

See "Instructions for Filling out the Work Permit" contained in the Work Planning and Control for Experiments and Operations Subject Area.

1. Work request WCC fills out this section. Standing Work Permit

Requester: Don Lynch	Date: 5/27/2016	Ext.: 2253	Dept/Div/Group: PO/PHENIX
Other Contact person (if different from requester): Carter Biggs			Ext.: 7515
Work Control Coordinator: Don Lynch		Start Date: 6/15/2016	Est. End Date: 9/1/2016
Brief Description of Work: Start of PHENIX Removal and epurposing; Start of Preparations for the PHENIX IR for sPHENIX Installation			
Building: 1008	Room: IR & AH	Equipment: PHENIX Detector	Service Provider: PHENIX Techs, Engineers & Subsystem Experts, PHENIX Electrician, C-A Carpenters and Riggers

2. WCC, Requester/Designee, Service Provider, and ESSH (as necessary) fill out this section or attach analysis

ESSH ANALYSIS							
Radiation Concerns	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Activation	<input type="checkbox"/> Airborne	<input type="checkbox"/> Contamination	<input type="checkbox"/> Radiation	<input type="checkbox"/> NORM	<input type="checkbox"/> Other
<input type="checkbox"/> Special nuclear materials involved, notify Isotope Special Materials Group				<input type="checkbox"/> Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer			
Radiation Generating Devices:	<input type="checkbox"/> Radiography		<input type="checkbox"/> Moisture Density Gauges	<input type="checkbox"/> Soil Density Gauges		<input type="checkbox"/> X-ray Equipment	
Safety and Security Concerns	<input type="checkbox"/> None		<input type="checkbox"/> Explosives	<input type="checkbox"/> Transport of Haz/Rad Material		<input type="checkbox"/> Pressurized Systems	
<input type="checkbox"/> Adding/Removing Walls or Roofs	<input type="checkbox"/> Critical Lift	<input type="checkbox"/> Fumes/Mist/Dust*		<input type="checkbox"/> Magnetic Fields*		<input type="checkbox"/> Railroad Work	
<input type="checkbox"/> Asbestos*	<input type="checkbox"/> Cryogenic	<input type="checkbox"/> Heat/Cold Stress		<input type="checkbox"/> Nanomaterials/particles*		<input checked="" type="checkbox"/> Rigging	
<input type="checkbox"/> Beryllium*	<input type="checkbox"/> Electrical	<input type="checkbox"/> Hydraulic		<input type="checkbox"/> Noise*		<input type="checkbox"/> Silica*	
<input type="checkbox"/> Biohazard*	<input checked="" type="checkbox"/> Elevated Work	<input type="checkbox"/> Lasers*		<input type="checkbox"/> Non-ionizing Radiation*		<input type="checkbox"/> Security Concerns	
<input type="checkbox"/> Chemicals/Corrosives*	<input type="checkbox"/> Excavation	<input type="checkbox"/> Lead*		<input type="checkbox"/> Oxygen Deficiency*		<input type="checkbox"/> Suspect/Counterfeit Items	
<input type="checkbox"/> Confined Space*	<input type="checkbox"/> Ergonomics*	<input type="checkbox"/> Material Handling		<input type="checkbox"/> Penetrating Fire Walls		<input type="checkbox"/> Vacuum	
Ladder Access Required: <input checked="" type="checkbox"/> Portable Ladder <input type="checkbox"/> Fixed Ladder- Status/Restrictions:							
* Safety Health Rep. Review Required		<input type="checkbox"/> Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM				<input type="checkbox"/> Other	
Environmental Concerns				<input checked="" type="checkbox"/> None		<input type="checkbox"/> Work impacts Environmental Permit No.	
<input type="checkbox"/> Atmospheric Discharges (rad/non-rad/GHG)		<input type="checkbox"/> Land Use Institutional Controls		<input type="checkbox"/> Soil Activation/contamination		<input type="checkbox"/> Waste-Mixed	
<input type="checkbox"/> Chemical or Rad Material Storage or Use		<input type="checkbox"/> Liquid Discharges		<input type="checkbox"/> Waste-Clean		<input type="checkbox"/> Waste-Radioactive	
<input type="checkbox"/> Cesspools (UIC)		<input type="checkbox"/> PCB Management		<input type="checkbox"/> Waste-Hazardous		<input type="checkbox"/> Waste-Regulated Medical	
<input type="checkbox"/> High water/power consumption		<input type="checkbox"/> Spill potential		<input type="checkbox"/> Waste-Industrial		<input type="checkbox"/> Historical Environmental Hazards	
Waste disposition by: <input type="checkbox"/> Other							
Pollution Prevention (P2)/Waste Minimization Opportunity: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				Environmental Preferable Products Available: <input type="checkbox"/> No <input type="checkbox"/> Yes			
FACILITY CONCERNS				<input checked="" type="checkbox"/> None <input type="checkbox"/> Intermittent Energy Release			
<input type="checkbox"/> Access/Egress Limitations		<input type="checkbox"/> Electrical Noise		<input type="checkbox"/> Potential to Cause a False Alarm		<input type="checkbox"/> Vibrations	
<input type="checkbox"/> Credited Controls (Use USI Process)		<input type="checkbox"/> Impacts Facility Use Agreement		<input type="checkbox"/> Temperature Change		<input type="checkbox"/> Other	
<input type="checkbox"/> Configuration Management		<input type="checkbox"/> Maintenance Work on Ventilation Systems		<input type="checkbox"/> Utility Interruptions			
WORK CONTROLS							
Work Practices							
<input type="checkbox"/> None		<input type="checkbox"/> Exhaust Ventilation		<input checked="" type="checkbox"/> Lockout/Tagout		<input type="checkbox"/> Spill Containment	
<input checked="" type="checkbox"/> Back-up Person/Watch		<input type="checkbox"/> HP Coverage		<input type="checkbox"/> Posting/Warning Signs		<input type="checkbox"/> Time Limitation	
<input type="checkbox"/> Barricades		<input type="checkbox"/> IH Survey		<input type="checkbox"/> Scaffolding-req's inspection		<input type="checkbox"/> Warning Alarm (i.e. "high level")	
						<input type="checkbox"/> Electrical Inspection Required	
Personal Protective Equipment							
<input type="checkbox"/> None		<input type="checkbox"/> Ear Plugs		<input checked="" type="checkbox"/> Gloves, as necessary		<input type="checkbox"/> Lab Coat	
<input type="checkbox"/> Coveralls		<input type="checkbox"/> Ear Muffs		<input type="checkbox"/> Goggles		<input type="checkbox"/> Respirator*	
<input type="checkbox"/> Disposable Clothing		<input type="checkbox"/> Face Shield		<input checked="" type="checkbox"/> Hard Hat, as req'd		<input type="checkbox"/> Shoe Covers	
						<input checked="" type="checkbox"/> Safety Shoes, as req'd	
						<input type="checkbox"/> High visibility cloths/vest	
						<input type="checkbox"/> Other	
Permits Required (Permits must be valid when job is scheduled.)							
<input checked="" type="checkbox"/> None		<input type="checkbox"/> Cutting/Welding		<input type="checkbox"/> Impair Fire Protection Systems			
<input type="checkbox"/> Concrete/Masonry Penetration		<input type="checkbox"/> Digging/Core Drilling		<input type="checkbox"/> Rad Work Permit-RWP No			
<input type="checkbox"/> Confined Space Entry		<input type="checkbox"/> Electrical Working Hot		<input type="checkbox"/> Other Confined Space 2A certification			
Dosimetry/Monitoring							
<input checked="" type="checkbox"/> None		<input type="checkbox"/> Heat Stress Monitor		<input type="checkbox"/> Real Time Monitor		<input type="checkbox"/> TLD	
<input type="checkbox"/> Air Effluent		<input type="checkbox"/> Noise Survey/Dosimeter		<input type="checkbox"/> Self-reading Pencil Dosimeter		<input type="checkbox"/> Waste Characterization	
<input type="checkbox"/> Ground Water		<input type="checkbox"/> O ₂ /Combustible Gas		<input type="checkbox"/> Self-reading Digital Dosimeter		<input type="checkbox"/> Other	
<input type="checkbox"/> Liquid Effluent		<input type="checkbox"/> Passive Vapor Monitor		<input type="checkbox"/> Sorbent Tube/Filter Pump			
Training Requirements (List specific training requirements)							
PHENIX Awareness, C-A Access, (where appropriate: Crane Operator, Fork lift Operator, Working at heights, Electrical Safety I, LOTO)							
Work screening has identified the following as the reason for permitted work:				When work is categorized as worker planned work and a permit is used only the following signatures are required: (Although allowed, there is no need to use back of form)			
<input type="checkbox"/> ESSH				WCC:		Date:	
<input type="checkbox"/> Complexity				Service Provider:		Date:	
<input checked="" type="checkbox"/> Work Coordination				Authorization to start:		Date:	
<input checked="" type="checkbox"/> Permit Not Required (Sections 3 through 7 optional)				(Department/Division, or their equivalent, Sup/WCC/Designee)			

3. Both work requester and service provider contribute to work plan (use attachments for detailed plans)

Work Plan (procedures, timing, equipment, scheduling, coordination, notifications, and personnel availability need to be addressed in adequate detail): See attached work plan and procedure				
Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring) None				
Notifications to operations and Operational Limits Requirements: None				
Post Work Testing, Notification or Documentation Required: See Attached Plan				
Job Safety Analysis Required: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			Review Done: <input checked="" type="checkbox"/> in series <input type="checkbox"/> team	
Reviewed by: * Primary Reviewer signature (not required for Worker Planned Work) means that the Review Team members were appropriate for the work that was planned, the Team visited the job site, hazards and risks that could impact ESSH have been considered and controls established according to BNL requirements. In addition, this signature indicates that applicable JRAs, FRAs, as well as other planning documents have been reviewed and training requirements have been identified and recorded on this permit.				
Title	Name (print)	Signature	Life #	Date
ES&H Professional				
F&O Facility Project Manager				
Service Provider				
Work Control Coordinator	Don Lynch		20146	
Safety Health Representative				
Research Space Manager				
Other				
Other				
Required Walkdown Completed				
*Primary Reviewer				

4. Job site personnel (Supervisor and workers) fill out this section.

Note: Signature indicates personnel performing work have read and understand the hazards and permit requirements (including any attachments) and all training required for this permit is current/complete. Job Supervisor/Contractor Supervisor signatures also includes verification that worker training required for this permit is current/complete.			
Job Supervisor:		Contractor Supervisor:	
Workers:	Life#:	Workers :	Life#:
Workers are encouraged to provide feedback on ESSH concerns or on ideas for improved job work flow. Use feedback form or space below.			

5. Department/Division, or their equivalent, Line Manager or Designee

Conditions are appropriate to start work: (Permit has been reviewed, work controls are in place and site is ready for job.)			
Name:	Signature:	Life#:	Date:

6. Worker provides feedback.

Worker Feedback (use attached sheets as necessary)
a) WCM/WCC: Are there any changes as a result of worker feedback? <input type="checkbox"/> Yes <input type="checkbox"/> No
Note: See Work Planning and Control for Experiments and Operations Subject Area section 2.6.

7. Post Job Review/Closeout: Work Control Coordinator (authorizing dept.) checks quality of completed permit and ensures the work site is left in an acceptable condition. (WCC can delegate clean up of job site to work supervisor.) The WCC ensures that the change process to update drawings, placards, postings, procedures, etc., is initiated, if necessary.

Name:	Signature:	Life#:	Date:
Comments:			

Start of PHENIX Retirement and Refurbishment (R&R) Checklist, 2016

The following standard shutdown tasks are to be performed in precisely the order indicated in accordance with the indicated PHENIX Procedures (where indicated) or otherwise best practices in accordance with BNL standards and training for “worker planned work”, as appropriate. These tasks are to be accomplished in accordance with the latest PHENIX R&R schedule as indicated in the current PHENIX technical support weekly planning meeting (see PHENIX Internal web site, systems engineering page for latest information). PHENIX technicians shall make certain that all of their required training is up to date, all equipment requiring certifications and/or calibration is up to date, and that all other equipment and tools are operating within normal operating parameters and in accordance with all BNL, CAD and PHENIX safety requirements.

BNL technicians and engineers shall also make certain that all non-BNL personnel working at PHENIX during the 2016 R&R are appropriately trained for the tasks they will be performing, that all tasks have been properly reviewed and planned, and that all required permits are in place prior to commencement of such tasks.

Abbreviations and acronyms used in this document:

- AH - PHENIX assembly hall section of building 1008
- IR - Interaction region section of building 1008
- EC - East carriage detector structural support
- WC - West carriage detector structural support
- R&R - PHENIX Retirement and Refurbishment project
- C-A - Collider Accelerator Department
- TOF – Time of Flight detector subsystem
- MuID – Muon Identification detector subsystem
- BNL – Brookhaven National Laboratory

The following are the standard start of shutdown tasks typical after each PHENIX run (which will be employed in essentially the same manner for the start of the PHENIX R&R effort) and the PHENIX procedures for these tasks. All PHENIX personnel involved in the standard initial tasks shall familiarize themselves with the appropriate

procedures prior to commencing these tasks. The procedures are linked on the PHENIX internal web site, engineering section

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

(Note: You can also find the 2016 PHENIX R&R schedule linked on this page.)

1. Immediately after the end of Run 16, open the plug door (PP-2.5.3.14-10) raise the WC access platforms (PP-2.5.5.1-02) and open the east and west carriages (PP-2.5.5.1-01 and PP-2.5.5.2-01).
2. LOTO all PHENIX detector magnets.
3. Place all PHENIX electronics in Summer shutdown safe modes.
4. Purge all flammable gas PHENIX detectors for a minimum of 36 hours.
5. After the full minimum 36 hours of flammable gas purge has been completed, place the PHENIX safety systems in bypass mode.
6. Request removal of radiation interlocks by C-A liaison engineer.
7. Open Large rolling shield wall (PP-2.5.5.2-02)
8. Disassemble large rolling shield wall and base and store for duration of shutdown (Note: C-A liaison engineer to plan this work and coordinate with riggers).
9. Disconnect EC lift wiring and TOF blower wiring (PHENIX electrician).
10. Fold the EC scaffolding, remove the EC lift and Ladder (Note: C-A liaison engineer to plan this work and coordinate with riggers and carpenters).
11. Remove the MuID Collar (PP-2.5.5.4-25)
12. Disconnect gas sniffers, water, elect., gas, fibers from EC in preparation for move to AH.
13. Move the EC to the AH. (PP-2.5.5.1-01, PP-2.5.5.2-01)
14. Install IR floor plates over EC openings.
15. Move tracks and 20 ton cart to IR side of EC.

16. Move the MuID collar to the AH. (Note: the MuID collar sections are not to be removed from the Assembly Hall at this time. These collar sections are likely slightly activated and will need to be screened for such prior to final disposition. Refer to PHENIX work permit SDD-2016-3 for further information)

16. Move manlift to IR side of EC.

All other specific tasks for the 2016 PHENIX R&R project which are to be performed subsequently and/or simultaneously to the tasks described herein shall be individually evaluated for training requirements, permit requirements and planned in accordance with PHENIX, C-A and BNL standard practices as described in PHENIX Procedure PP-2.5.6.1-2.