

Floor Coordinators – 1st Line of User Support

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Mission Statement

The Mission of the APS – AOD Experimental Floor Operations Group is to represent the APS as the point of contact for the day-to-day user activities, provide high quality technical support and act as primary oversight of beam-line operations.

Goals

- Minimize experimenter beam-line downtime for efficient utilization of 3rd generation synchrotron x-ray radiation source.
- Provide the interface between beam-line personnel and all service groups and contractors to foster a productive environment for conducting research.
- Provide technical assistance in several areas in support of the beam-line staff.
- Protect the safety of facility personnel by providing oversight of safety practices and administrative configuration control
- Provide a rewarding environment and foster professional growth of EFO personnel by conducting tutorials and schooling in work related fields.
- Optimize the scientific and technological contribution to the Department of Energy and society from the research carried out at the APS by unbundling the beam-line staff by providing timely assistance with construction and coordination of repair efforts.

General Aspects

- Primarily responsible for "local" LOM
LOMs consist of 4 sectors (8 beam-lines); 1 or 2 FCs per LOM
- Operate on a rotating shift
9 person rotation – on-call 24/7/365
- Must know intricacies of all beam-lines
Maintain beamline database as well as instruct non-local FCs
- Must understand all systems in order to effectively communicate with service groups
PSS, EPS, ACIS, Vacuum, Water, Controls

Beam-line End Cabinet

All pertinent information for a particular beam-line is located within the beam-line end cabinet.

- Experiment Safety Approval Forms
- Commissioning Activity Approval Forms
- Configuration Control Component Lists
- Color Coded Beam-line Maps
- Ray Tracings

In addition to the required postings, Configuration Control Work Permits (yellow), Shutter Authorization Forms (green), and Administrative Restrictions (pink) are posted when applicable.

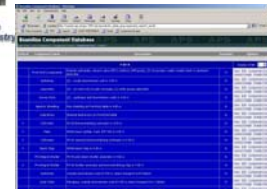
When a Floor Coordinator is called to a beam-line, the information in the end cabinet is checked first.



Beamline Component Database/ Configuration Control Component Lists

All components under Configuration Control are documented within the Beamline Component Database. More than 950 individual elements are tracked within this system. Each component under Configuration Control is photographed, measured, surveyed, and documented in the database. This Oracle based tool can create Configuration Control Component Lists for every beam-line.

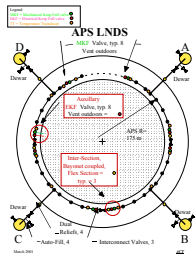
The CCCLs are required documents which reside in the beam-line cabinets at the end of each sector. As a safety precaution, every Operations cycle all CCCLs are verified by FCs before allowing any beam-line to take X-Rays.



Abstract

The Floor Coordinators represent the APS as the point of contact for day-to-day activities of beam-line personnel. They have the primary responsibility for the oversight of beam-line operations. The Floor Coordinators must provide high quality technical support, understand all safety subsystems, and effectively communicate with the User community and APS/ANL support groups. They are strategically located in offices directly adjacent to the APS Experimental Floor. Their scientific backgrounds are varied to better represent the diverse scientific research performed at APS. The Floor Coordinators are present on site 24/7 during User runs (beam available for experimentation) and are on call 24/7/365. Although assigned to specific locations on the Experimental Floor, they must be familiar with the whole facility in order to perform their duties. Up-to-date documentation for each beam-line is maintained in display cabinets at the end of each sector. Floor Coordinators are intimately involved with the management of shielding configuration controlled components, working closely with Health Physics and the Radiation Scientist. Configuration Controlled Components are administratively maintained, documented, and repeatedly verified whenever work is performed upon them and prior to each User run. Floor Coordinators are adept at using EPICS software to monitor, control, and troubleshoot APS systems. Additionally, the Floor Coordinators are responsible for the Liquid Nitrogen Distribution System, which delivers Nitrogen to the individual beam-lines. In summary, the Floor Coordinators facilitate User requests and arrange for the solution of User problems.

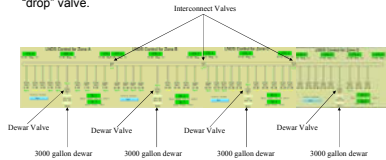
Liquid Nitrogen Distribution System - LNDS



The EFO group has installed a dynamic source of Liquid Nitrogen for the APS User community. This system consists of four modules (A through D). It is operated at approximately 40-psi pressure and is always kept full under normal operating conditions. This is achieved via mechanical float keep full valves (one on either side of each module) that vent boil off gas thus keeping liquid in the line. As a back up, electrical keep full valves are adjacent to the mechanical valves. The lines are vacuum jacketed for insulation purposes and do not show evidence of the cryogenic liquid inside. Each system starts in the open gas yards of the 400 area. Namely areas between 431/432, 433/434, 435/436, & 438. The transfer line starts at the 3000 gallon liquid nitrogen dewar.

LNDS (graphical representation)

The four modules can be joined by pneumatic interconnect valves. Thirty five user locations have been provided, each with a pneumatic "drop" valve.

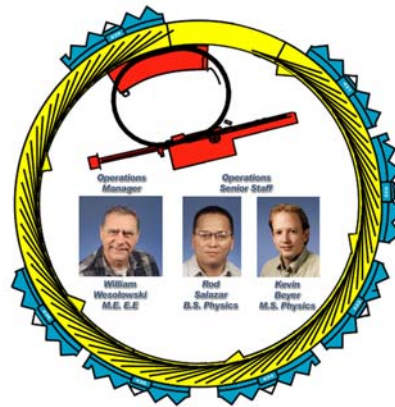


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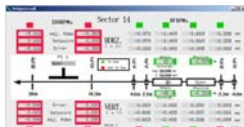
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EPICS Controls Software

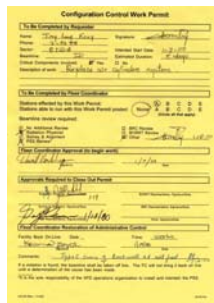


Floor Coordinators use EPICS control screens to monitor, control and troubleshoot APS systems such as Equipment Protection Systems, Personal Safety Systems, DIW, Vacuum, and more.

Orbit Correction screens (below) assist in communicating with the Main Control Room to deliver X-Ray beams precisely where the experimenters desire.



Configuration Control Work Permit



Prior to adjusting a controlled component a Configuration Control Work Permit (CCWP) must be issued by a Floor Coordinator. This document defines the scope of work, the experimental enclosures affected and identifies the responsible parties able to close out the request.

Once issued, a Floor Coordinator disables the experimental enclosures associated with the work by means of a unique APS Enable Key. This permit can only be restored only after the CCWP has been properly closed out with signatures by systems representatives and final approval of the Floor Coordinator.

This process insures that all elements under Configuration Control are in place before allowing beam into any experimental enclosure.

Configuration Controlled Components



The Floor Coordinators are responsible for maintaining all shielding elements deemed to be under Configuration Control by the APS management. Each beam-line component under Configuration Control is tagged to indicate that it is under control and permission must be obtained prior to performing work upon it.

A yellow tag indicates that a component is under Configuration Control.

A red tag indicates a component under Configuration Control that is deemed critical. Any work performed on a Critical Component necessitates that a component be reviewed, aligned, and undergo a radiological survey by Health Physics prior to allowing beam for User experiments.

The process for working on these components is facilitated by the use of a Configuration Control Work Permit (CCWP).

