

Brookhaven National Laboratory/ Energy Sciences Directorate			
Subject:	<b>NSLS-II Storage Ring Pentant 5 Radiation Safety Component Checklist</b>		
Number:	<b>PS-R-ESH-KSR-007</b>	Revision:	<b>10</b>
Effective:	<b>6/28/2016</b>	Page:	<b>1 of 5</b>
Prepared by:	<b>L. Doom</b>	Approved by:	<b>R. Chmiel</b>

**Except for the Mekometer Port (checkpoint 5701), all configurations must match the associated photograph located near the checkpoint.**

### **Inside Storage Ring Pentant 5**

#### **Check 5001 through 5022 in Cell 17:**

- 5001.  Utility Penetration shielding at 16 ID in place and labeled
- 5002.  Vacuum flange and blank off at Cell 17 Girder 2 in place and labeled
- 5003.  Dipole chamber mounting brackets at Cell 17 Girder 3 in place and labeled
- 5004.  Vacuum Absorber at Cell 17 Girder 3 in place and labeled
- 5005.  Dipole Shadow shield at Cell 17 Girder 4 in place, banded and labeled
- 5006.  Ratchet Wall Plug (Front end) shielding at 16 BM in place and labeled
- 5007.  Utility Penetration shielding at 16 BM in place and labeled
- 5008.  Dipole Shadow shield at Cell 17 Girder 6 in place, banded and labeled
- 5009.  Front End Fixed Aperture Mask at 17ID in place and labeled
- 5010.  Front End Burn Through Device #1 at 17ID in place and labeled
- 5011.  Front End Collimator #1 shielding at 17ID in place and labeled
- 5012.  Front End Burn Through Device #2 at 17ID in place and labeled
- 5013.  Front End Collimator #2 shielding at 17ID in place and labeled
- 5014.  Safety Shutter #1 shielding at 17ID in place and labeled
- 5015.  Safety Shutter #2 shielding at 17ID in place and labeled
- 5016.  Ratchet Wall Collimator shielding at 17ID in place and labeled (This verifies Burn Through Device #3 in ratchet wall is present)
- 5017.  Vacuum flange and blank off at Cell 17 Girder 4 in place and labeled
- 5018.  Dipole chamber mounting brackets at Cell 17 Girder 4 in place and labeled
- 5019.  Exit Absorber at Cell 17 Girder 6 in place and labeled
- 5020.  Chamber mounting brackets at Cell 17 Girder 6 in place and labeled
- 5021.  Fixed mask 2 at 17BM in place and labeled
- 5022.  Lead Collimator #1 at 17BM in place and labeled

#### **Check 5101 through 5111 in Cell 18:**

- 5101.  Utility Penetration shielding at 17 ID in place and labeled
- 5102.  Shadow shield at 17BM in place and labeled
- 5103.  Fixed mask 5 at 17BM in place and labeled
- 5104.  Lead Collimator #2 at 17BM in place and labeled
- 5105.  Safety Shutter #1 shielding at 17BM in place and labeled

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5106.  Safety Shutter #2 shielding at 17BM in place and labeled
5107.  Ratchet Wall Collimator shielding at 17BM in place and labeled
5108.  Dipole Shadow shield at Cell 18 Girder 4 in place, banded and labeled
5109.  Utility Penetration shielding at 17 BM in place and labeled
5110.  Dipole Shadow shield at Cell 18 Girder 6 in place, banded and labeled
5111.  Ratchet Wall Plug (Front end) shielding at 18 ID in place and labeled

**Check 5201 through 5206 in Cell 19:**

5201.  Utility Penetration shielding at 18 ID in place and labeled
5202.  Dipole Shadow shield at Cell 19 Girder 4 in place, banded and labeled
5203.  Ratchet Wall Plug (Front end) shielding at 18 BM in place and labeled
5204.  Utility Penetration shielding at 18 BM in place and labeled
5205.  Dipole Shadow shield at Cell 19 Girder 6 in place, banded and labeled
5206.  Ratchet Wall Plug (Front end) shielding at 19 ID in place and labeled

**Check 5301 through 5306 in Cell 20:**

5301.  Utility Penetration shielding at 19 ID in place and labeled
5302.  Dipole Shadow shield at Cell 20 Girder 4 in place, banded and labeled
5303.  Ratchet Wall Plug (Front end) shielding at 19 BM in place and labeled
5304.  Utility Penetration shielding at 19 BM in place and labeled
5305.  Dipole Shadow shield at Cell 20 Girder 6 in place, banded and labeled
5306.  Ratchet Wall Plug (Front end) shielding at 20 ID in place and labeled

**Check 5401 through 5416 in Cell 21:**

5401.  Utility Penetration shielding at 20 ID in place and labeled
5402.  Vacuum flange and blank off at Cell 21 Girder 2 in place and labeled
5403.  Dipole chamber mounting brackets at Cell 21 Girder 3 in place and labeled
5404.  Vacuum Absorber at Cell 21 Girder 3 in place and labeled
5405.  Dipole Shadow shield at Cell 21 Girder 4 in place, banded and labeled
5406.  Ratchet Wall Plug (Front end) shielding at 20 BM in place and labeled
5407.  Utility Penetration shielding at 20 BM in place and labeled
5408.  Dipole Shadow shield at Cell 21 Girder 6 in place, banded and labeled
5409.  Front End Fixed Aperture Mask at 21ID in place and labeled
5410.  Front End Burn Through Device #1 at 21ID in place and labeled
5411.  Front End Collimator #1 shielding at 21ID in place and labeled
5412.  Reserved for future use.
5413.  Front End Collimator #2 shielding at 21ID in place and labeled

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5414.  Safety Shutter #1 shielding at 21ID in place and labeled
5415.  Safety Shutter #2 shielding at 21ID in place and labeled
5416.  Ratchet Wall Collimator shielding at 21ID in place and labeled (This verifies Burn Through Device #2 in ratchet wall is present)

**Check 5501 through 5509 in Cell 22:**

5501.  Utility Penetration shielding at 21 ID in place and labeled
5502.  RF utility penetration shielding in place and labeled
5503.  RF waveguide penetration #2 shielding in place and labeled
5504.  RF cable tray penetration shielding in place and labeled
5505.  Dipole Shadow shield at Cell 22 Girder 4 in place, banded and labeled
5506.  Ratchet Wall Plug (Front end) shielding at 21 BM in place and labeled
5507.  Utility Penetration shielding at 21 BM in place and labeled
5508.  Dipole Shadow shield at Cell 22 Girder 6 in place, banded and labeled
5509.  Ratchet Wall Plug (Front end) shielding at 22 ID in place and labeled

**Outside Storage Ring Tunnel Pentant 5**

**Check 5601 through 5630 along the storage ring outer wall**

5601.  Utility Penetration shielding at 16 ID in place and labeled (inside hutch)
5602.  Fixed concrete blocks (2) at 16 BM in place and labeled (inside hutch)
5603.  Ratchet Wall Plug (Front end) shielding at 16 BM in place, banded and labeled
5604.  Utility Penetration shielding at 16 BM in place and labeled
5605.  Ratchet Wall Collimator shielding at 17ID in place and labeled (This verifies Burn Through Device #3 in ratchet wall is present)
5606.  Utility Penetration shielding at 17 ID in place and labeled (inside hutch)
5607. N/A Fixed concrete blocks (2) at 17 BM in place (blocks cannot be accessed)
5608.  Ratchet Wall Collimator shielding at 17BM in place and labeled
5609.  Utility Penetration shielding at 17 BM in place and labeled
5610.  Ratchet Wall Plug (Front end) shielding at 18 ID in place, banded and labeled
5611.  Utility Penetration shielding at 18 ID in place and labeled
5612.  Fixed concrete blocks (2) at 18 BM in place and labeled
5613.  Ratchet Wall Plug (Front end) shielding at 18 BM in place, banded and labeled
5614.  Utility Penetration shielding at 18 BM in place and labeled
5615.  Ratchet Wall Plug (Front end) shielding at 19 ID in place, banded and labeled
5616.  Utility Penetration shielding at 19 ID in place and labeled

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5617.  Fixed concrete blocks (4) at 19 BM in place and labeled
5618.  Ratchet Wall Plug (Front end) shielding at 19 BM in place, banded and labeled
5619.  Utility Penetration shielding at 19 BM in place and labeled
5620.  Ratchet Wall Plug (Front end) shielding at 20 ID in place, banded and labeled
5621.  Utility Penetration shielding at 20 ID in place and labeled
5622.  Fixed concrete blocks (2) at 20 BM in place and labeled
5623.  Ratchet Wall Plug (Front end) shielding at 20 BM in place, banded and labeled
5624.  Utility Penetration shielding at 20 BM in place and labeled
5625.  Ratchet Wall Collimator shielding at 21ID in place and labeled (This verifies Burn Through Device #2 in ratchet wall is present)
5626.  Utility Penetration shielding at 21 ID in place and labeled
5627.  Fixed concrete blocks (2) at 21 BM in place and labeled
5628.  Ratchet Wall Plug (Front end) shielding at 21 BM in place, banded and labeled
5629.  Utility Penetration shielding at 21 BM in place and labeled
5630.  Ratchet Wall Plug (Front end) shielding at 22 ID in place, banded and labeled (inside hutch)

**Check 5701 on the Storage Ring Mezzanine at Cell 21**

5701.  Mekometer port cover plate labeled and shielding padlocked (below cover plate)

**Check 5801 in Service Building 5:**

5801.  Fixed concrete blocks (8) in place and labeled

**Check 5901 through 5903 in the RF Building:**

5901.  RF utility penetration shielding in place and labeled
5902.  RF waveguide penetration #2 shielding in place and labeled
5903.  RF cable tray penetration shielding in place and labeled

Prepared by:

Approved by:

6/22/2016

6/22/2016

**X** Lewis Doom

Lewis Doom  
Storage Ring Engineer  
Signed by: Doom, Lewis

**X** Robert Chmiel

Robert Chmiel  
Safety Officer  
Signed by: Chmiel, Robert

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Inspected by

Print Name \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***\*\*\*\*\*Removal of any shielding or opening of any locks listed on this checklist requires posting an approved Photon Sciences Safety System Work Permit \*\*\*\*\****