

APS/Users Operations Monthly Meeting

APS User Policy Issues

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Advanced Photon Source
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Three Topics

- Electrical Equipment Inspections
- Floor Coordinator Midnight Shift Coverage
- Work on Radiation Safety Systems



TOPIC 1

Electrical Equipment Inspection Program

- The program is detailed in ANL ES&H Manual Section 9.3.3.
- Thirteen APS employees have been trained as Designated Electrical Equipment Inspectors (DEEIs). Five-day course.
- So far > 100 pieces of equipment have been inspected at Argonne with approximately 50% failing the inspections.
- The need for electrical inspection is noted on ESAF.
- If an inspection notes a deficiency, APS will assist in attempting to rectify situation.
- Overtime costs and parts costs will be the responsibility of the user.
- No inspection needed if < 50 volts or it is endorsed by a Nationally Recognized Testing Laboratory (NRTL) – for example:



■ **Think of this program not as a burden, but as insurance.**

Web Links for Inspection Procedures

- From: Bruce Glagola <gglagola@aps.anl.gov>
Date: June 20, 2006 2:29:11 PM CDT
To: Bruce Glagola <gglagola@aps.anl.gov>
Subject: User electrical equipment inspections

Hello Beamline Safety Coordinators,

Yesterday in CAT Chat an update about user electrical equipment inspections was presented. All of the information about the electrical equipment inspections is available on the web from the APS Safety and Training page or directly at:

http://www.aps.anl.gov/Safety_and_Training/Electrical_Safety/ index.html

The new APS User Policy and Procedure covering the inspections is available from this page. The policy states that requests for inspections be made in advance. Please see the inspection request page for instructions (available on the link above or directly at:

http://www.aps.anl.gov/Safety_and_Training/Electrical_Safety/ eeinspectionrequest.html)

The e-mail link provided on this page is to the APS Designated Electrical Equipment Inspectors. After the request is made, one of the DEEIs will be in contact with the beamline/user to complete the inspection. Remember that requests are to be made at least 3 days in advance to facilitate scheduling around everyone's schedule.

First Web Link - User Electronic and Electrical Equipment Inspection Criteria

■ User Electronic and Electrical Equipment Inspection Criteria

In order to be in compliance with NEC, OSHA, and DOE regulations all electronic and electrical equipment at the APS will have to be inspected. This includes all electronic and electrical equipment brought to the APS by users for use in their experiments. It is currently expected that this program will become mandatory beginning April 25, 2006. The APS has already started inspecting user electronics that are not tested by a Nationally Recognized Testing Laboratory (NRTL). This includes any type of non-commercial, home-built electronic and electrical equipment. The APS currently has five designated electrical equipment inspectors (DEEI) that have been doing the user equipment inspections. We are currently pursuing having at least six more inspectors trained as soon as the class is available. Please see the links below for additional information.

- [APS User Policy on Electrical Equipment Inspections](#)
- [Non-NRTL Equipment Inspections Frequently Asked Questions](#)
- [Equipment inspection criteria](#)
- [non-NRTL inspection form](#)
- [NRTL inspection form](#)
- [Facility Electrical Equipment Approval Form](#)
- [Electrical Systems Approval Form](#)
- [Inventory Form for non-NRTL Facility Equipment](#)
- [APS Designated Electric Equipment Inspectors](#)
- [Who can become a Designated Electric Equipment Inspector?](#)
- [Nationally Recognized Testing Laboratories \(NRTL\)](#)
- [Argonne presentation on Electrical Equipment Inspections](#) (can be used to understand inspection criteria).
- [Upcoming ESAFs that will need an Inspection](#)
- [Request an Electrical Equipment Inspection](#)



ANL-678A – Non-NRTL/Modified NRTL Listed Electrical Equipment Approval Form

- In-house built, or non-reputable manufacturer, or modified equipment.

**Non-NRTL/Modified NRTL Listed
Electrical Equipment Approval Form**
For use at Argonne National Laboratory

Division: Manufacturer:
 Equipment Owner: Model Number:
 Equipment Name: Serial Number:
 Equipment Location: Building Room ANL Property Number:
 Label Number:
 Multiple Single

Unlisted equipment that is determined to be safe to operate will have a tracking sticker attached for identification. Equipment that does not pass this evaluation will have a REJECTED sticker attached.

Enclosure	Approve	N/A	Grounding	Approve	N/A
Operator not exposed to any hazard	<input type="checkbox"/>	<input type="checkbox"/>	Ground is properly terminated	<input type="checkbox"/>	<input type="checkbox"/>
Not damaged	<input type="checkbox"/>	<input type="checkbox"/>	All non-current carrying exposed metal is properly bonded	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate materials used	<input type="checkbox"/>	<input type="checkbox"/>	All non-current carrying internal subsystems are properly bonded	<input type="checkbox"/>	<input type="checkbox"/>
Protects contents from operating environment	<input type="checkbox"/>	<input type="checkbox"/>	Equipment ground is run with circuit conductors	<input type="checkbox"/>	<input type="checkbox"/>
Adequate shock protection (components well secured)	<input type="checkbox"/>	<input type="checkbox"/>	Auxiliary ground is permitted	<input type="checkbox"/>	<input type="checkbox"/>
Will contain any arcs, sparks and electrical explosions	<input type="checkbox"/>	<input type="checkbox"/>	Internal wiring		
Power source - cord and plug			Polarity correct	<input type="checkbox"/>	<input type="checkbox"/>
Proper voltage and ampacity rating for plug and cord	<input type="checkbox"/>	<input type="checkbox"/>	Phasing correct	<input type="checkbox"/>	<input type="checkbox"/>
Grounding conductor included (if required)	<input type="checkbox"/>	<input type="checkbox"/>	Landing of ground correct	<input type="checkbox"/>	<input type="checkbox"/>
Not frayed or damaged	<input type="checkbox"/>	<input type="checkbox"/>	Separate line/high voltage from low voltage	<input type="checkbox"/>	<input type="checkbox"/>
Proper wiring of plug	<input type="checkbox"/>	<input type="checkbox"/>	Wiring terminals and leads ok (no tension on terminals)	<input type="checkbox"/>	<input type="checkbox"/>
Strain relief on cord	<input type="checkbox"/>	<input type="checkbox"/>	Proper wire size	<input type="checkbox"/>	<input type="checkbox"/>
Power source - direct wired			No loose parts (mechanical bracing)	<input type="checkbox"/>	<input type="checkbox"/>
Proper voltage and ampacity rating for wiring method	<input type="checkbox"/>	<input type="checkbox"/>	Proper overcurrent protection	<input type="checkbox"/>	<input type="checkbox"/>
Installation according to the NEC	<input type="checkbox"/>	<input type="checkbox"/>	Proper dielectric	<input type="checkbox"/>	<input type="checkbox"/>
Proper loading and overcurrent protection in branch circuit	<input type="checkbox"/>	<input type="checkbox"/>	Clearance/creepage distances for high voltage ok	<input type="checkbox"/>	<input type="checkbox"/>
Foreign power supplies and equipment			Marking requirements		
Connected to facility power with appropriate adapters	<input type="checkbox"/>	<input type="checkbox"/>	Power requirements (voltage, current, frequency)	<input type="checkbox"/>	<input type="checkbox"/>
Correct voltage, frequency and phasing	<input type="checkbox"/>	<input type="checkbox"/>	Restrictions and limitations of use	<input type="checkbox"/>	<input type="checkbox"/>
Correct wire ampacity for US use	<input type="checkbox"/>	<input type="checkbox"/>	Make, model and drawing number	<input type="checkbox"/>	<input type="checkbox"/>
			Hazards, including stored energy	<input type="checkbox"/>	<input type="checkbox"/>
			Requirements for access (LOTO, stored energy, PPE)	<input type="checkbox"/>	<input type="checkbox"/>

Inspection Labels

■ Approved

- Labels only issued by DEEIs.
- Applied after equipment passes inspection by a DEEI.



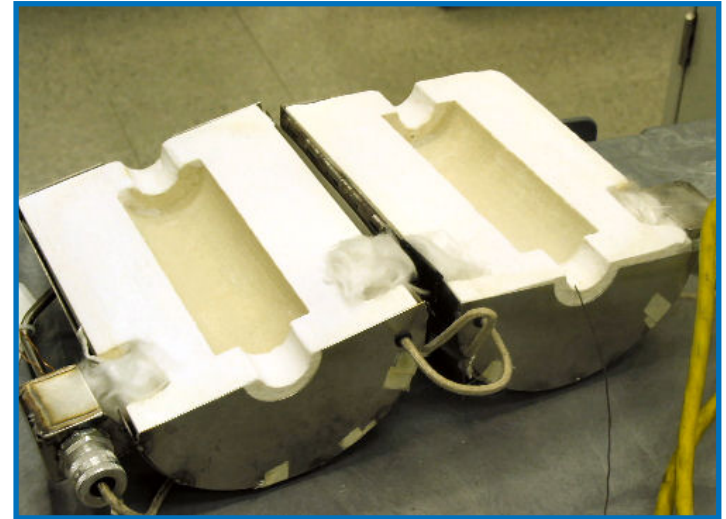
■ Rejected – Equipment May Be Used Pending Approval

- Applied to equipment not passing an inspection due to minor violations such as a minor labeling issue.

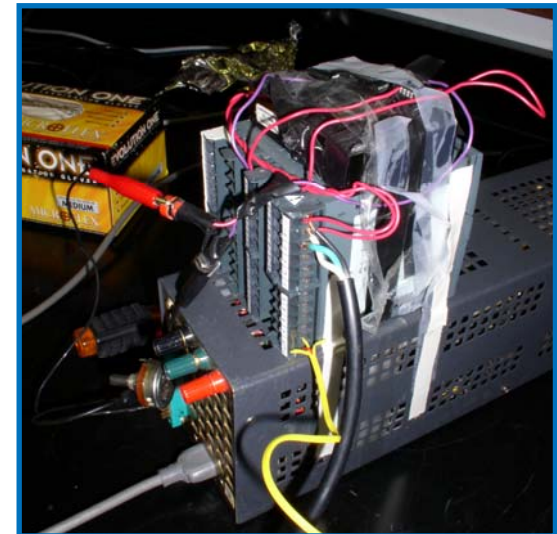


Past Sub-par User Supplied Equipment

- Clam shell furnace.
- Quartz wool fell out causing short and circuit breaker trip.
- No NRTL or UL stamp.



- User built controller.
- Loose potentiometer/rheostat.
- No enclosure.



TOPIC 2

APS Proposes to Eliminate Midnight Shift Floor Coordinator Coverage

Date: June 13, 2006

To: Bruce Bunker, PUC Chair

From: Bill Ruzicka, AES-Division Director

Subject: PUC Input for Proposed APS Policy Changes

The APS plans to implement new policies on 1) working on radiation, shielding components and 2) Floor Coordinator shift coverage and seeks input from the Partner User Council. I have copied the PUC Executive Council members and the PUC Members-at-large but ask that you act as the spokesperson for the PUC and collect and summarize the input from the members. I also ask that you get back to me by COB Friday, June 23rd.

3rd Shift Floor Coordinator Coverage

The APS is proposing that we no longer have an on-site Floor Coordinator on the midnight to 8 am shift. There will be a Floor Coordinator on-call and the Main Control Room Operators will, for the midnight to 8 shift, fill many of the responsibilities currently assigned to the Floor Coordinators. Main Control Room personnel are being trained in Floor Coordinator activities but some nonessential requests may be put off until the day shift. This cost saving move is expected to have some effects on beamline operations but the effects are expected to be minimal.

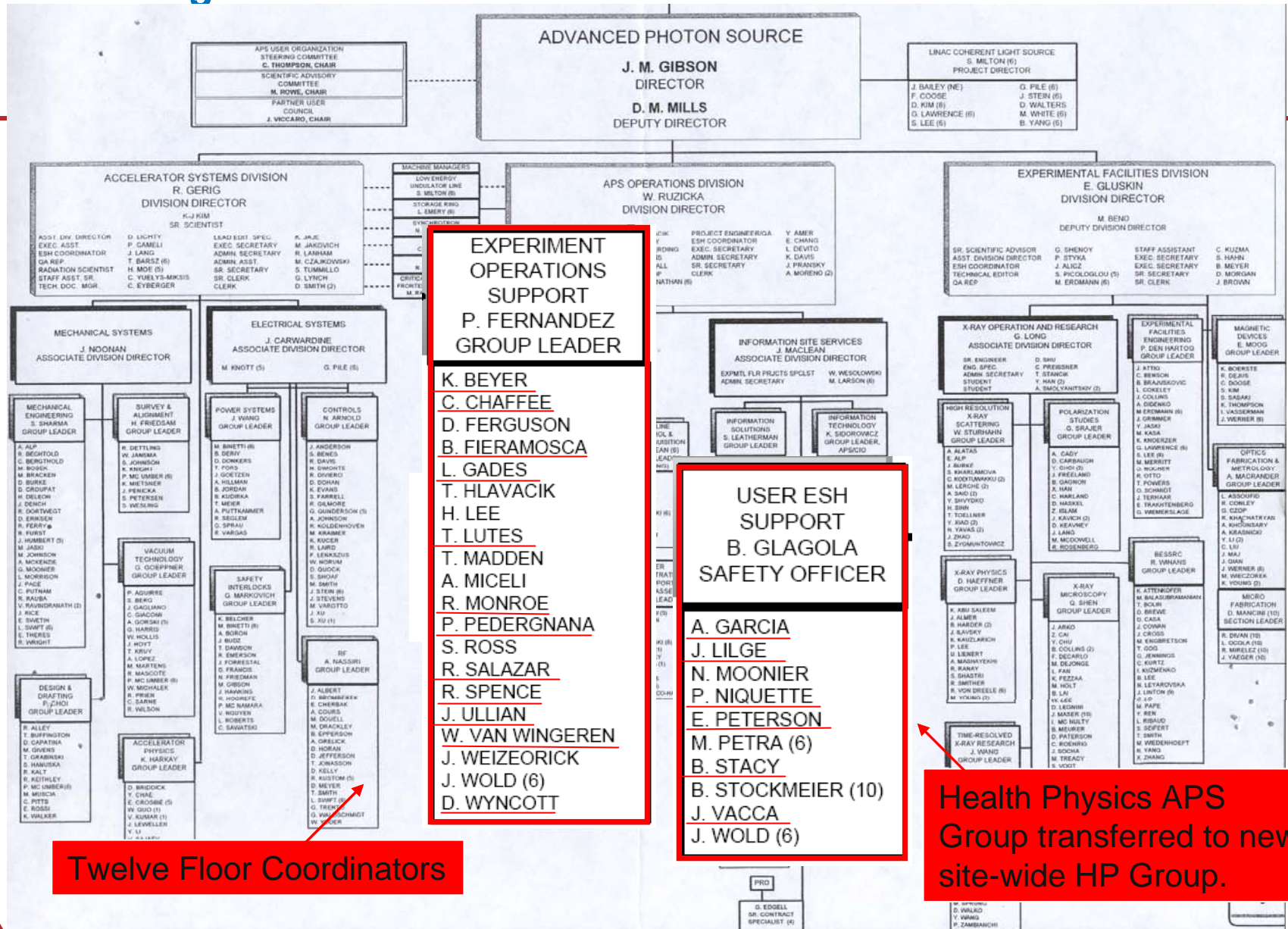
We value the input from the PUC [We have modified our procedures after review of the PUCs comments.]

MCR Operator Tasks

MCR Accelerator Operators qualified and trained to

- Post ESAFs;
- Reset minor PSS trips;
- Perform interface and facilitator functions;
- Do safety walk-throughs; and
- Call on-duty Floor Coordinators for complex situations.

Why are we doing this? APS Organization in March 2006 before the Reorganization

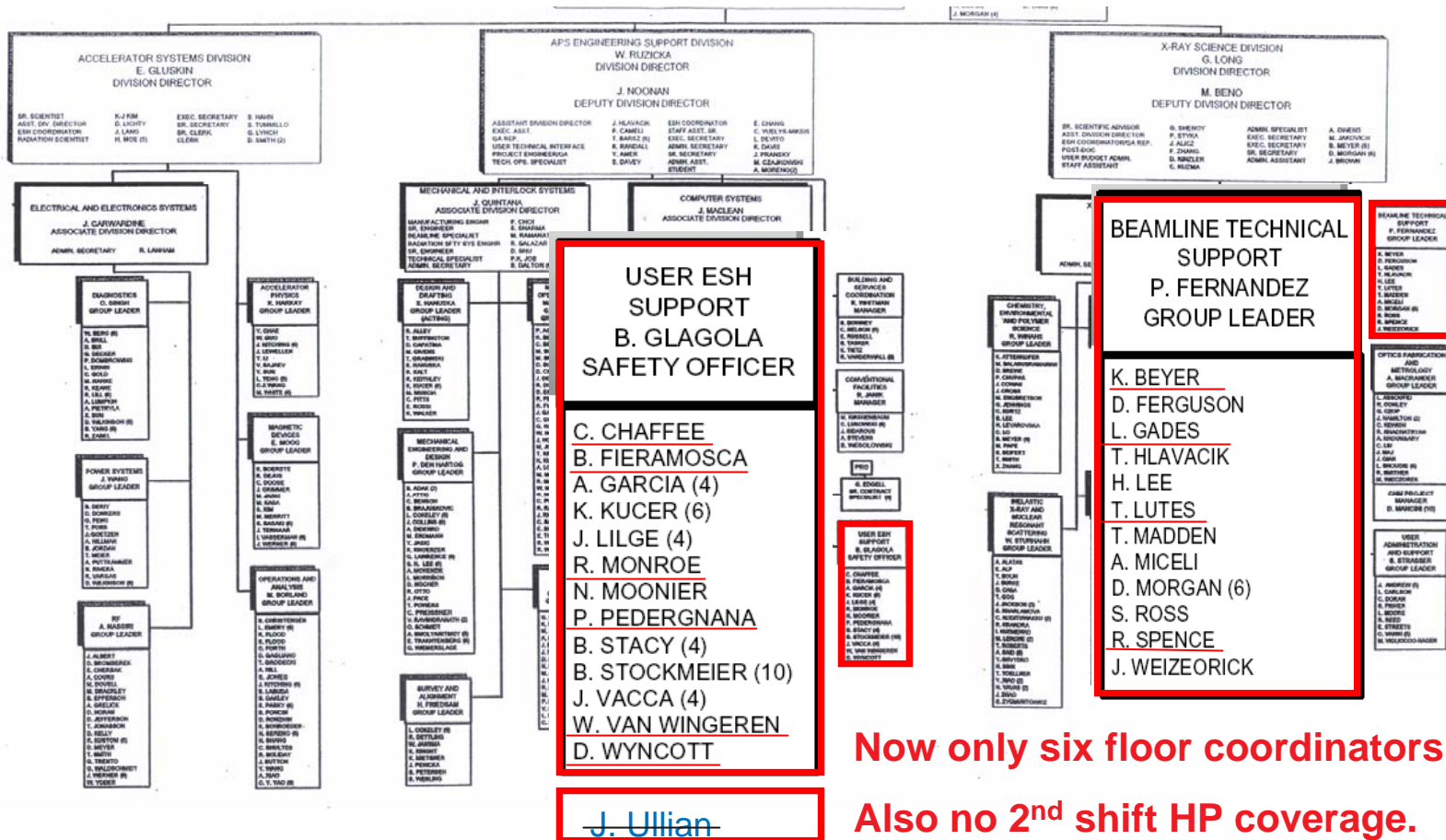


Twelve Floor Coordinators

Health Physics APS Group transferred to new site-wide HP Group.

APS Organization in April 2006 after the Reorganization

- Jeff Ullians slot not refilled. HP technicians are still matrixed to Bruce Glagola.
- The Floor Coordinators transferred to XSD are now titled Scientific Associates.



Now only six floor coordinators.
Also no 2nd shift HP coverage.

Reasons for Elimination of Midnight Shift FC Coverage

- Reorganization in April 2006 included a reduction-in-force.
- Tight budget year, we must run our organization as cost effectively as possible.
- We believe the beamlines will only be slightly, affected by this change. The MCR operators are now trained to assist you.

TOPIC 3

Draft APS Policy on Working on RSS Components PUC Input Received

DRAFT

Title: Working on Beamline and Front End Shielding Components

APS Policy and Procedure Number: 3.1.3

Revision: 0

Supersedes revision: NA

Effective Date: 1 July 2006

Review period: 1 year

Prepared by: S. Davey (APS-AES)

Approvals: approval records in the APS Document Management System

In recognition of the potentially significant hazards associated with beamline or front end radiation shielding, it is the policy of the APS that the APS Engineering Support (AES) Division is responsible for all work on beamline and front end shielding. This responsibility encompasses the labor for alignment, shielding validation, maintenance, repair, and any modification of any beamline shielding component.

If the beamline or front end component has an APS Radiation Shielding red tag, then the AES Division is responsible for any work on the component.

Users and other beamline personnel may operate engineered radiation safety shielding components. For example: users may actuate beamline shutters, and beamline personnel may open or close permanently installed manual shutters or stops, or may open or close an enclosure labyrinth or station door. The shielding systems must be used only as they were designed/intended and with APS and beamline prescribed safeguards (e.g., PSS safety interlocks and administrative controls).

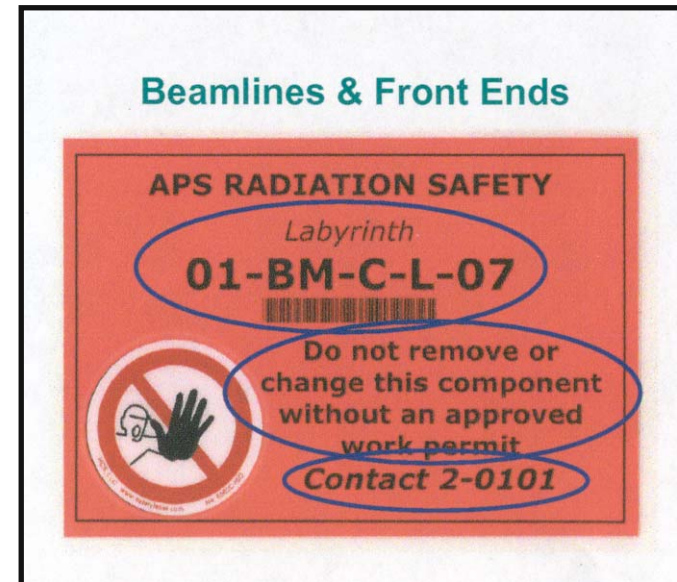
There may be specific cases where the beamline management may seek to have beamline personnel assist with work on radiation shielding. Requests for this permission may be made to the AES Division Director. Beamline personnel may only work on the shielding with the written authorization of the AES Division Director for a specific scope of work.

Why Are We Instituting A New Policy?

- We have an excellent safety record BUT.....
- Over the past few years we have had a few incidents that had the potential for jeopardizing the operation of this facility.
- Recently on beamlines:
 - Two unauthorized work incidents on beamline shutters.
 - Work scope creep whereby working on beamline optics extended to moving a component under configuration control.

New Radiation Safety System Signs (RSS) posted in January 2006

- The sign identifies the component as Radiation Shielding Component.
- It has the name of the component.
- It states that it cannot be moved or changed without an approved CCWP.
- It clearly identifies who needs to be contacted.



A Configuration Control Work Permit Must be Posted

- A Configuration Control Work Permit (CCWP yellow form) has to be filled out prior to start of work on any RSS component – and posted.

Configuration Control Work Permit 19321 | Baseline Front and Back M/MAC M/SS M/SS

STEP 1 - Work Description (to be completed by the requestor)

Requestor: Wiernerslage, Greg E. Date: 11/26/2005 Phone No: 0142 Organization: XPD-XFE
Location of Work: Sector No. 23 ID DM RISK LEVEL: High
Proposed start date: 12/03/2005 07:30 Required completion date:
Components: white shuttles/top invario shuttles/top invario collimator other shielding other
Task: Diagnostic/Monitoring/Lab/Inth Repair/Testing/Maintenance/1 for-1 new / modified installation
Job Description:
Change slow valve in 23 BM front end. This will require venting the entire front end. This will require that all water lines be disconnected and purged before the bake and then re-installed and bled after the bake. This will require that the BPM's be disconnected before the bake and re-installed after the bake. This will require that the lead Bremsstrahlung shields be removed to allow proper application.....
General comments/Potential Safety Issues:
Authorization to proceed: Release GL ADD/DOD

STEP 2 - Approval Requirements (Completed by floor coordinator)

Global: on-line off-line
Stations:
Enabled: A B C D E I X
Disabled: A B C D E I X
Approval required to start? Y N

	Y	N	Group	Validator Signature*	Date
Design Review	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
BCRRT	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
CCSM	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Floor Coordinator	<input checked="" type="checkbox"/>	<input type="checkbox"/>			12/24/05

Validation required to closeout? Y N

	Y	N	Group	Validator Signature*	Date
Survey & Alignment	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Safety Interlocks	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Mechanical/Weaver	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Vacuum	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Other: Ap 1/0pp	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
MCR Ops	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Beamline Rep.	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
HP	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
Radiation Scientist	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

Step - 3 - Authorization to start
1. Information (Specs, drawings, procedures, task, description, etc) is adequate to safely complete the work.
2. The requested work is consistent with an approved design, and,
3. I concur with the approved validation checklist requirements.
Responsible Engineer or Beamline Rep Approval Date: 12/03/05

Step - 4 Approvals to start
Approver Signature Date
Validator Signature* Date

Step - 5 Validations
Validator Signature* Date

Step - 6 - Close out complete/return to service
Validations are complete and the device/system is ready to return to service. Responsible Engineer or Beamline Rep
Approvals complete. CCSM or design weaver
Ready for service, on-line status restored. Floor Coordinator
Signature and date

Comments:
LPO 38 (Rev 12/01/04)

- Beamline personnel have taken this training and course completion test.

RSS training test - I understand that a “red tagged” component is part of RSS and that I can not modify, move, repair, remove, adjust, or work on the component without authorization.

Yes No

No work on a “red tagged” RSS component can be started without an approved and posted Configuration Control Work Permit (yellow sheet).

True False

Signature:

