Beam Line: SST

Test Date: 2/2/18

EPS Engineer: Garrett Bischof

BL Group Leader: Cherno Jaye, Conan Weiland

Pre-test setup:

Connect PPS interface test box at beam line EPS/PPS interface connector.

The Beam Line Master Spreadsheet contains a comprehensive list of all EPS related signals. As this test plan is executed note the results in the "test results" column of this spreadsheet.

Test Set 1: Vacuum

Vacuum Section:

Starting conditions: pressure at or below acceptable limits, GVs open.

Simulate pressure rise (toward poor vacuum) by disabling the vacuum gauge controller channel. Ensure EPICS PVs enter proper alarm states, photon shutter closes[1] and vacuum section is isolated. Two local gate valves and one (or more, if it is required to isolate upstream section, e.g. section branching) upstream gate valve close. Record results for the following:

EPICS PV Alarm

EPS fault

Photon Shutter closes

GVx closes

GVy close:

GVz closes

Attempt to open the front end shutter and gate valves through EPICS.

Photon shutter and gate valves cannot be opened through EPICS (1)

Enable vacuum gauge controller and ensure EPICS alarms clear. Open gate valves and photon shutter through EPICS.

[1] if the intensity of the beam in the section cannot cause damage to its valves, poor vacuum doesn't have to cause shutter close

Photon shutter and gate valves can be opened through EPICS (2)

Gauge name:	EPS fault:			(1)	(2)
	Shutter:	d/s GV:	u/s GV:		
XF:07IDA-VA:0{Msk:1-CCG:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Msk:1-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:0{Mir:L1-CCG:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Mir:L1-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:0{Mir:M1-CCG:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Mir:M1-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:0{Slt:WB-CCG:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Slt:WB-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:1{Mir:L2-CCG:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDA-VA:1{Mir:L2-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:1{Mono:DCM-CCG:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{Mono:DCM-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:1{FS:3-CCG:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{FS:3-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:1{NanoBPM-CCG:1}	Shutter FE 1 2	Good	Good	Good	Good
Xf:07IDB-VA:1{NanoBPM-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:1{Mir:L3-CCG:1}	Shutter 2 3 5	Good	Good	Good	Good
XF:07IDB-VA:1{Mir:L3-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:1{Mir:L4-CCG:1}	Shutter 2 3 5	Good	Good	Good	Good
XF:07IDB-VA:1{Mir:L4-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:2{FS:6-CCG:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:6-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:2{Mono:PGM-CCG:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDB-VA:2{Mono:PGM-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:2{FS:7-CCG:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:7-TCG:1}	-	-	-	Good	Good
XF:07IDA-VA:2{FS:8-CCG:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:8-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{Mir:M4A-CCG:1}	Shutter 4	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4A-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{BT:2-CCG:1}	Shutter 4 5 6	Good	Good	Good	Good
XF:07IDB-VA:3{BT:2-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:4{FS:9-CCG:1}	Shutter 4 5	Good	Good	Good	Good
XF:07IDB-VA:4{FS:9-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{FS:10-CCG:1}	Shutter 4 6	Good	Good	Good	Good
XF:07IDB-VA:3{FS:10-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{BT:3-CCG:1}	Shutter 6	Good	Good	Good	Good
XF:07IDB-VA:3{BT:3-TCG:1}	-	-	-	Good	Good

XF:07IDB-VA:3{Mir:M4B-CCG:1}	Shutter 6	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4B-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{FS:12-CCG:1}	Shutter FE 4 7	Good	Good	Good	Good
XF:07IDB-VA:3{FS:12-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{Mir:M4C-CCG:1}	Shutter 4 7 8	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4C-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{Mir:M5A-CCG:1}	Shutter 7 8	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M5A-TCG:1}	-	-	-	Good	Good
XF:07IDB-VA:3{FS:14-CCG:1}	Shutter 8	Good	Good	Good	Good
XF:07IDB-VA:3{FS:14-TCG:1}	-	-	-	Good	Good

Simulate pressure rise (toward poor vacuum) by disabling the vacuum pump controller channel. Ensure EPICS PVs enter proper alarm states, photon shutter closes[2] and vacuum section is isolated. Two local gate valves and one upstream (or more, if it is required to isolate upstream section, e.g. section branching) gate valve close. Record results for the following:

EPICS PV Alarm

EPS fault

Photon Shutter closes

GVx closes

GVy closes

GVz closes

Attempt to open the front end shutter and gate valves through EPICS.

Photon shutter and gate valves cannot be opened through EPICS (1)

Enable vacuum pump controller and ensure EPICS alarms clear. Open gate valves and photon shutter through EPICS.

Photon shutter and gate valves can be opened through EPICS (2)

Repeat for each vacuum section on beam line.

For the sections adjacent to Front end and End Station, also simulate poor vacuum signal from remote systems.

[2] if the intensity of the beam in the section cannot cause damage to its valves, poor vacuum doesn't have to cause shutter close

EPS vacuum fault:	Front end:	End station:
Photon Shutter closes	Good	NA
GV2 closes	Good	NA
Mir:L1-GV1 closes	Good	NA
GVz closes	NA	NA
Shutter and GVs cannot be opened	Good	NA

Simulate a poor vacuum EPS signal to front end, GV2 and Shutter should close, and not be allowed to open.

EPS vacuum fault:	Front end:
Photon Shutter closes	Good
GV2 closes	Good
Shutter and GVs cannot be opened	Good

Gauge name:	EPS fault:			(1)	(2)
	Shutter:	d/s GV:	u/s GV:		
XF:07IDA-VA:0{Msk:1-IP:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Msk:1-IP:2}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Mir:L1-IP:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-Va:0{Mir:M1-IP:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{BS:WB-IP:1}	Shutter FE	Good	Good	Good	Good
XF:07IDA-VA:0{Slt:WB-IP:1}	Shuter FE	Good	Good	Good	Good
XF:07IDA-VA:1{Mir:L2-IP:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDA-VA:1{FS:2-IP:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{Mono:DCM-IP:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{Mono:DCM-IP:2}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{FS:3-IP:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{NanoBPM-IP:1}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{NanoBPM-IP:2}	Shutter FE 1	Good	Good	Good	Good
XF:07IDB-VA:1{Mir:L3-IP:1}	Shutter 1 2 3	Good	Good	Good	Good
XF:07IDB-VA:1{Mir:L3-IP:2}	Shutter 1 2 3	Good	Good	Good	Good
XF:07IDB-VA:1{Mir:L4-IP:1}	Shutter 2 3	Good	Good	Good	Good
XF:07IDA-VA:2{FS:6-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:6-IP:2}	Shutter FE 4	Good	Good	Good	Good
XF:07IDB-VA:2{Mono:PGM-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:7-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDA-VA:2{FS:8-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4A-IP:1}	Shutter 4	Good	Good	Good	Good
XF:07IDB-VA:3{BT:2-IP:1}	Shutter 4 6	Good	Good	Good	Good
XF:07IDB-VA:3{BT:2-IP:2}	Shutter 4 6	Good	Good	Good	Good
XF:07IDB-VA:4{FS:9-IP:1}	Shutter 4 5	Good	Good	Good	Good
XF:07IDB-VA:3{FS:10-IP:1}	Shutter 4 6	Good	Good	Good	Good
XF:07IDB-VA:3{BT:3-IP:1}	Shutter 6	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4B-IP:1}	Shutter 6	Good	Good	Good	Good
XF:07IDB-VA:3{FS:12-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDB-VA:3{BT:4-IP:1}	Shutter FE 4	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M4C-IP:1}	Shutter 4 7	Good	Good	Good	Good
XF:07IDB-VA:3{FS:13-IP:1}	Shutter 4 7	Good	Good	Good	Good
XF:07IDB-VA:3{BT:5-IP:1}	Shutter 4 7 8	Good	Good	Good	Good
XF:07IDB-VA:3{Mir:M5A-IP:1}	Shutter 7 8	Good	Good	Good	Good
XF:07IDB-VA:3{FS:14-IP:1}	Shutter 8	Good	Good	Good	Good

Test Set 2: Water flow

Water flow Section:

Record initial flow through section with all valves fully open.

Slowly close supply valve and record the LOW and LOW LOW PV Alarm levels.

If the channel is associated with an EPS actionXFD-EPOS, also register the flow at which the EPS fault occurs. Ensure cable disconnection results in EPS action.

Repeat for each water circuit on beam line.

Sensor name:	Nominal flow:	LOW:	LOLO:	EPS:
XF:07IDA-PPS{DI}F:1-I	3.92	-	-	No EPS action
XF:07IDA -PPS{DI}F:2-I	4.0	-	-	No EPS action
XF:07IDA -PPS{DI}F:3-I	0.59	-	-	No EPS action
XF: 07IDA -PPS{DI}F:4-I	0.59	-	-	No EPS action
XF: 07IDA -UT{DI}F:1-I	1.13	1	0.8	Shutter FE closed
XF: 07IDA -UT{DI}F:2-I	1.43	1.3	1	Shutter FE closed
XF: 07IDA -UT{DI}F:3-I	1.51	1.3	1	Shutter FE closed
XF: 07IDA -UT{DI}F:4-I	1.02	0.9	0.8	Shutter FE closed
XF: 07IDA -UT{DI}F:5-I	1.04	0.9	0.8	Shutter FE closed
XF: 07IDA -UT{DI}F:6-I	0.90	0.88	0.8	Shutter FE closed
XF: 07IDA -UT{DI}F:7-I	0.96	0.88	0.8	Shutter FE closed
XF: 07IDA -UT{DI}F:8-I	16.6	-	-	No EPS action
XF:07IDB-PPS{DI}F:1-I	0.93	-	-	No EPS action
XF: 07IDB -PPS{DI}F:2-I	0.95	-	-	No EPS action
XF: 07IDB -PPS{DI}F:3-I	0.95	-	-	No EPS action
XF: 07IDB -PPS{DI}F:4-I	0.97	-	-	No EPS action
XF: 07IDB -UT{DI}F:1-I	0.50	0.4	0.3	Shutter 4 closed
XF: 07IDB -UT{DI}F:2-I	0.82	0.7	0.5	Shutter 4 closed
XF: 07IDB -UT{DI}F:3-I	0.90	0.75	0.5	Shutter 4 closed
XF: 07IDB -UT{DI}F:4-I	0.48	0.4	0.3	Shutter 4 closed
XF: 07IDB -UT{DI}F:5-I	0.49	0.4	0.3	Shutter 4 closed
XF: 07IDB -UT{DI}F:6-I	0.32	0.3	0.25	Shutter 1 closed

Test Set 3: Thermal

For each temperature transducer ensure the temperature measurement reports expected value.

Attach an appropriate adaptor and transducer simulator to the temperature input of the EPS system (remote IO chassis or Armor Block). Raise the temperature above each of the HI and HIHI PV alarm limits and ensure the alarm is reported. If the transducer is associated with an EPS interlock, continue to raise the temperature until the EPS trip level is exceeded. Ensure the appropriate EPS mitigation process occurs. Ensure channel cable disconnection results in EPS action.

Type K Thermocouples

Sensor name:	Temperature:	HI:	HIHI:	EPS Action:
XF:07IDA-OP{Msk:1}T:Top	29.5	60	80	Shutter FE closed
XF:07IDA-OP{Msk:1}T:Bot	28.8	60	80	Shutter FE closed
XF:07IDA-OP{Mir:L1}T:Msk	26.4	80	100	Shutter FE closed
XF:07IDA-OP{Mir:1}T:Msk	28.9	80	100	Shutter FE closed
XF:07IDA-OP{BS:WB}T:In	26.0	70	100	Shutter FE closed
XF:07IDA-OP{BS:WB}T:Out	25.7	70	100	Shutter FE closed
XF:07IDA-OP{BS:WB}T:Msk	26.0	50	80	Shutter FE closed
XF:07IDA-OP{Slt:WB1}T:Top	28.7	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB1}T:Bot	28.9	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB1}T:In1	29.0	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB1}T:In2	29.1	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB1}T:Out	26.4	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB2}T:Top	29.0	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB2}T:Bot	29.1	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB2}T:In	22.9	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB2}T:Out1	28.8	60	80	Shutter FE closed
XF:07IDA-OP{Slt:WB2}T:Out2	29.0	60	80	Shutter FE closed
XF:07IDA-OP{Msk:2}T:Msk	28.0	80	100	Shutter FE closed
XF:07IDA-OP{Mir:L2}T:Top	29.0	40	50	Shutter FE closed
XF:07IDA-OP{Mir:L2}T:Bot	28.7	40	50	Shutter FE closed
XF:07IDA-OP{Mir:L2}T:In	29.0	40	50	Shutter FE closed
XF:07IDA-OP{Msk:L2}T:Msk	28.6	60	80	Shutter FE closed
XF:07IDA-OP{Mir:L2}T:Out	28.9	40	50	Shutter FE closed
XF:07IDA-OP{FS:2}T	28.9	80	100	Shutter FE closed
XF:07IDA-OP{FS:6}T	28.7	80	100	Shutter FE closed
XF:07IDA-OP{Mono:PGM}T:Grg	28.7	40	50	Shutter 4 closed
XF:07IDA-OP{Mono:PGM}T:1200	28.4	-	-	Monitoring only
XF:07IDA-OP{Mono:PGM}T:600	28.8	-	-	Monitoring only

XF:07IDA-OP{Mono:PGM}T:250	28.5	-	-	Monitoring only
XF:07IDA-OP{Mir:2}T:Mir	27.0	40	50	Shutter 4 closed
XF:07IDA-OP{Mir:3}T:1	27.0	30	40	Shutter 4 closed
XF:07IDA-OP{Mir:3}T:2	26.2	30	40	Shutter 4 closed
XF:07IDA-OP{FS:7}T:In	28.6	30	50	Shutter 4 closed
XF:07IDA-OP{FS:7}T:Out	28.9	30	50	Shutter 4 closed
XF:07IDA-OP{FS:7}T	28.3	30	50	Shutter 4 closed
XF:07IDA-OP{BS:PB}T	27.9	30	50	Shutter 1 closed
XF:07IDA-OP{FS:7}T:Dwn	24.8	30	50	Shutter 4 closed
XF:07IDA-OP{Msk:4}T:Msk	28.6	80	100	FE Shutter closed
XF:07IDA-OP{Msk:3}T:Msk	28.5	80	100	Shutter 4 closed
XF:07IDA-OP{Mono:DCM}T:Crys1_111	23.0	-150	-125	Shutter 1 closed
XF:07IDA-OP{Mono:DCM}T:Crys1_220	23.1	-150	-125	Shutter 1 closed
XF:07IDA-OP{Mono:DCM}T:Crys1_66	23.0	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys2_111	23.9	-150	-125	Shutter 1 closed
XF:07IDA-OP{Mono:DCM}T:Crys2_220	23.5	-150	-125	Shutter 1 closed
XF:07IDA-OP{Mono:DCM}T:Crys2_66	23.6	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys1_AxRoll	23.3	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys2_AxPerp	23.8	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys2_AxPara	23.6	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys2_AxPitch	24.6	-	-	Monitoring only
XF:07IDA-OP{Mono:DCM}T:Crys2_AxRoll	24.9	-	-	Monitoring only

RTD (Pt 100)

Sensor name:	Temperature:	HI:	HIHI:	EPS:
XF: 07IDA-PU{PCW}T:Supply-I	13.4	-	-	No EPS action
XF: 07IDA-PU{PCW}T:Return-I	17.2	-	-	No EPS action
XF: 07IDA-UT{DI}T:Supply-I	28.8	-	-	No EPS action
XF: 07IDA-UT{DI}T:Return-I	28.6	-	-	No EPS action

Test Set 4: EPS/PPS interface

For the primary Photon Shutter:

Front End: If *FRONT END ENABLE STATUS* and *FOE SECURE* and not *USER INTERLOCK* command the front end shutter to open.

Front end opens and ***FRONT END OPEN STATUS*** = OPEN: **Good**

Command the front end shutter to close.

Front end closes and ***FRONT END OPEN STATUS*** = CLOSED: **Good**

With the front end open force a user interlock.

Front end closes and ***FRONT END OPEN STATUS*** = CLOSED: **Good**

Attempt to open the front end shutter through EPICS while not all gate valves in white-beam region down to next secondary shutter are open.

Front end cannot be opened through EPICS: **Good**

For each secondary photon shutter:

If PHOTON SHUTTER x ENABLE STATUS = 1 (ABILITY TO OPEN) and ESEE x SECURE command the shutter to open.

Shutter opens and **PHOTON SHUTTER x *OPEN STATUS*** = OPEN **Good**

Command the shutter to close.

Shutter closes and **PHOTON SHUTTER x *OPEN STATUS*** = CLOSED **Good**

Attempt to open the shutter through EPICS while not all gate valves in white-beam region downstream the shutter are open.

Shutter cannot be opened through EPICS: **Good**

Prepared by:

X

Garrett Bischof
Document Preparer

Approved by:

X

Richard Farnsworth
Controls Group Leader

X

Cherno Jaye
Appropriate Beamline Group Leader

X

Conan Weiland
Appropriate Beamline Group Leader

The EPS system for vacuum sections 5, 7, 9, 14, 17, 25, and 29 is configured in a non-standard manner due to the lack of compatible pressure gauging in these vacuum sections. The following configuration and controls are in place to protect beamline equipment and reduce the risk of vacuum error:

- Vacuum Section 5: GV 4A is a manual valve which can isolate VS5 from the monochromator chamber. The valve will be kept open except for maintenance and/or access reasons, so that VS5 remains a contiguous vacuum section. GV 4A is in the GV 2 protection circuit.
- Vacuum Section 7: GV 7 is fixed in the open position with a 24 V DC power supply, so that VS7 cannot be isolated from VS6 during normal operations. Effectively these two vacuum sections now behave as a single vacuum section. GV7 is only used for maintenance and/or access reasons.
- Vacuum Section 9: Pressure information is read from the ion pump controller in this section, which will be interlocked such that GVs 9 and 10 will close in case of a vacuum accident. Additionally, a work instruction (NSLSII-7ID-WIN-003) is in place for the proper venting and pump down of this section. 6V10 must be open, to open 6V11. 6V9 must be open, to open 6V8.
- Vacuum Section 14: GV 14A is a manual valve which can isolate VS14 from the monochromator chamber. The valve will be kept open except for maintenance and/or access reasons, so that VS5 remains a contiguous vacuum section. GV 4A is in the GV 2 protection circuit.
- Vacuum Section 17: GV 18 is fixed in the open position with a 24 V DC power supply, so that VS17 cannot be isolated from VS18 during normal operations. Effectively these two vacuum sections now behave as a single vacuum section. GV18 is only used for maintenance and/or access reasons.
- Vacuum Section 25: Pressure information is read from the ion pump controller in this section, which will be interlocked such that GVs 26 and 28 will close in case of a vacuum accident. Additionally, GV 27 is fixed in the open position with a 24 V DC power supply, so that VS 25 cannot be isolated from VS 24 during normal operations. Effectively these two vacuum sections now behave as a single vacuum section. GV27 is only used for maintenance and/or access reasons. GV 27 will also be used to isolate the future RSoXS experimental station after installation.
- Vacuum Section 29: GVs 31 and 32 will be interlocked with GVs 31A and 31B, so that GVs 31 and/or GV 32 can only be open if both GVs 31A and 31B are open. Additionally, a work instruction (NSLSII-7ID-WIN-002) is in place for the proper venting and pump down of this section.

The SST Lead beamline scientists approve of this configuration for the EPS system.

X

Conan Weiland
SST Lead Beamline Scientist

X

Cherno Jaye
SST Lead Beamline Scientist

NSLS-II
NATIONAL SYNCHROTRON LIGHT SOURCE II

Beamline EPS Acceptance Testing

Rev Date: 09/16/2015
Author: Barrett Clay
Approved: 09/16/2015

Title	Name	Approval Date
Controls Infrastructure Group Leader	Ruslan Kadyrov	09/16/2015
ES&H Operations Manager	Lori Stiegler	09/16/2015
Quality Assurance Engineer	Joseph Zipper	09/16/2015

Serial No	Part No	Part Rev	ECN	Rev	ECN	Rev
	Beamline: 7-ID SST					
Deviation & Waiver: _____						

OP	Description	Name/Life #	Date	DR
10	Follow the ES&H and Personal Protective Equipment Requirements for the area.	Garrett Bischof 25835	2/2/18	
20	Verify measuring and test equipment used for this procedure contains a valid calibration label in accordance with NSLS-II Calibration Procedure PS-QAP-0901, where applicable. The technician is responsible for notifying the technical supervisor and/or the cognizant engineer of any discrepancies occurring during the performance of this procedure. All discrepancies shall be identified and reported in accordance with NSLS-II Discrepancy Reporting Procedure PS-QAP-0002.	Garrett Bischof 25835	2/2/18	
30	BEAMLINE INFORMATION - This step shall be performed by the cognizant EPS Engineer. A) Record the relevant Beamline name on this sheet, in the box for "Part No". B) Review this entire traveler and write in the relevant drawing, software, and procedure numbers where required	Garrett Bischof 25835	2/2/18	
40	INSTALLATION VERIFICATION A) List the relevant drawing(s): Drawing No.: LT-EL-BL-EI-EPS-1070-96 Rev. No.: A Drawing No.: _____ Rev. No.: _____ B) Verify the following items are acceptable: ___System layout configured per drawing(s) ___System Labeled / Tagged	Garrett Bischof 25835	2/5/18	

OP	Description	Name/Life #	Date	DR
50	SOFTWARE CONFIGURATION A) Download PLC software to controller and verify it was accepted by the controller. B) Record the software part number: Part No.: LT-EL-BL-EI-EPS-1070-70 Rev. No.: A	BARRETT BISCHOF 25835	2/5/18	
60	ACCEPTANCE TESTING A) List relevant testing procedure Procedure No.: PS-R-XFD-EPS CHK-001 Rev. No.: 1 B) Verify acceptable completion of test procedure C) Attach test report to this traveler	BARRETT BISCHOF 25835	2/2/18	
65	WATER LEAK DETECTION SYSTEM TEST Verify water leak detection system, as designed for this beamline, functions correctly.	BARRETT BISCHOF 25835	2/4/18	
70	Verify All Traveler Operations Complete	BARRETT BISCHOF 25835	2/4/18	
80	REVISION HISTORY (This step is informational and does not require signoff) Rev - Description - Date A First Release 8/27/2014 B OP#65 added 9/16/15 Joe Delong removed as approver Ruslan Kadyrov added as approver			