LoKI PBS

Draft V11.3

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- 13.6.3 LoKI (SANS)
  - 13.6.3.1 Beam Transport and Conditioning System
    - 13.6.3.1.1 Beam Extraction System
      - 13.6.3.1.1.1 Monolith Insert
        - 13.6.3.1.1.1.1 NBOA
          - 13.6.3.1.1.1.1.1 Guide Bender (In Monolith Guide)
          - 13.6.3.1.1.1.1.2 Streaming shielding (In-insert shielding)
          - 13.6.3.1.1.1.1.3 NBOA alignment mechanism
        - 13.6.3.1.1.1.2 Monolith Insert Structure
        - 13.6.3.1.1.1.3 Monolith Insert alignment mechanism
      - 13.6.3.1.1.2 Monolith Window
      - 13.6.3.1.1.3 Light Shutter
    - 13.6.3.1.2 Beam Delivery System
      - 13.6.3.1.2.1 Neutron Guide System
        - 13.6.3.1.2.1.1 Neutron Guide
        - 13.6.3.1.2.1.2 Guide Housing including feed through insert (Vacuum)
        - 13.6.3.1.2.1.3 Guide Support System and alignment
      - 13.6.3.1.2.2 Neutron Guide Shimming
    - 13.6.3.1.3 Chopper System
      - 13.6.3.1.3.1 Pit assembly 1
        - 13.6.3.1.3.1.1 Wavelength Selection Chopper System
        - 13.6.3.1.3.1.2 Pit system
      - 13.6.3.1.3.2 Pit assembly 2
        - 13.6.3.1.3.2.1 Frame overlap chopper assembly 2
        - 13.6.3.1.3.2.2 Pit system
      - 13.6.3.1.3.3 Pit assembly 3 – (Upgrade path)
        - 13.6.3.1.3.3.1 Resolution choppers
        - 13.6.3.1.3.3.2 Pit system
      - 13.6.3.1.3.4 Control Systems
        - 13.6.3.1.3.3.1 EPICS IOC
      - 13.6.3.1.3.5 Support Systems (for 3 pit assemblies)
      - 13.6.3.1.3.6 Service package
    - 13.6.3.1.4 Beam Geometry Conditioning
      - 13.6.3.1.4.1 Guide Collimation System
        - 13.6.3.1.4.1.1 Linear Collimation Guide Section 1- 3 m
          - 13.6.3.1.4.1.1.1 Flight tube 1
          - 13.6.3.1.4.1.1.2 Flight tube 2
          - 13.6.3.1.4.1.1.3 Moving close shielding section
          - 13.6.3.1.4.1.1.4 Mechanism
        - 13.6.3.1.4.1.2 Linear Collimation Guide Section 2 – 2 m
          - 13.6.3.1.4.1.2.1 Flight tube 1
          - 13.6.3.1.4.1.2.2 Flight tube 2
          - 13.6.3.1.4.1.2.3 Moving close shielding section
          - 13.6.3.1.4.1.2.4 Mechanism
        - 13.6.3.1.4.1.3 Inflatable seals Pneumatic system
      - 13.6.3.1.4.2 Slit collimation system
        - 13.6.3.1.4.2.1 Slit package 1 – 15.5 m
          - 13.6.3.1.4.2.1.2 Motion Mechanics
          - 13.6.3.1.4.2.1.3 Absorber Blades
        - 13.6.3.1.4.2.2 Slit package 2 – 20.5 m
          - 13.6.3.1.4.2.2.1 Motion Mechanics
          - 13.6.3.1.4.2.2.2 Absorber Blades
      - 13.6.3.1.4.3 Aperture Collimation System
        - 13.6.3.1.4.3.1 Aperture Package 1
          - 13.6.3.1.4.2.1.2 Mechanics
          - 13.6.3.1.4.2.1.3 Absorber Blades
      - 13.6.3.1.4.8 Beam Geometry Conditioning Support and Alignment System
    - 13.6.3.1.6 Beam Validation
      - 13.6.3.1.6.1 Beam Monitors
        - 13.6.3.1.6.1.1 Beam Monitor Detector
          - 13.6.3.1.6.1.1.1 Incidental Spectrum Beam Monitors
          - 13.6.3.1.6.1.1.2 Transmitted Spectrum Beam Monitors
        - 13.6.3.1.6.1.2 Beam Monitor Electronics
          - 13.6.3.1.6.1.2.1 EPICS IOC
    - 13.6.3.1.8 Beam Cut Off
      - 13.6.3.1.8.2 Heavy shutter
        - 13.6.3.1.8.2.1 Beam stop / absorber
        - 13.6.3.1.8.2.2 Motion Mechanics
      - 13.6.3.1.8.3 Fast shutter
        - 13.6.3.1.8.3.1 Beam stop / absorber
        - 13.6.3.1.8.3.2 Motion Mechanics
    - 13.6.3.1.9 Vacuum System
      - 13.6.3.1.9.5 In bunker vacuum
        - 13.6.3.1.9.5.1 Chopper pit 1 vacuum system - 6m to 7 m
        - 13.6.3.1.9.5.2 Guide vacuum system -7m to 10.5 m
        - 13.6.3.1.9.5.2 Heavy shutter vacuum system -10.5m to 11.5 m
      - 13.6.3.1.9.6 Bunker to sample vacuum
        - 13.6.3.1.9.6.1 Chopper pit 2 vacuum system -11.5 m to 15.5 m
        - 13.6.3.1.9.6.2 Guide vacuum until sample -15.5m to 23.5 m
    - 13.6.3.1.10 Shielding (BTCS)
      - 13.6.3.1.10.1 In bunker shielding
      - 13.6.3.1.10.2 Beamline shielding
      - 13.6.3.1.10.3 Neutron guide shielding (heavy collimation)
  - 13.6.3.2 Sample Exposure System
    - 13.6.3.2.1 Sample Positioning
    - 13.6.3.2.2 Ancillary Mounting
    - 13.6.3.2.3 Sample Environment equipment
      - 1.3.2.3.1 EPICS IOC
    - 13.6.3.2.4 Non- sample environment equipment
      - 13.6.3.2.4.1 alignment laser
      - 13.6.3.2.4.2 Adjustable vacuum snout
      - 13.6.3.2.4.3 Beam defining mask selector or pre-aperture
      - 13.6.3.2.4.4 Pre-sample monitor mechanism
  - 13.6.3.3 Scattering characterisation System
    - 13.6.3.3.2 Neutron Detector System
      - 13.6.3.3.2.1 Neutron Detector
        - 13.6.3.3.2.1.1 Detector
          - 13.6.3.3.2.1.2.1 Detector DAQ
          - 13.6.3.3.2.1.2.2 Detector Readout (DMSC)
          - 13.6.3.3.2.1.2.3 DAQ Rack
          - 13.6.3.3.2.1.2.4 Epics IOC
        - 13.6.3.3.2.1.2 Detector Electronics
      - 13.6.3.3.2.2 Neutron Detector Positioning
        - 13.6.3.3.2.2.2 Positioner Mechanics
        - 13.6.3.3.2.2.3 Positioner MCUs
      - 13.6.3.3.2.3 Neutron Detector Vessel
      - 13.6.3.3.2.4 Detector Beam Stop
        - 13.6.3.3.2.4.1 Beam stop / absorber
        - 13.6.3.3.2.4.2 Motion Mechanics
    - 13.6.3.3.3 Vacuum System
      - 13.6.3.3.3.2 Detector Vessel Vacuum System
      - 13.6.3.3.3.3 Window safety shutter
        - 13.6.3.3.3.3.1 Mechanism
        - 13.6.3.3.3.3.2 Motion Mechanics
  - 13.6.3.5 Experimental Cave
    - 13.6.3.5.2 Utilities Distribution (see Breakout)
      - X Utilities Distribution
        - X.1 Power distribution
        - X.2 Chilled Water Distribution
        - X.3 Compressed Air Distribution
        - X.4 Gas Distribution
        - X.5 EPICS IOC
    - 13.6.3.5.3 Support Infrastructure (See Breakout)
      - X Support Infrastructure
        - X.1 Power
        - X.2 Network
        - X.3 Lighting
        - X.4 Ventilation (HVAC)
        - X.5 Fire protection
        - X.6 Local Crane
        - X.7 Public Address System
        - X.8 Cable Trays
        - X.9 EPICS IOC
    - 13.6.3.5.4 Shielding
    - 13.6.3.5.5 Cave Structure
      - 13.6.3.5.5.1 Door Mechanism
      - 13.6.3.5.5.2 Roof hatch Mechanism
      - 13.6.3.5.5.3 Raised floor
      - 13.6.3.5.5.4 Equipment lift
      - 13.6.3.5.5.5 Beam stop (structure)
    - 13.6.3.5.6 Sample Environment Utilities supply
      - 13.6.3.5.6.1 Power Board
      - 13.6.3.5.6.2 Supply Gasses Board
      - 13.6.3.5.6.3 Chilled Water
    - 13.6.3.5.7 Sample Environment Control Box
  - 13.6.3.6 Control Hutch
    - 13.6.3.6.3 Support Infrastructure (See Breakout)
    - 13.6.3.6.5 Hutch Building (Structure)
    - 13.6.3.6.6 Control Terminal
  - 13.6.3.7 Sample preparation Area
    - 13.6.3.7.1 Utilities Distribution (see Breakout)
    - 13.6.3.7.2 Support Infrastructure (See Breakout)
    - 13.6.3.7.4 Laboratory equipment and sample storage
  - 13.6.3.8 Utilities distribution (Infrastructure)
  - 13.6.3.9 Support Infrastructure
  - 13.6.3.10 Control Racks
    - 13.6.3.10.1 DAQ Rack
    - 13.6.3.10.2 DMSC Rack
    - 13.6.3.10.3 Motion control Rack
    - 13.6.3.10.4 Chopper Control Rack
    - 13.6.3.10.5 Vacuum Control Rack
    - 13.6.3.10.6 Personal Safety System Rack
      - X Personal Safety System (PSS)
        - X.1 Interlock System
        - X.2 Radiation Detection
        - X.3 Shutter Interface
        - X.4 H_2O Detection System
        - X.5 O_2 Monitoring
        - X.6 H_2 Detection System
        - X.7 Fire Protection System
  - 13.6.3.11 Integrated Control and Monitoring
    - 13.6.3.11.1 Instrument Control integration
      - 13.6.3.11.1.1 Generic Motion control
      - 13.6.3.11.1.2 Special Purpose Motion control integration
      - 13.6.3.11.1.4 Control Racks & Electronics
      - 13.6.3.11.1.6 EPICS integration
    - 13.6.3.11.2 PSS (See breakout)
    - 13.6.3.11.3 Data Management and Software Centre (DMSC)
      - 13.6.3.11.3.1 Data Systems and technology
      - 13.6.3.11.3.2 Data management
      - 13.6.3.11.3.3 Instrument Data
      - 13.6.3.11.3.4 Data Analysis and Modelling
    - 13.6.3.11.1.3 Vacuum Control Integration VCI
      - 13.6.3.11.1.3.1 VCI Components
      - 13.6.3.11.1.3.2 VCI Sequencing
      - 13.6.3.11.1.3.3 EPICS IOC
      - 13.6.3.11.1.3.4 Vacuum Control Racks & electronics

Legend:
- Instrument Team
- NOSG
- PSS (Personal Safety System)
- DMSC
- MCA
- Detectors
- Choppers
- Sample environment
- Vacuum Group
- ICS