 18 and 24**

1.2 Test Critical Devices' states: enabled or disabled with the Critical Device Switch (CDS) set for NSRL exclusive (NE) operation in Modes 2, 8, 9, 10, 16, 17, 18 and 24

SET **Critical Device Switch (CDS)** switch to NSRI exclusive **(NE)** operation

☐ **VERIFY** **CDS** is set to **NE OPERN**

FOLLOW **Table 2** below

Place peer 27 in Mode	Verify Peer 27 is in mode	Verify TTB is	Verify LTB is	Verify B6 is	Verify D6 AC is	Verify D6 DC is	Verify NSRL plug is	Cont on Table 2 cont'd
2	**2** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
8	**8** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
9	**9** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
10	**10** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
16	**16** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
17	**17** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
18	**18** ☐	**Disab** ☐	**Disab** ☐	**Disab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	
24	**24** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	

Table – 2 Critical Devices' States with CDS set for NE operation in Modes 2,8,9,10,16,17,18 and 24

Verify Peer 27 is in mode	Verify RD1D2 is	Verify NSRL Valve	Verify NSRL Shutter	Go to next mode in Table 2
2 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
8 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
9 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
10 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
16 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
17 ☐	**Enab** ☐	**Disab** ☐	**Disab** ☐	
18 ☐	**Enab** ☐`	**Disab** ☐	**Disab** ☐	
24 ☐	**Enab** ☐	**Enab** ☐	**Enab** ☐	

Table – 2 Cont'd, Critical Devices' States with CDS set for NE operation in Modes 2,8,9,10,16,17,18 and 24

☐ **Check for acceptance of Test Critical Devices' states: enabled or disabled with the Critical Device Switch (CDS) set for NSRL exclusive (NE) operation in Modes 2, 8, 9, 10, 16, 17, 18 and 24**

1.3 Test of NSRL Critical Device RD1D2 Power Supply under power

	PLACE	Critical Device Switch **(CDS)** in the NSRL Inclusive **(NI) position**	
□	**VERIFY**	**CDS** is in	**NI Posn**
□	**VERIFY**	**Power Supply RD1D2** is	**NO LOTO**
	PLACE	**Peer 27** in Safe Access **(SA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	ATTACH	Chipmunk Test Box **(CTB)** to **NMO 131** at BGE1 gate in **NSRL**	
	CLEAR	**NMO 131** interlocks **at MCR**	
□	**VERIFY**	**MCR** sees **NMO 131** Div A □ and Div B □	**OK**
	SWEEP	NSRL **Zones 1, 2 and 3** using **Forced Sweep** from MCR	
□	**VERIFY**	**MCR** sees NSRL **Zn 1** □, **Zn2** □ and **Zn3** □	**SWEPT**
	RESET	Gates **BGE1, BGE2, BGI1** and **BGI2**	
□	**VERIFY**	**MCR** sees gates **BGE1** □, **BGE2** □, **BGI1** □ and **BGI2** □	**RESET**
	PLACE	**PEER 27** in No Access **(NA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
□	**VERIFY**	MCR sees **Z1** Prim Crit Devs **(PCDs)**: **D1D2 DC** □, and **D1D2 AC** □	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCDs: D6DC** □, **D6AC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCDs = Z2** and **Z3** Rhbk Crit Devs **(RCDs) : TTB** □, **LTB** □ and **B6** □	**ENABLED**
□	**VERIFY**	MCR sees Nsrl Valve **(NVal)** □ and Nsrl Shtr **(NShr)** □	**ENABLED**
	TURN ON	Power Supply **RD1D2** and set to ~ **200 Amps**	
□	**VERIFY**	MCR sees on Pet Pg **(PP) RD1D2,** at **~200 Amps**	**ON**
□	**VERIFY**	MCR sees on Acs Cntrls Sec **(ACS) RD1D2: AC** □and **DC** □	**ON**
	PRESS	**Div A** trip button on **CTB**	
□	**VERIFY**	MCR sees **NMO 131 Div A**	**RAD INLK**
□	**VERIFY**	Power Supply **RD1D2** goes	**OFF**
□	**VERIFY**	MCR sees on **PP RD1D2,** at 0 **Amps**	**STBY**
□	**VERIFY**	MCR sees on **ACS RD1D2: AC** □ and **DC** □	**OFF**
□	**VERIFY**	MCR sees **Peer 27** remain in	**MODE 24**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A**	**DISABLED**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div B**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** □, **LTB** □ and **B6** □	**ENABLED**
	CLEAR	**NMO 131 Div A**	**RAD INLK**
□	**VERIFY**	**MCR** sees **NMO 131** Div A □ and Div B □	**OK**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** □ and **Div B** □	**ENABLED**

☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**ENABLED**
	TURN ON	Power Supply **RD1D2** and set to ~ **200 Amps**	
☐	**VERIFY**	MCR sees on **PP RD1D2,** at **~200 Amps**	**ON**
☐	**VERIFY**	MCR sees on **ACS RD1D2: AC ☐**and **DC ☐**	**ON**
☐	**VERIFY**	**MCR** sees **Peer 27 still** in **NA**	**MODE 24**
	PRESS	**Div B** trip button on **CTB**	
☐	**VERIFY**	MCR sees **NMO 131 Div B**	**RAD INLK**
☐	**VERIFY**	Power Supply **RD1D2** goes	**OFF**
☐	**VERIFY**	MCR sees on **PP RD1D2,** at 0 **Amps**	**STBY**
☐	**VERIFY**	MCR sees on **ACS RD1D2: AC ☐** and **DC ☐**	**OFF**
☐	**VERIFY**	MCR sees **Peer 27** remain in	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div B**	**DISABLED**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A**	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**ENABLED**
	CLEAR	**NMO 131 Div B**	**RAD INLK**
☐	**VERIFY**	**MCR** sees **NMO 131** Div A ☐ and Div B ☐	**OK**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A ☐** and **Div B ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**ENABLED**
	TURN ON	Power Supply **RD1D2** and set to ~ **200 Amps**	
☐	**VERIFY**	MCR sees on **PP RD1D2,** at **~200 Amps**	**ON**
☐	**VERIFY**	MCR sees on **ACS RD1D2: AC ☐**and **DC ☐**	**ON**
	TURN OFF	Power Supply **RD1D2**	
☐	**VERIFY**	Power Supply **RD1D2** goes	**OFF**
☐	**VERIFY**	MCR sees on **PP RD1D2,** at 0 **Amps**	**STBY**
☐	**VERIFY**	MCR sees on **ACS RD1D2: AC ☐** and **DC ☐**	**OFF**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

☐ **Check for acceptance of Test of NSRL Critical Device RD1D2 Power Supply under power.**

1.4 Test of NSRL Critical Device, LTB Bs 1 & 2 response to Failsafe interlock from NMO 131 in Zone 1 of NSRL

□	**VERIFY**	**CDS** is in	**NI Posn**
	PLACE	**Peer 27** in Safe Access **(SA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	ATTACH	Chipmunk Test Box **(CTB)** to **NMO 131** at **BGE1** gate in **NSRL**	
	CLEAR	**NMO 131** interlocks **at MCR**	
□	**VERIFY**	**MCR** sees **NMO 131 Div A** □ and **Div B** □	**OK**
□	**VERIFY**	**MCR** sees NSRL **Zn 1** □, **Zn2** □ and **Zn3** □	**SWEPT**
□	**VERIFY**	**MCR** sees gates **BGE1** □, **BGE2** □, **BGI1** □ and **BGI2** □	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** □, **LTB** □ and **B6** □	**ENABLED**
	OPEN	**LTB Bs 1&2** with **693 key** at panel **H** in **MCR**	
□	**VERIFY**	MCR sees **LTB Bs**	**OUT**
	PRESS	**Div A** fail button on **CTB**	
□	**VERIFY**	MCR sees **NMO 131 Div A**	**FAILSAFE**
□	**VERIFY**	MCR sees **LTB Bs**	**IN**
□	**VERIFY**	MCR sees **Peer 27 Div A**	**MODE 2**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div B**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** □, **LTB** □ and **B6** □	**DISABLED**
	CLEAR	**NMO 131 Div A**	**FAILSAFE**
□	**VERIFY**	**MCR** sees **NMO 131 Div A** □ and **Div B** □	**OK**
□	**VERIFY**	MCR sees **Peer 27 Div A**	**MODE 2**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** □, **LTB** □ and **B6** □	**ENABLED**
	OPEN	**LTB Bs 1&2** with **693 key** at panel **H** in **MCR**	

□	**VERIFY**	MCR sees **LTB Bs**	**OUT**
	PRESS	**Div B** fail button on **CTB**	
□	**VERIFY**	MCR sees **NMO 131 Div B**	**FAILSAFE**
□	**VERIFY**	MCR sees **LTB Bs**	**IN**
□	**VERIFY**	MCR sees **Peer 27 Div B**	**MODE 2**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC □, D6DC □** and **NPlg □**	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB □, LTB □** and **B6 □**	**DISABLED**
	CLEAR	**NMO 131 Div B**	**FAILSAFE**
□	**VERIFY**	**MCR** sees **NMO 131 Div A □** and **Div B □**	**OK**
□	**VERIFY**	MCR sees **Peer 27 Div B**	**MODE 2**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

□ **Check for acceptance of Test of NSRL Critical Device, LTB Bs 1 & 2 response to Failsafe interlock from NMO 131 in Zone 1 of NSRL**

1.5 Test of NSRL Critical Device, TTB Bs 1 & 2 response to Failsafe interlock from NMO 131 in Zone 1 of NSRL

□	**VERIFY**	**CDS** is in	**NI Posn**
	PLACE	**Peer 27** in Safe Access **(SA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	ATTACH	Chipmunk Test Box **(CTB)** to **NMO 131** at **BGE1** gate in **NSRL**	
	CLEAR	**NMO 131** interlocks **at MCR**	
□	**VERIFY**	**MCR** sees **NMO 131 Div A □** and **Div B □**	**OK**
□	**VERIFY**	**MCR** sees NSRL **Zn 1 □, Zn2 □** and **Zn3 □**	**SWEPT**
□	**VERIFY**	**MCR** sees gates **BGE1 □**, **BGE2 □**, **BGI1 □** and **BGI2 □**	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2**	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC □, D6DC □** and **NPlg □**	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB □, LTB □** and **B6 □**	**ENABLED**
	OPEN	**TTB Bs 1&2** with **693 key** at panel **H** in **MCR**	
□	**VERIFY**	MCR sees **LTB Bs**	**OUT**
	PRESS	**Div A** fail button on **CTB**	
□	**VERIFY**	MCR sees **NMO 131 Div A**	**FAILSAFE**

☐	**VERIFY**	MCR sees **TTB Bs**	**IN**
☐	**VERIFY**	MCR sees **Peer 27 Div A**	**MODE 2**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div B**	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**DISABLED**
	CLEAR	**NMO 131 Div A**	**FAILSAFE**
☐	**VERIFY**	**MCR** sees **NMO 131 Div A ☐** and **Div B ☐**	**OK**
☐	**VERIFY**	MCR sees **Peer 27 Div A**	**MODE 2**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2**	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**ENABLED**
	OPEN	**TTB Bs 1&2** with **693 key** at panel **H** in **MCR**	
☐	**VERIFY**	MCR sees **TTB Bs**	**OUT**
	PRESS	**Div B** fail button on **CTB**	
☐	**VERIFY**	MCR sees **NMO 131 Div B**	**FAILSAFE**
☐	**VERIFY**	MCR sees **TTB Bs**	**IN**
☐	**VERIFY**	MCR sees **Peer 27 Div B**	**MODE 2**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A**	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC ☐, D6DC ☐** and **NPlg ☐**	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB ☐, LTB ☐** and **B6 ☐**	**DISABLED**
	CLEAR	**NMO 131 Div B**	**FAILSAFE**
☐	**VERIFY**	**MCR** sees **NMO 131 Div A ☐** and **Div B ☐**	**OK**
☐	**VERIFY**	MCR sees **Peer 27 Div B**	**MODE 2**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

☐ **Check for acceptance of Test of NSRL Critical Device, TTB Bs 1 & 2 response to Failsafe interlock from NMO 131 in Zone 1 of NSRL**

1.6 Test of NSRL Critical Device D6 Power Supply's response, under power, to Peer 27 moving from Mode 24 (NA NA NA) to Mode 17 (CA CA NA)

	PLACE	Critical Device Switch **(CDS)** in the NSRL Inclusive **(NI) position**	
☐	**VERIFY**	**CDS** is in	**NI Posn**
☐	**VERIFY**	**Power Supply D6** is	**NO LOTO**
	PLACE	**Peer 27** in Safe Access **(SA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	SWEEP	NSRL **Zones 1, 2 and 3** using **Forced Sweep** from MCR	
☐	**VERIFY**	**MCR** sees NSRL **Zn 1** ☐, **Zn2** ☐ and **Zn3** ☐	**SWEPT**
	RESET	Gates **BGE1, BGE2, BGI1** and **BGI2**	
☐	**VERIFY**	**MCR** sees gates **BGE1** ☐, **BGE2** ☐, **BGI1** ☐ and **BGI2** ☐	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	TURN ON	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**ON**
☐	**VERIFY**	MCR sees on Acs Cntrls Sec **(ACS) D6: AC** ☐and **DC** ☐	**ON**
	PLACE	**Peer 27** in Controlled Access **(XA), Mode 17**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **XA: CA CA NA**	**MODE 17**
☐	**VERIFY**	Power Supply **D6** goes	**OFF**
☐	**VERIFY**	MCR sees on **PP D6,** at 0 **Amps**	**STBY**
☐	**VERIFY**	MCR sees on **D6: AC** ☐ and **DC** ☐	**OFF**
☐	**VERIFY**	MCR sees **Z1=Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**DISABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**DISABLED**
	PLACE	**PEER 27** in No Access **(NA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
	TURN ON	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**ON**

☐	**VERIFY**	MCR sees **D6: AC** ☐and **DC** ☐	**ON**
	TURN OFF	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**OFF**
☐	**VERIFY**	MCR sees **D6 DC**	**OFF**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

☐ **Check for acceptance of Test of NSRL Critical Device D6 Power Supply's response, under power, to Peer 27 moving from Mode 24 (NA NA NA) to Mode 17 (CA CA NA)**

1.7 Test of NSRL Critical Device D6 Power Supply's response, to individual Div A and Div B OFF commands with Peer 27 in No Access Mode 24

	PLACE	Critical Device Switch **(CDS)** in the NSRL Inclusive **(NI) position**	
☐	**VERIFY**	**CDS** is in	**NI Posn**
☐	**VERIFY**	**Power Supply D6** is	**NO LOTO**
	PLACE	**Peer 27** in Safe Access **(SA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	SWEEP	NSRL **Zones 1, 2 and 3** using **Forced Sweep** from MCR	
☐	**VERIFY**	**MCR** sees NSRL **Zn 1** ☐, **Zn2** ☐ and **Zn3** ☐	**SWEPT**
	RESET	Gates **BGE1, BGE2, BGI1** and **BGI2**	
☐	**VERIFY**	**MCR** sees gates **BGE1** ☐, **BGE2** ☐, **BGI1** ☐ and **BGI2** ☐	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	TURN ON	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**ON**
☐	**VERIFY**	MCR sees on Acs Cntrls Sec **(ACS) D6: AC** ☐and **DC** ☐	**ON**
	P&H	**SW S14-A** in **NSRL CD box, encl 5717** in bldg 914	
☐	**VERIFY**	Div A I/O Block **Output 01** is	**OFF**
☐	**VERIFY**	Power Supply **D6** goes	**OFF**
☐	**VERIFY**	MCR sees on **PP D6,** at 0 **Amps**	**STBY**
☐	**VERIFY**	MCR sees on **D6 RBs DC is**	**OFF**
☐	**VERIFY**	**MCR** sees **Peer 27 still** in **NA**	**MODE 24**

☐	**VERIFY**	MCR sees **Z1=Z2PCD, D6AC: Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z1=Z2PCD: D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	RELEASE	**SW S14-A** in **NSRL CD box, encl 5717** in bldg 914	
☐	**VERIFY**	Div A I/O Block **Output 01** is	**ON**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐**, D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
	TURN ON	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**ON**
☐	**VERIFY**	MCR sees **D6 RBs: AC** ☐and **DC** ☐	**ON**
	P&H	**SW S14-B** in **NSRL CD box, encl 5717** in bldg 914	
☐	**VERIFY**	**Div B** I/O Block **Output 01** is	**OFF**
☐	**VERIFY**	Power Supply **D6** goes	**OFF**
☐	**VERIFY**	MCR sees on **PP D6,** at 0 **Amps**	**STBY**
☐	**VERIFY**	MCR sees on **D6 RBs DC is**	**OFF**
☐	**VERIFY**	**MCR** sees **Peer 27 still** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1=Z2PCD, D6AC: Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z1=Z2PCD: D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	RELEASE	**SW S14-B** in **NSRL CD box, encl 5717** in bldg 914	
☐	**VERIFY**	**Div B** I/O Block **Output 01** is	**ON**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐**, D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
	TURN ON	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**ON**
☐	**VERIFY**	MCR sees **D6 RBs: AC** ☐and **DC** ☐	**ON**
	TURN OFF	Power Supply **D6** and set to **0 Amps**	
☐	**VERIFY**	MCR sees on Pet Pg **(PP) D6,** at **0 Amps**	**OFF**
☐	**VERIFY**	MCR sees **D6: AC** ☐and **DC** ☐	**OFF**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

☐ **Check for acceptance of Test of NSRL Critical Device D6 Power Supply's response, to individual Div A and Div B OFF commands with Peer 27 in No Access Mode 24**

1.8 Test of NSRL Critical Device NSRL Plug's response, under power, to Peer 27 moving from Mode 24 (NA NA NA) to Mode 17 (CA CA NA)

	PLACE	Critical Device Switch **(CDS)** in the NSRL Inclusive **(NI) position**	
□	**VERIFY**	**CDS** is in	**NI Posn**
□	**VERIFY**	**Power Supply D6** is	**NO LOTO**
	PLACE	**Peer 27** in Safe Access **(SA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	SWEEP	NSRL **Zones 1, 2 and 3** using **Forced Sweep** from MCR	
□	**VERIFY**	**MCR** sees NSRL **Zn 1** □, **Zn2** □ and **Zn3** □	**SWEPT**
	RESET	Gates **BGE1, BGE2, BGI1** and **BGI2**	
□	**VERIFY**	**MCR** sees gates **BGE1** □, **BGE2** □, **BGI1** □ and **BGI2** □	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
□	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** □ and **Div B** □	**ENABLED**
□	**VERIFY**	MCR sees **Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** □, **LTB** □ and **B6** □	**ENABLED**
□	**VERIFY**	MCR sees **NVal** □ and **NShr** □	**ENABLED**
□	**VERIFY**	MCR sees **NPlug: Div A** □ and **Div B** □ **(after ~20 secs)**	**OUT**
	PLACE	**Peer 27** in Controlled Access **(XA), Mode 17**	
□	**VERIFY**	**MCR** sees **Peer 27** in **XA: CA CA NA**	**MODE 17**
□	**VERIFY**	MCR sees **Z1=Z2PCD: D6AC** □, **D6DC** □ and **NPlg** □	**DISABLED**
□	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** □, **LTB** □ and **B6** □	**ENABLED**
□	**VERIFY**	MCR sees **NVal** □ and **NShr** □	**DISABLED**
□	**VERIFY**	MCR sees **NPlug: Div A** □ and **Div B** □ **(after ~20 secs)**	**IN**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
□	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
□	**VERIFY**	MCR sees **D6AC** □, **D6DC** □ and **NPlg** □	**ENABLED**
□	**VERIFY**	MCR sees **NPlug: Div A** □ and **Div B** □ **(after ~20 secs)**	**OUT**

□ **Check for acceptance of Test of NSRL Critical Device NSRL Plug's response, under power, to Peer 27 moving from Mode 24 (NA NA NA) to Mode 17 (CA CA NA)**

1.9 Test of NSRL Critical Device NSRL Plug's response, to individual Div A and Div B OFF commands with Peer 27 in No Access Mode 24

	PLACE	Critical Device Switch **(CDS)** in the NSRL Inclusive **(NI) position**	
☐	**VERIFY**	**CDS** is in	**NI Posn**
☐	**VERIFY**	**Power Supply D6** is	**NO LOTO**
	PLACE	**Peer 27** in Safe Access **(SA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **SA**	**MODE 2**
	SWEEP	NSRL **Zones 1, 2 and 3** using **Forced Sweep** from MCR	
☐	**VERIFY**	**MCR** sees NSRL **Zn 1** ☐, **Zn2** ☐ and **Zn3** ☐	**SWEPT**
	RESET	Gates **BGE1, BGE2, BGI1** and **BGI2**	
☐	**VERIFY**	**MCR** sees gates **BGE1** ☐, **BGE2** ☐, **BGI1** ☐ and **BGI2** ☐	**RESET**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**
	PLACE	**PEER 27** in No Access **(NA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NPlug: Div A** ☐ and **Div B** ☐ **(after ~20 secs)**	**OUT**
	P&H	**SW S2-A** in **BGI2 gate box,** at gate BGI2	
☐	**VERIFY**	Div A I/O Block **Output 17** is	**OFF**
☐	**VERIFY**	MCR sees **NPlug: Div A** ☐ and **Div B** ☐ **(after ~20 secs)**	**IN**
☐	**VERIFY**	**MCR** sees **Peer 27 still** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1=Z2PCD, NPlug: Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z1=Z2PCD: D6AC** ☐ and **D6DC** ☐	**DISABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	RELEASE	**SW S2-A** in **BGI2 gate box,** at gate BGI2	
☐	**VERIFY**	**Div A** I/O Block **Output 17** is	**ON**
☐	**VERIFY**	MCR sees **NPlug: Div A** ☐ and **Div B** ☐ **(after ~20 secs)**	**OUT**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐, **D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐, **LTB** ☐ and **B6** ☐	**ENABLED**
	P&H	**SW S2-B** in **BGI2 gate box,** at gate BGI2	
☐	**VERIFY**	**Div B** I/O Block **Output 17** is	**OFF**

☐	**VERIFY**	MCR sees **NPlug: Div A** ☐ and **Div B** ☐ **(after ~20 secs)**	**IN**
☐	**VERIFY**	**MCR** sees **Peer 27 still** in **NA**	**MODE 24**
☐	**VERIFY**	MCR sees **Z1=Z2PCD, NPlug: Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z1=Z2PCD: D6AC** ☐ and **D6DC** ☐	**DISABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z1, Z2 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **NVal** ☐ and **NShr** ☐	**ENABLED**
	RELEASE	**SW S2-B** in **BGI2 gate box,** at gate BGI2	
☐	**VERIFY**	**Div B** I/O Block **Output 17** is	**ON**
☐	**VERIFY**	MCR sees **NPlug: Div A** ☐ and **Div B** ☐ **(after ~20 secs)**	**OUT**
☐	**VERIFY**	MCR sees **Z1PCD: RD1D2 Div A** ☐ and **Div B** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z2PCD: D6AC** ☐**, D6DC** ☐ and **NPlg** ☐	**ENABLED**
☐	**VERIFY**	MCR sees **Z3PCD = Z2, Z3 RCDs: TTB** ☐**, LTB** ☐ and **B6** ☐	**ENABLED**
	PLACE	**Peer 27** in Controlled Access **(CA)**	
☐	**VERIFY**	**MCR** sees **Peer 27** in **CA**	**MODE 16**

☐ **Check for acceptance of Test of NSRL Critical Device NSRL Plug's response, to individual Div A and Div B OFF commands with Peer 27 in No Access Mode 24**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: _____/____/_____

TTL: Sign for completion of final testing: _____

Date: _____/_____/_____