

<u>Title</u>	<u>Name</u>	<u>Approval Date</u>
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: <u>CSX 2310</u>					
Deviation & Waiver: _____						

OP	Description	Name/Life #	Date	DR
10	Follow the ES&H and Personal Protective Equipment Requirements for the area.	<i>garrett bischof</i> 25835	<i>9/24/18</i>	
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.	<i>garrett bischof</i> 25835	<i>9/24/18</i>	
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.	<i>garrett bischof</i> 25835	<i>9/24/18</i>	
40	INSTALLATION VERIFICATION  A) List the relevant drawing(s): <u>LT-EL-BL-E1-EPS-1230-95</u> Drawing No.: _____ Rev. No.: <u>B</u> Drawing No.: _____ Rev. No.: _____  B) Verify the following items are acceptable:  <i>JZ</i> System layout configured per drawing(s) <i>JZ</i> System Labeled / Tagged	<i>garrett bischof</i> 25835	<i>9/24/18</i>	



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: <i>LT-EL-BL-E1-EPS-1230-70</i> Part No.: _____ Rev. No.: <i>R</i>	<i>garrett bischof</i> <i>25835</i>	<i>9/24/18</i>	
60	ACCEPTANCE TESTING A) List relevant testing procedure <i>PS-R-XFP-EPS-CHK-001</i> Procedure No.: _____ Rev. No.: <i>1</i> B) Verify acceptable completion of test procedure C) Attach test report to this traveler	<i>garrett bischof</i> <i>25835</i>	<i>9/24/18</i>	
65	WATER LEAK DETECTION SYSTEM TEST <i>N/A</i> Verify water leak detection system, as designed for this beamline, functions correctly.	<i>garrett bischof</i> <i>25835</i>	<i>9/24/18</i>	
70	Verify All Traveler Operations Complete	<i>garrett bischof</i> <i>25835</i>	<i>9/24/19</i>	
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			



<b>Brookhaven National Laboratory/ Photon Sciences Directorate</b>			
<b>Subject:</b>	<b>Beamline Equipment Protection System Test Checklist</b>		
<b>Number:</b>	<b>PS-R-XFP-EPS-CHK-001</b>	<b>Revision:</b>	<b>1</b>
		<b>Effective:</b>	<b>8/19/14</b>
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**Beam Line: CSX**

**Test Date: 9/18/18**

**EPS Engineer: Garrett Bischof**

**BL Group Leader: Wen Hu**

**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, ion pump controller channel. Ensure EPICS PVs enter proper alarm states, photon shutter closes<sup>1</sup> 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.**

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<sup>1</sup> if the intensity of the beam in the section cannot cause damage to its valves, poor vacuum doesn't have to cause shutter close

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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.**

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:23ID1-VA{Dif:Diag-CCG:1}	NA	Good	NA	Good	Good
XF:23ID1-VA{Dif:Diag-TCG:1}	NA	-	-	Good	Good
XF:23ID1-VA{Dif:Diag-IP:1}	NA	Good	NA	Good	Good
XF:23ID1-VA{Holo:1-CCG:1}	NA	NA	Good	Good	Good
XF:23ID1-VA{Holo:1-TCG:1}	NA	-	-	Good	Good
XF:23ID1-VA{Holo:1-TMP:1}	NA	NA	Good	Good	Good
XF:23ID1-VA{Holo:1-CCG:2}	NA	NA	Good	Good	Good
XF:23ID1-VA{Holo:1-TCG:2}	NA	NA	Good	Good	Good

~~\* Indicates that~~ *jb 8/24/18*

**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 action XFD-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:23ID1-ES{Holo-Mag:1}F:1	0.45 GPM	-	-	Monitoring only

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Number: **PS-R-XFP-EPS-CHK-001**

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Prepared by:

X



Garrett Bischof  
Document Preparer

Approved by:

X



Richard Farnsworth  
Controls Group Leader

X



Wen Hu  
Appropriate Beamline Group Leader