PPS NPI Decommissioning

Safety Assurance Test Procedure

This document has been approved by:

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1. Revision History

Rev	Date	Changes
0	1998	Initial issue
1	9/24/2007	Re-write procedure to decommission NPI mode. This certification was formatted from PPS Linac BAS-2 Radiation Certification Procedure # 18-20-73-03.

Purpose

The purpose of this procedure is to demonstrate the correct operation of the Personnel Protection System (PPS) associated with operating the Linac after NPI hardware has been removed. Validation signatures in section 6 of this procedure verify that NPI mode has been decommissioned.

2. Requirements

2.1. Accelerator Requirements

2.1.1. Verify that the 2-29 Security Loop is complete. _____

2.1.2. Verify that the 30-MCC Security Loop is complete. _____

2.1.3. Set the Linac to BSY mode. _____

Initial Tested Items
VAX Local

3. Linac Keybank Interlock Check

3.1. Keybank Test

3.1.1. Operate SET ENTRY on the VAX Accelerator PPS Panel. _____

3.1.2. Verify the following:

[a] Sector 2 keybank releases keys _____

[b] Sector 22 keybank releases keys _____

[c] Sector 24 keybank releases keys _____

[d] Sector 26 keybank releases keys _____

[e] Sector 28 keybank releases keys _____

3.1.3. Time out the Linac. _____

	Initial Tested Items VAX	Local
3.1.4. Verify that the MCC Primary Annunciator LED is lit showing that the PPS 2 - 29 is complete.		_____
3.1.5. Verify the following:		
[a] Sector 2 keybank does not release keys		_____
[b] Sector 22 keybank does not release keys		_____
[c] Sector 24 keybank does not release keys		_____
[d] Sector 26 keybank does not release keys		_____
[e] Sector 28 keybank does not release keys		_____

Initial Tested Items
VAX Local

4. Linac Set Entry Loop

4.1. Linac Set Entry Loop A

4.1.1. Record the current of Loop A (the nominal reading is about 17 mA ± 0.5 mA):

[a] 2-29 A_Loop: ____ mA.
(Linac Set Entry Loop Receiver Chassis in KA02-05(26)). _____

[b] 2-29 A_Loop: ____ mA.
(VAX Linac Analog Status panel). _____

4.1.2. Press **S2** on the back of the Linac Set Entry Loop Transmitter Chassis, and verify the following: _____

[a] LINAC SET ENTRY LOOP displays NOTCMPLT on the VAX ACCELERATOR PPS Panel. _____

[b] **LOOP A LOOP OK** LED is not lit on the Linac Set Entry Loop Receiver Chassis. _____

[c] 2-29 A_Loop: ____ mA.
(Linac Set Entry Loop Receiver Chassis in KA02-05(26)). _____

[d] 2-29 A_Loop: ____ mA.
(VAX Linac Analog Status panel). _____

4.1.3. Attempt to transfer Linac to SET Entry and verify it will not transfer. _____

4.1.4. Release **S2** on the back of the Linac Set Entry Loop Transmitter Chassis, and verify the following: _____

[a] LINAC SET ENTRY LOOP displays COMPLT on the VAX ACCELERATOR PPS Panel. _____

[b] **LOOP A LOOP OK** LED is lit on the Linac Set Entry Loop Receiver Chassis. _____

4.1.5. Release the loop test switch at the back of the Set Entry Loop Transmitter Chassis and observe that the loop current returns to the starting level. _____

Initial Tested Items
VAX Local

4.2. Linac Set Entry Loop B

4.2.1. Record the current of Loop B (the nominal reading is about 17 mA + 0.5 mA):

[a] 2-29 B_Loop: ____ mA.
(Linac Set Entry Loop Receiver Chassis in KA02-05(26)). _____

[b] 2-29 B_Loop: ____ mA.
(VAX Linac Analog Status panel). _____

4.2.2. Press **S3** on the back of the Linac Set Entry Loop Transmitter Chassis, and verify the following: _____

[a] LINAC SET ENTRY LOOP displays NOTCOMPLT on the VAX ACCELERATOR PPS Panel. _____

[b] **LOOP B LOOP OK** LED is not lit on the Linac Set Entry Loop Receiver Chassis. _____

[c] 2-29 B_Loop: ____ mA.
(Linac Set Entry Loop Receiver Chassis in KA02-05(26)). _____

[d] 2-29 B_Loop: ____ mA.
(VAX Linac Analog Status panel). _____

4.2.3. Attempt to transfer Linac to Set Entry and verify it will not transfer. _____

4.2.4. Release **S3** on the back of the Linac Set Entry Loop Transmitter Chassis, and verify the following: _____

[a] LINAC SET ENTRY LOOP displays COMPLT on the VAX ACCELERATOR PPS Panel. _____

[b] **LOOP B LOOP OK** LED is lit on the Linac Set Entry Loop Receiver Chassis. _____

Initial Tested Items
VAX Local

5. Linac Security Loop

5.1. Security Loop Test

5.1.1. Interrupt the Security Loops at each sector by opening a hatch, and verify that the loop current goes to zero (complete the following table). _____

	Open Hatch	Loop A Current (mA)	Loop B Current (mA)	Security Loop Complete
Sector 02				
Sector 22				
Sector 25				

Initial Tested Items
VAX Local

5.2. VVS Permit Redundancy

5.2.1. Complete the following table. _____

Action	VVS 3	VVS 11	VVS 12	VVS 15
1. Push and hold **SHUNT TRIP** pushbutton on PPS-VVS Shutoff Test Panel (125-717) at MCC rack 124, and verify all VVSs **SHUNT** permit NOT present				
2. Release **SHUNT TRIP** pushbutton, verify **SHUNT** Permits ARE present.				
3. Push and hold **UNDERVOLTAGE TRIP** pushbutton on PPS-VVS Shutoff Test Panel (125-717) at MCC rack 124, and verify all VVSs **UNDERVOLTAGE** permits NOT present				
4. Release **UNDERVOLTAGE TRIP** pushbutton, verify **UNDERVOLTAGE** Permits ARE present.				

6. Records and Reports

6.1. Test Person

6.1.1. Test Done by:

Signature _____

Name and title (print) _____

Date _____

6.1.2. Comments

6.2. Controls Test Review

6.2.1. PPS Group Leader Test Approval

Signature _____

Name and title (print) _____

Date _____

6.2.2. Safety System Review Officer Test Approval

Signature _____

Name and title (print) _____

Date _____

Are there any Outstanding Issues required before final signoff?

YES_____ NO_____

If YES, enter items in table 1.

Line Item #	ARTEMIS#	RSWCF #	Reconciled by	Date

Table 1

6.3. ADSO Review

(Required if there are items in Table 1)

6.3.1. ADSO Test Approval

Signature _____

Name and title (print) _____

Date _____

6.3.2. Safety System Review Officer Test Approval

Signature _____

Name and title (print) _____

Date _____

6.3.3. PPS Group Leader Test Approval

Signature _____

Name and title (print) _____

Date _____