PPS Preventive Maintenance Procedure: ESA

This document has been approved by:

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Revision 0
First edition.

Revision 1
Updated procedure from field markups.

1: Introduction

1.1 Purpose

The purpose of this preventive maintenance procedure is to verify that Personnel Protection Systems (PPS) safety devices for ESA are adequately maintained to ensure continued safe and satisfactory operation.

1.2 Scope

This document certifies that the status and control devices for ESA have been inspected and maintained.

2: Applicability

2.0.1 The preventive maintenance procedure should be completed preventiveduring major downtimes.

2.0.2 The Controls Department, PPS Group, is responsible for completing the preventive maintenance procedure.

3: Prerequisite Actions

Initial Items Tested

3.0.1 Verify in the RSWCF Logbook, located in MCC (B005), that all bypasses for ESA have been removed. (If not, proceed to the next step.) _____

3.0.2 If all bypasses have NOT been removed, an authorized person should verify that they do not invalidate the outcome of the procedure and note them here:

_____
_____
_____
_____ _____

3.0.3 The maintenance person will need the following tools:

- Flashlight
- Screw driver
- Voltmeter
- Door knobset tool
- Lubricants
- Cleaning fluid _____

4: AN1 Outer Door Check

4.1 E/E Knob Set

		Maintenance Complete
4.1.1	Inspect, clean and lubricate knob set.	_____
4.1.2	Inspect knob set trip switches for proper adjustment.	_____
4.1.3	Operate the crash bar from inside the Outer Door and verify proper operation.	_____
4.1.4	Operate the knob set from outside the Outer Door and verify proper operation.	_____

4.2 Door Limit Switches

		Maintenance Complete
4.2.1	Inspect and adjust (if necessary) the door limit switches (located on top of the door frame).	_____
4.2.2	Inspect the lever arms (possibly bent or loose).	_____
4.2.3	Check for loose wiring (termination points and strain relief).	_____

4.3 AN1 Door

		Maintenance Complete
4.3.1	Lubricate the door hinges.	_____
4.3.2	Inspect the door to ensure correct alignment and closure.	_____

5: AN1 Inner Gate Check

5.1 Inner Gate Limit Switches

		Maintenance Complete
5.1.1	Inspect and adjust (if necessary) the door limit switches.	_____
5.1.2	Inspect the lever arms (possibly bent or loose).	_____
5.1.3	Check for loose wiring (termination points and strain relief).	_____

5.2 AN1 Inner Gate

		Maintenance Complete
5.2.1	Lubricate the door hinges.	_____
5.2.2	Inspect the door to ensure correct alignment and closure.	_____

5.3 ESA Emergency Beam Shutoff Button Checks

5.3.1 Complete the following table:

Action	E/O #1 SW	E/O #2 NW	E/O #3 SE	E/O #4 NE
1. Verify that the pilot lights on the Emergency Off box are lit.	_____	_____	_____	_____
2. Verify that the Emergency Beam Shutoff sign is in place.	_____	_____	_____	_____
3. Verify that the button action is smooth.	_____	_____	_____	_____
4. Open the button box cover, place a voltmeter across the contact blocks, operate the switch and verify that it is operating correctly.	_____	_____	_____	_____
5. Check the wiring termination points for shorts, loose connections and proper strain relief.	_____	_____	_____	_____
6. Inspect contact block for radiation damage, loose connections or corrosion.	_____	_____	_____	_____

6: Big Door Check

6.1 Door Limit Switches

		Maintenance Complete
6.1.1	Inspect and adjust (if necessary) the door limit switches (located on the side of the door frame towards AN4).	_____
6.1.2	Inspect the lever arms (possibly bent or loose).	_____

7: AN3 Outer Door Check

7.1 Knob Set

		Maintenance Complete
7.1.1	Inspect, clean and lubricate knob set.	_____
7.1.2	Inspect knob set trip switches for proper adjustment.	_____
7.1.3	Operate the knob set from inside the Outer Door and verify proper operation.	_____
7.1.4	Operate the knob set from outside the Outer Door and verify proper operation.	_____
7.1.5	Set ESA to **CONTROLLED ACCESS**, release a keybank key, and obtain a door release. Check the electric strike for proper operation.	_____
7.1.6	Inspect annunciator panel lamps for proper operation.	_____

7.2 Door Limit Switches

		Maintenance Complete
7.2.1	Inspect and adjust (if necessary) the door limit switches (located on top of the door frame).	_____
7.2.2	Inspect the lever arms (possibly bent or loose).	_____
7.2.3	Check for loose wiring (termination points and strain relief).	_____

7.3 AN3 Door

		Maintenance Complete
7.3.1	Lubricate the door hinges.	_____
7.3.2	Inspect the door to ensure correct alignment and closure.	_____

8: AN3 Keybank Check

		Maintenance Complete
8.0.1	Inspect the lockout cam pin hub for alignment and tightness.	_____
8.0.2	Inspect the keysense pin hub for alignment and tightness.	_____
8.0.3	Clean, adjust and lubricate the keybank.	_____
8.0.4	Check the wiring termination points for shorts and loose connections.	_____
8.0.5	Inspect all keys for cracks and bends.	_____
8.0.6	Inspect the microswitches for correct adjustment.	_____
8.0.7	Verify that the Emergency Key Release break-away glass and hammer are in place.	_____

8.0.8 Set ESA to **CONTROLLED ACCESS** and verify the proper functioning of the keybank. _____

8.0.9 Check the key release for each keybank key. _____

9: AN3 Inner Gate Check

9.1 Inner Gate Limit Switches

Maintenance Complete

9.1.1 Inspect and adjust (if necessary) the door limit switches. _____

9.1.2 Inspect the lever arms (possibly bent or loose). _____

9.1.3 Check for loose wiring (termination points and strain relief). _____

9.2 AN3 Inner Gate

Maintenance Complete

9.2.1 Lubricate the door hinges. _____

9.2.2 Inspect the door to ensure correct alignment and closure. _____

10: AN4 Outer Door Check

10.1 E/E Knob Set

	Maintenance Complete
10.1.1 Inspect, clean and lubricate knob set.	_____
10.1.2 Inspect knob set trip switches for proper adjustment.	_____
10.1.3 Operate the knob set from inside the Outer Door and verify proper operation.	_____
10.1.4 Operate the knob set from outside the Outer Door and verify proper operation.	_____
10.1.5 Set ESA to **CONTROLLED ACCESS**, release a keybank key, and obtain a door release. Check the electric strike for proper operation.	_____

10.2 Door Limit Switches

	Maintenance Complete
10.2.1 Inspect and adjust (if necessary) the door limit switches (located on top of the door frame).	_____
10.2.2 Inspect the lever arms (possibly bent or loose).	_____
10.2.3 Check for loose wiring (termination points and strain relief).	_____

10.3 AN4 Door

	Maintenance Complete
10.3.1 Lubricate the door hinges.	_____
10.3.2 Inspect the door to ensure correct alignment and closure.	_____

11: AN4 Keybank Check

		Maintenance Complete
11.0.1	Inspect the lockout cam pin hub for alignment and tightness.	_____
11.0.2	Inspect the keysense pin hub for alignment and tightness.	_____
11.0.3	Clean, adjust and lubricate the keybank.	_____
11.0.4	Check the wiring termination points for shorts and loose connections.	_____
11.0.5	Inspect all keys for cracks and bends.	_____
11.0.6	Inspect the microswitches for correct adjustment.	_____
11.0.7	Verify that the Emergency Key Release break-away glass and hammer are in place.	_____
11.0.8	Set ESA to **CONTROLLED ACCESS** and verify the proper functioning of the keybank.	_____
11.0.9	Check the key release for each keybank key.	_____

12: AN4 Inner Gate Check

12.1 Inner Gate Limit Switches

	Maintenance Complete
12.1.1 Inspect and adjust (if necessary) the door limit switches.	_____
12.1.2 Inspect the lever arms (possibly bent or loose).	_____
12.1.3 Check for loose wiring (termination points and strain relief).	_____

12.2 AN4 Inner Gate

	Maintenance Complete
12.2.1 Lubricate the door hinges.	_____
12.2.2 Inspect the door to ensure correct alignment and closure.	_____

13: Beam Dump East Door Check

13.1 Door Limit Switches

	Maintenance Complete
13.1.1 Inspect and adjust (if necessary) the door limit switches (located on top of the door frame).	_____
13.1.2 Inspect the lever arms (possibly bent or loose).	_____
13.1.3 Check for loose wiring (termination points and strain relief).	_____

13.2 Beam Dump East Door

Maintenance Complete

13.2.1 Lubricate the door hinges. _____

13.2.2 Inspect the door to ensure correct alignment and closure. _____

13.2.3 Inspect annunciator panel lamps for proper operation. _____

13.3 BDE Emergency Beam Shutoff Button Checks

13.3.1 Complete the following table:

Action	E/O #1
1. Verify that the pilot lights on the Emergency Off box are lit.	_____
2. Verify that the Emergency Beam Shutoff sign is in place.	_____
3. Verify that the button action is smooth.	_____
4. Open the button box cover, place a voltmeter across the contact blocks, operate the switch and verify that it is operating correctly.	_____
5. Check the wiring termination points for shorts, loose connections and proper strain relief.	_____
6. Inspect contact block for radiation damage, loose connections or corrosion.	_____

14: West Trench Check

14.1 South Door Hardware

	Maintenance Complete
14.1.1 Clean and lubricate the door knobset.	_____
14.1.2 Lubricate the door hinges.	_____
14.1.3 Check the door for proper alignment and closure.	_____
14.1.4 Inspect door release LED for proper operation.	_____
14.1.5 Inspect annunciator panel for proper operation.	_____

14.2 South Door Limit Switches

	Maintenance Complete
14.2.1 Inspect and adjust (if necessary) the door limit switches.	_____
14.2.2 Inspect the lever arms (possibly bent or loose).	_____
14.2.3 Check for loose wiring (termination points and strain relief).	_____

14.3 West Trench Emergency Beam Shutoff Pull Cord

14.3.1 Check the pull cord for proper operation.

14.4 North Door Hardware

	Maintenance Complete
14.4.1 Clean and lubricate the door knobset.	_____
14.4.2 Lubricate the door hinges.	_____
14.4.3 Check the door for proper alignment and closure.	_____

14.5 North Door Limit Switches

	Maintenance Complete
14.5.1 Inspect and adjust (if necessary) the door limit switches.	_____
14.5.2 Inspect the lever arms (possibly bent or loose).	_____
14.5.3 Check for loose wiring (termination points and strain relief).	_____

15: Central Trench Check

15.1 South Door Hardware

	Maintenance Complete
15.1.1 Clean and lubricate the door knobset.	_____
15.1.2 Lubricate the door hinges.	_____
15.1.3 Check the door for proper alignment and closure.	_____
15.1.4 Inspect door release LED for proper operation.	_____
15.1.5 Inspect annunciator panel for proper operation.	_____

15.2 South Door Limit Switches

	Maintenance Complete
15.2.1 Inspect and adjust (if necessary) the door limit switches.	_____
15.2.2 Inspect the lever arms (possibly bent or loose).	_____
15.2.3 Check for loose wiring (termination points and strain relief).	_____

15.3 Central Trench Emergency Beam Shutoff

15.3.1 Check the pull cord for proper operation.

15.4 North Door Hardware

	Maintenance Complete
15.4.1 Clean and lubricate the door knobset.	_____
15.4.2 Lubricate the door hinges.	_____
15.4.3 Check the door for proper alignment and closure.	_____

15.5 North Door Limit Switches

	Maintenance Complete
15.5.1 Inspect and adjust (if necessary) the door limit switches.	_____
15.5.2 Inspect the lever arms (possibly bent or loose).	_____
15.5.3 Check for loose wiring (termination points and strain relief).	_____

16: East Trench Check

16.1 South Door Hardware

	Maintenance Complete
16.1.1 Clean and lubricate the door knobset.	_____
16.1.2 Lubricate the door hinges.	_____
16.1.3 Check the door for proper alignment and closure.	_____
16.1.4 Inspect door release LED for proper operation.	_____
16.1.5 Inspect annunciator panel for proper operation.	_____

16.2 South Door Limit Switches

	Maintenance Complete
16.2.1 Inspect and adjust (if necessary) the door limit switches.	_____
16.2.2 Inspect the lever arms (possibly bent or loose).	_____
16.2.3 Check for loose wiring (termination points and strain relief).	_____

16.3 East Trench Emergency Beam Shutoff

16.3.1 Check the pull cord for proper operation.

16.4 North Door Hardware

	Maintenance Complete
16.4.1 Clean and lubricate the door knobset.	_____
16.4.2 Lubricate the door hinges.	_____
16.4.3 Check the door for proper alignment and closure.	_____

16.5 North Door Limit Switches

	Maintenance Complete
16.5.1 Inspect and adjust (if necessary) the door limit switches.	_____
16.5.2 Inspect the lever arms (possibly bent or loose).	_____
16.5.3 Check for loose wiring (termination points and strain relief).	_____

17: Records and Reports

17.1 Maintenance Person

17.1.1 **Comments**

17.1.2 **Completed by:**

Signature of Maintenance Person _____

Name and title (print) _____

Date _____

17.1.3 The maintenance person verbally notifies the PPS Group Leader that the PPS preventive maintenance for End Station A is complete.

17.2 Controls Department Approval

Signature _____

Name and title (print) _____

Date _____

17.3 PPS Follow-up

The PPS Group Leader files the approved preventive maintenance procedure in the designated PPS file area.