

| Brookhaven National Laboratory/ Photon Sciences Directorate | | | |
|---|---|-------------|----------------------|
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 |
| | | | Page: 1 of 8 |

Section A must be completed for all configurations. In addition:

- ___ For beam on the outboard branch to PSH7, Sections B must be completed.
- ___ For beam on the outboard branch to PSH8, Sections B and C must be completed.
- ___ For beam on the outboard branch to PSH9, Sections B through D must be completed.
- ___ For beam on the outboard branch to LARIAT-2 endstation, Sections B through E must be completed.
- ___ For beam on the outboard branch to VPPEM endstation, Sections B and F must be completed.
- ___ For beam on the outboard branch to HAXPES station, Sections B and G must be completed.
- ___ For beam on the inboard branch to PSH2, Section H must be completed.
- ___ For beam on the inboard branch to PSH3, Sections H and I must be completed.
- ___ For beam on the inboard branch to VPPEM endstation, Sections H through J must be completed.

SECTION A:

Check the following items on the roof of the FOE (7-ID-A):

- 7IDA-LBYR-01 Check roof labyrinth is secured, closed, and labeled.
- 7IDA-LBYR-02 Check roof labyrinth is secured, closed, and labeled.
- 7IDA-LBYR-03 Check roof labyrinth is secured, closed, and labeled.
- 7IDA-LBYR-04 Check roof labyrinth is secured, closed, and labeled.
- 7IDA-LBYR-05 Check roof labyrinth is secured, closed, and labeled.
- 7IDA-LBYR-06 Check roof labyrinth is secured, closed, and labeled.

Check the following inside the FOE (7-ID-A):

- 7-IDA-FAM-01 Check the flange containing the PPS aperture is in place and labeled.
- 7-IDA-MSK-01 Check mask is in place, labeled, and that cooling water is connected.
- 1 7-IDA-SBS-01 Check shielding is in place and labeled as per photograph
- 7-IDA-WBS-01 Check that white beam stop is in place, labeled, and that cooling water is connected.
- 2 7-IDA-BSS-01 Check lead Brems. shielding is in place and labeled as per photograph.
- 3 7-IDA-SBS-02 Check shielding is in place and labeled as per photograph.
- 7-IDA-MSK-04 Check mask is in place, labeled, and that cooling water is connected.
- 7-IDA-MSK-02 Check mask is in place, labeled, and that cooling water is connected.
- 7-IDA-FS-02 Check cooled frame is in place, labeled, and that cooling water is connected.
- 7-IDA-FS-06 Check cooled frame is in place, labeled, and that cooling water is

| | | | |
|----------|---|-------------|----------------------|
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 |
| | | | Page: 2 of 8 |

connected.

- 4 7-IDA-BRS-01 Check tungsten Brems. stop is in place and labeled as per photograph.
- 7-IDA-PSH-01 Check that photon shutter 1 is in place and labeled, and that cooling water is connected.
- 7-IDA-PSH-04 Check that photon shutter 4 is in place and labeled, and that cooling water is connected.
- 5 7-IDA-GU-01 Check that hutch guillotine is secured closed and labeled as per photograph.
- 7-IDA-LBYR-07 Check that PPS labyrinth is closed, secured, and labeled.

Check the following on the downstream wall of the FOE:

- 6 7-IDA-SBS-03 Check that shielding is in place and labeled as per photograph.
- 7 7-IDA-CLLR-01 Check that collar is in place and labeled as per photograph.
- 7 7-IDA-CLLR-02 Check that collar is in place and labeled as per photograph.

SECTION B:

Check the following in the 7-ID-1 floor area (outboard)

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 4.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID1-VA-14 Check that lead shielded pipe is in place and labeled.
- 8 7-ID1-CLLR-01 Check that beam tube collar B1 (2 mm) is in place and labeled as per photograph.
- 7-ID1-SW-09 Check that pair of vacuum switches are in place and labeled, and that valve to chamber is open.
- 8 7-ID1-CLLR-02 Check that combined bellows and beam tube collar B2-3 (4 mm) is in place and labeled as per photograph.
- 7-ID1-SW-04 Check that pair of vacuum switches are in place and labeled, and that valve to chamber is open.
- 7-ID1-VVS-01 Check that PGM chamber which includes vacuum vessel and M2 hard stop is in place and labeled.
- 7-ID1-VWPT-01 Check that leaded viewport on PGM chamber is in place and labeled.
- 7-ID1-VWPT-02 Check that leaded viewport on PGM chamber is in place and labeled.
- 7-ID1-VWPT-03 Check that leaded viewport on PGM chamber is in place and labeled.

| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | | | | | |
|-----------|---|----------------------|---|------------|------------------|-------|---------------|
| Number: | NSLSII-7ID-CHK-002 | Revision: | 3 | Effective: | 23MAR2018 | Page: | 3 of 8 |
| | <input type="checkbox"/> | 7-ID1-VWPT-04 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-05 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-06 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-07 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-08 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-13 | Check that leaded viewport on PGM chamber is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-MSK-05 | Check that flange containing zero order mask is in place and labeled, and that cooling water is connected. | | | | |
| | <input type="checkbox"/> | 7-ID1-MSK-06 | Check that uncooled masks assembly is in place and labeled. | | | | |
| 9 | <input type="checkbox"/> | 7-ID1-CLLR-04 | Check that beam tube collar B4 (1 mm) is in place and labeled as per photograph. | | | | |
| | <input type="checkbox"/> | 7-ID1-VA-15 | Check that contiguous vacuum section between GV15 and GV16, and between GV 15 and GV26 is in place and labeled. | | | | |
| 9 | <input type="checkbox"/> | 7-ID1-CLLR-05 | Check that bellows collar B5 (2mm) is in place and labeled as per photograph. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-9 | Check that leaded viewport on M3 chamber is in place and labeled. | | | | |
| 10 | <input type="checkbox"/> | 7-ID1-CLLR-06 | Check that bellows collar B6 (2mm) is in place and labeled as per photograph. | | | | |
| | <input type="checkbox"/> | 7-ID1-PBS-01 | Check that pink beam stop is in place and labeled, and that cooling water is connected. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-10 | Check that leaded viewport on PBS chamber is in place and labeled. | | | | |
| 11 | <input type="checkbox"/> | 7-ID1-CLLR-07 | Check that bellows collar B7 (1 mm) is in place and labeled as per photograph. | | | | |
| 12 | <input type="checkbox"/> | 7-ID1-CLLR-09 | Check that bellows collar B9 (1 mm) is in place and labeled as per photograph. | | | | |
| | <input type="checkbox"/> | 7-ID1-VA-24 | Check that contiguous vacuum section between GV26 and GV27 is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-VWPT-12 | Check that leaded viewport on Diagnostic Module 6 is in place and labeled. | | | | |
| 13 | <input type="checkbox"/> | 7-ID1-CLLR-10 | Check that bellows collar B10 (1 mm) is in place and labeled as per photograph. | | | | |
| | <input type="checkbox"/> | 7-ID1-VA-25 | Check that contiguous vacuum section between GV27 and PSH7 is in place and labeled. | | | | |
| | <input type="checkbox"/> | 7-ID1-PSH-07 | Check that photon shutter 7 is in place and labeled labeled. | | | | |

| Brookhaven National Laboratory/ Photon Sciences Directorate | | | | |
|---|---|-------------|----------------------|--------------|
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 | Page: 4 of 8 |

- 11 7-ID1-CLLR-08 Check that bellows collar B8 (1 mm) is in place and labeled as per photograph.
- 7-ID1-VA-16 Check that contiguous vacuum section between GV16 and GV17 is in place and labeled.
- 13 7-ID1-VWPT-11 Check that leaded viewport on Diagnostic Module 3 is in place and labeled.
- 7-ID1-CLLR-11 Check that bellows collar B11 (1 mm) is in place and labeled as per photograph.
- 7-ID1-VA-17 Check that contiguous vacuum section between GV17 and GV18 is in place and labeled.
- 7-ID1-VA-18 Check that contiguous vacuum section between GV18 and GV19 is in place and labeled.
- 7-ID1-VA-19 Check that contiguous vacuum section between GV19 and PSH5, and GV19 and beam stop flange 7-ID-FLG-01 is in place and labeled.
- 7-ID1-PSH-05 Check that photon shutter 5 is in place and labeled.
- 7-ID1-FLG-01 Check that beam stop flange is in place and labeled.

SECTION C:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 7 OR Photon Shutter 4.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID1-VA-26 Check that contiguous vacuum section between PSH7 and GV 29 is in place and labeled.
- 7-ID1-SW-05 Check that pair of vacuum switches are in place and labeled, and that valve connecting to chamber is open.
- 7-ID1-SW-11 Check that pair of vacuum switches are in place and labeled, and that valve connecting to chamber is open.
- 7-ID1-PSH-08 Check that photon shutter 8 is in place and labeled.

SECTION D:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 8 OR Photon Shutter 7 OR Photon Shutter 4.

Lead Beamline Scientist (signature): _____ **Date:** _____

| Brookhaven National Laboratory/ Photon Sciences Directorate | | | | |
|---|---|-------------|----------------------|--------------|
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 | Page: 5 of 8 |

- 7-ID1-VA-28 Check that contiguous vacuum section between PSH8 and GV 31 is in place and labeled.
- 7-ID1-VA-29 Check that contiguous vacuum section between GV 31 and GV 31B is in place and labeled.
- 7-ID1-SW-06 Check that pair of vacuum switches are in place and labeled, and that valve connecting to chamber is open.
- 7-ID1-PSH-09 Check that photon shutter 9 is in place and labeled.

SECTION E:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 9.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID1-VA-30 Check that contiguous vacuum section between photon shutter 9 and the upstream flange of the LARIAT-2 endstation is in place and labeled.
- 7-ID1-SW-07 Check that pair of vacuum switches are in place and labeled, and that valve connecting to chamber is open.

SECTION F:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 6 OR Photon Shutter 4 OR Beam Stop 7-ID1-FLG-01 is in place and under configuration control.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID1-VA-21 Check that contiguous vacuum section between GV 22 and GV 23 is in place and labeled.
- 7-ID1-VA-22 Check that contiguous vacuum section between GV23 and GV24 is in place and labeled.
- 7-ID1-VA-23 Check that contiguous vacuum section between GV24 and GV25 is in place and labeled.
- 7-ID1-VA-12 Check that contiguous vacuum section between GV 12 and VPPEM endstation and GV 25 and VPPEM endstation is in place and labeled.
- 7-ID2-SW-03 Check that pair of vacuum switches is in place and labeled, and that vlave to chamber is open.
- 7-ID2-FLG-01 Check that beam stop flange is in place and labeled.

| | | | |
|---|---|-------------|----------------------|
| Brookhaven National Laboratory/ Photon Sciences Directorate | | | |
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 |
| | | | Page: 6 of 8 |

SECTION G:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 5 OR Photon Shutter 4.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID1-VA-20 Check that contiguous vacuum section between PSH5 and GV21 is in place and labeled.
- 7-ID2-VA-09 Check that contiguous vacuum section between GV9, GV21, and HAXPES endstation is in place and labeled.
- 7-ID2-SW-02 Check that pair of vacuum switches is in place and labeled, and that valve to chamber is open.

SECTION H:

Check the following in the 7-ID-2 floor area (inboard):

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 1.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 15 7-ID2-SBE-01 Check that shielded beam pipe enclosure is in place and labeled as per photograph.
- 15 7-ID2-SBE-02 Check that shielded beam pipe enclosure is in place and labeled as per photograph.
- 14,15 7-ID2-SBE-03 Check that shielded beam pipe enclosure is in place and labeled as per photograph.
- 15 7-ID2-SBE-04 Check that shielded beam pipe enclosure is in place and labeled as per photograph.
- 7-ID2-VA-05 Check that lead shielded beam pipe is in place and labeled.
- 14,15 7-ID2-SFE-01 Check that shielded flange enclosure is in place and labeled as per photograph.
- 16 7-ID2-CLLR-20 Check that bellows collar B20 (2 mm) is in place and labeled as per photograph.
- 7-ID2-SW-08 Check that pair of vacuum switches is in place and labeled, and that valve connecting to chamber is open.
- 17 7-ID2-CLLR-21 Check that bellows collar B21 (2 mm) is in place and labeled as per photograph.

| | | | |
|----------|---|-------------|----------------------|
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 |
| | | | Page: 7 of 8 |

- 7-ID2-MSK-03 Check that the mask is in place and labeled, and that cooling water is connected.
- 17 7-ID2-CLLR-22 Check that bellows collar B22 (2 mm) is in place and labeled as per photograph.
- 7-ID2-VVS-01 Check that DCM chamber is in place and labeled.
- 7-ID2-VWPT-01 Check that leaded viewport is in place and labeled.
- 7-ID2-VWPT-02 Check that leaded viewport is in place and labeled.
- 7-ID2-SW-01 Check that pair of vacuum switches is in place and labeled, and that valve connecting to chamber is open.
- 18 7-ID2-CLLR-23 Check that bellows collar B23 (2 mm) is in place and labeled as per photograph.
- 7-ID2-PBS-01 Check that pink peam stop is in place and labeled, and that cooling water is connected.
- 18 7-ID2-CLLR-24 Check that PBS bellows collar B24 (2 mm) is in place and labeled as per photograph.
- 7-ID2-VA-06 Check that contiguous vacuum section between GV6 and GV7 is in place and labeled.
- 7-ID2-VA-07 Check that contiguous vacuum section between GV7 and PSH2 is in place and labeled.
- 7-ID2-PSH-02 Check that photon shutter 2 is in place and labeled.

SECTION I:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 2 OR Photon Shutter 1.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID2-VA-08 Check that contiguous vacuum section between PSH2 and GV9 is in place and labeled.
- 7-ID2-VA-09 Check that contiguous vacuum section between GV9 and HAXPES Station Upstream Flange is in place and labeled.
- 7-ID2-SW-02 Check that pair of vacuum switches is in place and labeled, and that valve to chamber is open.
- 7-ID2-VA-10 Check that contiguous vacuum section between HAXPES Downstream Flange and PSH3 is in place and labeled.
- 7-ID2-PSH-03 Check that photon shutter 3 is in place and labeled.

| | | | |
|---|---|-------------|----------------------|
| Brookhaven National Laboratory/ Photon Sciences Directorate | | | |
| Subject: | NSLS-II Beamline 7-ID Radiation Safety Component Checklist | | |
| Number: | NSLSII-7ID-CHK-002 | Revision: 3 | Effective: 23MAR2018 |
| | | | Page: 8 of 8 |

SECTION J:

The following section does NOT need to be verified subject to SSWP# _____ and LOTO has been applied to the Beamline Photon Shutter 3 OR Photon Shutter 2 OR Photon Shutter 1.

Lead Beamline Scientist (signature): _____ **Date:** _____

- 7-ID2-VA-11** Check that contiguous vacuum section between PSH3 and GV12 is in place and labeled.
- 7-ID2-VA-12** Check that contiguous vacuum section between GVs 12 and 25 and VPPEM endstation is in place and labeled.
- 7-ID2-SW-03** Check that pair of vacuum switches is in place and labeled, and that valve to chamber is open.
- 7-ID2-FLG-01** Check that beam stop flange is in place and labeled.

3/23/2018

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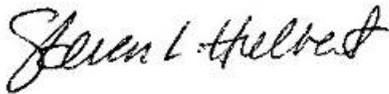
X Conan Weiland

Conan Weiland
SST Lead Beamline Scientist
Signed by: Weiland, Conan

X Chernoy Jaye

Chernoy Jaye
SST Lead Beamline Scientist
Signed by: Jaye, Chernoy

3/2:

X 

Steven Hulbert
Technical Authority

Inspected by

Print Name _____ Signature: _____ Date: _____

******* Removal or Modification of any Device under Configuration Control Requires an Approved NSLS-II Safety System Work Permit *******