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Standard Beamline Configuration for the Generation-3 Personnel Safety System (PSS) of the Advanced Photon Source at Argonne National Laboratory 9700 Cass Avenue Argonne, Illinois 60439

WBS X.1.4.1.4.1.30.1

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(INDEX)

INDEX OF PAGE REVISIONS

PAGE NO.	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
REV. NO.	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

PAGE NO.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
REV. NO.	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

PAGE NO.	31														
REV. NO.	00														

PAGE NO.															
REV. NO.															

PAGE NO.															
REV. NO.															

PAGE NO.															
REV. NO.															

REVISION AUTHORIZATION

REVISION NUMBER	00	01	02	03	04	05	06	07	08
DCN NUMBER									
DATE									
APPROVED									

Table Of Contents

Revision Record 5
1. Purpose 6
2. Scope 6
3. Beamline Configuration Limits 6
3.1. Stations 6
3.2. Beamline DI Water Flow and dP 7
3.3. Front End Shutter Cluster 7
4. Individual Station Configuration 8
5. Individual Station Enclosure Configuration 9
6. Individual Station Shutter Configuration 10

Revision Record

Revision	Dated	Comments
00	08/05/03	Initial release.

1. Purpose

Create a standard beamline configuration, for the Generation-3 PSS, to be used for new beamline builds.

2. Scope

Define the parameters with maximum limits for the Generation-3 PSS beamline configuration standard.

As an option, the Generation-3 PSS must accommodate users who require non-standard beamline configurations.

3. Beamline Configuration Limits

3.1. Stations

Maximum supported per beamline..…….8

1. Station-A
2. Station-B
3. Station-C
4. Station-D
5. Station-E
6. Station-F
7. Station-G
8. Station-H

Beamline Configuration Limits Continued

3.2. Beamline DI Water Flow and dP
Maximum supported per ID Beamlines Only……..…….……12

1. Station Flow & dP -A
2. Station Flow & dP -B
3. Station Flow & dP -C
4. Station Flow & dP -D
5. Station Flow & dP -E
6. Station Flow & dP -F
7. Station Flow & dP -G
8. Station Flow & dP -H
9. Station Flow & dP -I
10. Station Flow & dP -J
11. Station Flow & dP -K
12. Station Flow & dP -L

3.3. Front End Shutter Cluster
Maximum supported per beamline ……...…….....1

Front End Shutters (FES)

- PS-1 Photon Stop-1
- PS-2 Photon Stop-2
- SS-1 Safety Stop -1
- SS-2 Safety Stop -2

- Pressure Monitor
  - Greater than 60 PSI
  - Less than 3 PSI

4. Individual Station Configuration

- Search Boxes (Push Button with Indicator Light)……..6
- Emergency Stop Buttons (Crash Buttons)……..6
- Doors requiring an electrical interface to PSS
  - Manual & Pneumatic Doors …….8
    - Pneumatic Doors
      - Pneumatic Open/Close Control
      - Door Position Sensors (Open / Closed)
      - Magnetic Door Lock
      - Door Lock Sensor (Unlocked/Locked)
      - Emergency Egress Boxes (Open Push Button)
      - Door Operator Boxes
        - Open / Close Push Buttons
        - Open / Close Status Indicators
        - Locked / Unlocked Status Indicators

        (Status Indicators are also located on station user panel)
    - Manual Doors
      - Door Position Sensors (Open / Closed)
      - Magnetic Door Lock
      - Door Lock Sensor (Unlocked/Locked)
      - Emergency Egress Boxes (Unlock Push Button)
      - Door Control & Status (Located on station user panel)
        - Lock / Unlock Control Buttons
        - Open / Close Status Indicators
        - Locked / Unlocked Status Indicators
  - Doors not requiring an electrical Interface to PSS
    - Manually Operated Doors ……..Unlimited

5. Individual Station Enclosure Configuration

- Station Controls
  - Toggle - APS Key
  - Maintained - User Key
  - Toggle - Major / Serious Fault Reset Key
  - Toggle - Minor Fault / System Warning Reset Key
  - Audible Alerts
    - Audible Key Click
    - Audible Key Error

  - Mode Shutter Interlocks (only if mode shutter is present)…....2
    - Maintained - Kirk Key Non-mono Beam Stop
    - Maintained - Kirk Key Safety Stop
    - Maintained - Kirk Key Mono Shutter -1
    - Maintained - Kirk Key Mono Shutter -2
    - Toggle - Mode Select Key

6. Individual Station Shutter Configuration

- Station Shutter (up to 4 cylinders per shutter)
  Maximum supported per station……...3
  Example #1: Two Mode Shutters and One Mono Shutter.
  Example #2: One Sequenced Shutter and Two Mono Shutters
  Example #3: Three Mono Shutters

  - Mode Shutter
    Maximum supported……...……...2
    Shutter Supports Mono & Non-Mono Beam
    - PS Photon Stop
    - SS Safety Stop
    - MS-1 Mono Stop-1
    - MS-2 Mono Stop-2
    - Pressure monitor greater than 60 PSI

  - Sequenced Shutter
    Maximum supported……...……...3
    Shutter Supports Non-Mono / Mono Beam
    - PS Photon Stop
    - SS Safety Stop (optional)
    - MS-1 Mono Stop-1
    - MS-2 Mono Stop-2
    - Pressure monitor greater than 60 PSI

  - Mono Shutter……...…….……..3
    Shutter Supports Only Mono Beam
    - MS-1 Mono Stop-1
    - MS-2 Mono Stop-2
    - Pressure monitor greater than 60 PSI

  - Manual Beam Stop……...…….3