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| X4A SAFETY CHECKLIST | | | BROOKHAVEN NATIONAL LABORATORY NATIONAL SYNCHROTRON LIGHT SOURCE |
| Rev: D | Effective: 2/14/2012 | Page 1 of 1 | Number: LS-SCL-0010 |
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Original signatures on file.

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1. Valid Padlock Index and log, no padlocks open.

FOR CHECK POINTS 2 THRU 30 GO ON THE X3 SIDE OF BEAMLIN

2. Bremsstrahlung shield (BS #1) in place and banded. See photo #1
3. Exclusion Zone (EZ #1) located after the Bremsstrahlung shield (BS #1). See photo #1
4. Exclusion Zone (EZ #2) starting after the Vat valve #1A.
5. Bremsstrahlung shield (BS # 2) in place and banded. See photo #2
6. Exclusion Zone (EZ #3) located after the Bremsstrahlung shield (BS #2). See photo #2
7. Vacuum Bellows #1 wrapped in lead. See photo #2
8. Bremsstrahlung shield (BS # 3) in place and banded. See photo #3
9. Exclusion Zone (EZ #4) located after the Bremsstrahlung shield (BS #3). See photo #3

**10 AND 11 ARE VISIBLE FROM THE WINDOW ON THE X4C HUTCH
LOOK UNDER CHIPMUNK**

10. Bremsstrahlung shield (BS # 4) in place and banded.
11. Exclusion Zone (EZ #5) located after the Bremsstrahlung shield (BS #4).
12. Exclusion Zone (EZ #6) preceding the Bremsstrahlung shield #6. See photo #4
13. Vacuum Bellows #3 wrapped in lead. See photo #4
14. Viewport #1 must see "lead glass" label on the housing. See photo #4
15. Water cooled Beryllium window #1 wrapped in lead. See photo #4
16. Bremsstrahlung shield (BS # 6) in place and banded. See photo #5
17. Lead Exclusion Zone (EZ #7). See photo #5
18. Exclusion Zone (EZ #8).
19. Vacuum Bellows #4 wrapped in lead. See photo #6
20. Water cooled step-slit wrapped in lead. Viewport 2 & 3 covered in leaded glass. See photo #6
21. Bremsstrahlung shield (BS # 7) in place and banded. See photo #6
22. Exclusion Zone (EZ #9). See photo #6
23. Viewport 4, 5, and 6 on the Kohzu monochromator must have a "lead glass" label on the housing. See photo #7
24. Not in use.
25. Shielding flange at the end of the kohzu monochromator must be lead wrapped. See photo #8
26. Bremsstrahlung shield (BS # 8) in place and banded. See photo #8
27. Vacuum Bellows #5 wrapped in lead. See photo #8
28. Viewport #8, 9 on the mirror tank must have a "lead glass" label on the housing. See photo #9
29. Viewport #10, 11 must see "lead glass" label on the housing. See photo #10
30. Water cooled Beryllium window #2 wrapped in lead. See photo #10

NOW MOVE ON THE X5 SIDE, INTO THE 4C HUTCH

31. Bremsstrahlung shield (BS # 5) in place and banded.
32. Exclusion Zone (EZ #10).

NOW OUT OF THE X4C HUTCH AND MOVE TO THE KOHZU MONOCHROMATOR

33. Two lead covers in the back of the kohzu monochromator. See photo #11
34. Viewport #12 must see "lead glass" label on the housing. See photo #11

OPCO / Beamline Staff: _____ Date: _____