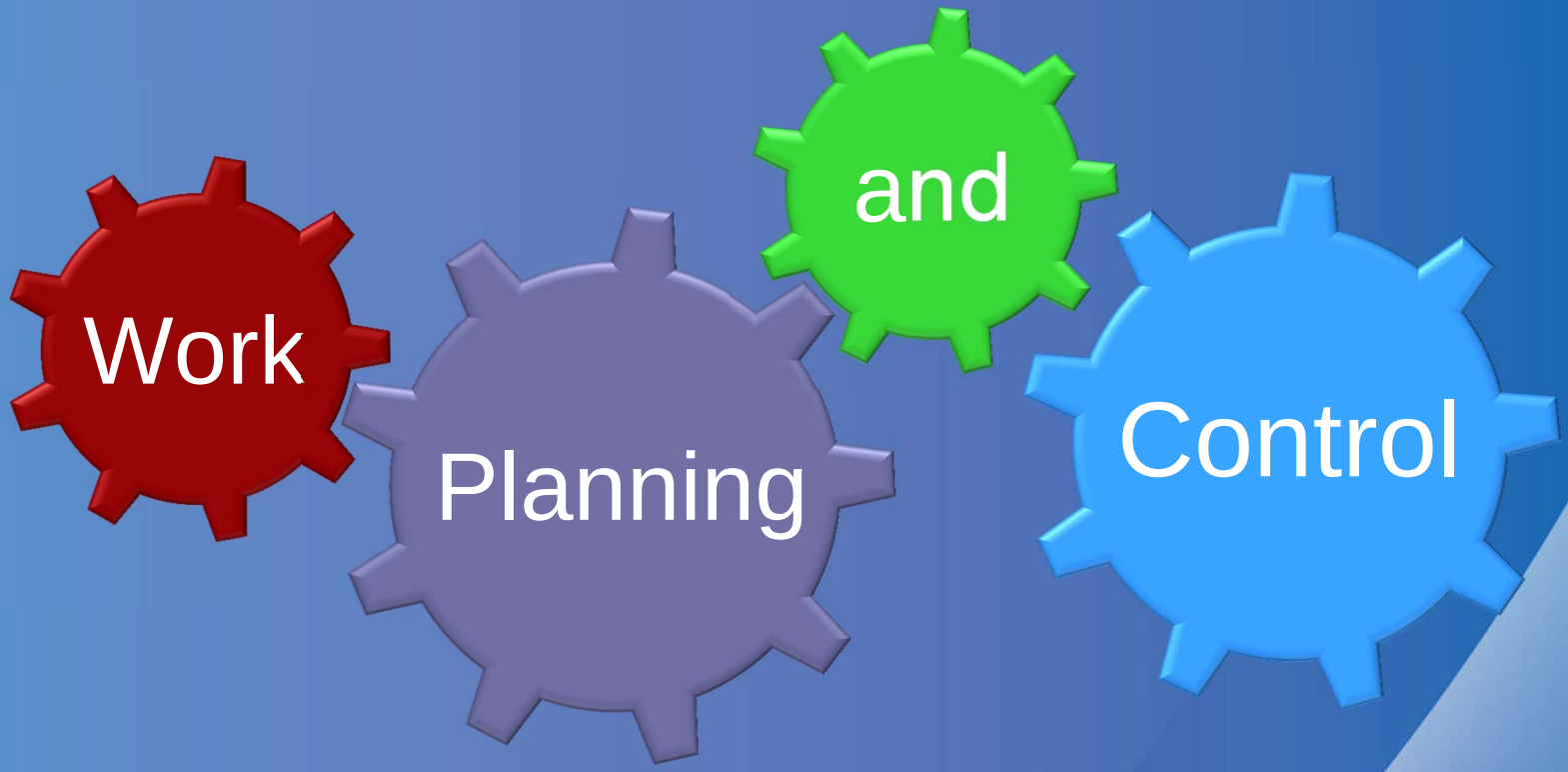


An Introduction

TQ-WORKPLAN-C
October 30, 2015

Instructor: Phil Harrington
x5669

BROOKHAVEN NATIONAL LABORATORY
a passion for discovery

Office of Science
U.S. DEPARTMENT OF ENERGY

Why Are You Here?

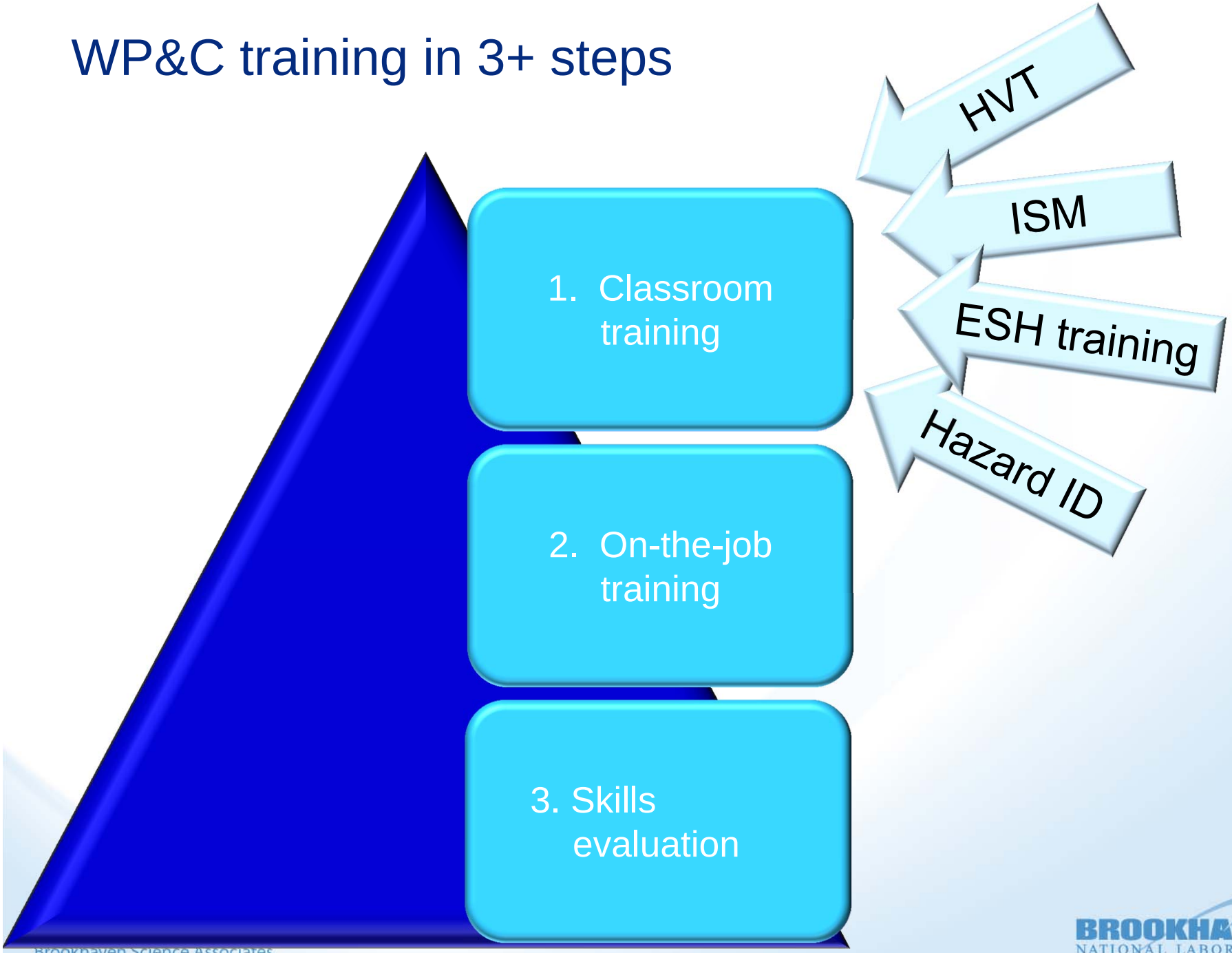
Recent events

- Tree cutting operation
- Fall from scissor lift
- Laser beam misalignment
- Electrical shocks

Causes:

- Inconsistent level of work planning
- Inconsistent understanding of Work Planning and Control process
- Inconsistent understanding of responsibilities of the WCM, WCC, and Primary Reviewers

WP&C training in 3+ steps



Learning Objectives

At the completion of this course, you will be able to:

- Define the role and responsibilities of the WCC, WCM, Primary Reviewers, and Review Teams
- Define the three categories of work in the WP&C process
- Discuss the requirements for working off-site
- Identify key steps in the work planning process
- Explain the evaluation process that Work Control Managers will use to qualify Work Control Coordinators
- Describe the process for analyzing work environments and jobs for hazards/mitigation
- Evaluate work for hazards and controls, integrating the five core functions of ISM into the Work Permit review process
- Write a Work Permit for a job scenario

Review: Integrated Safety Management

ISM's five "Core Functions"

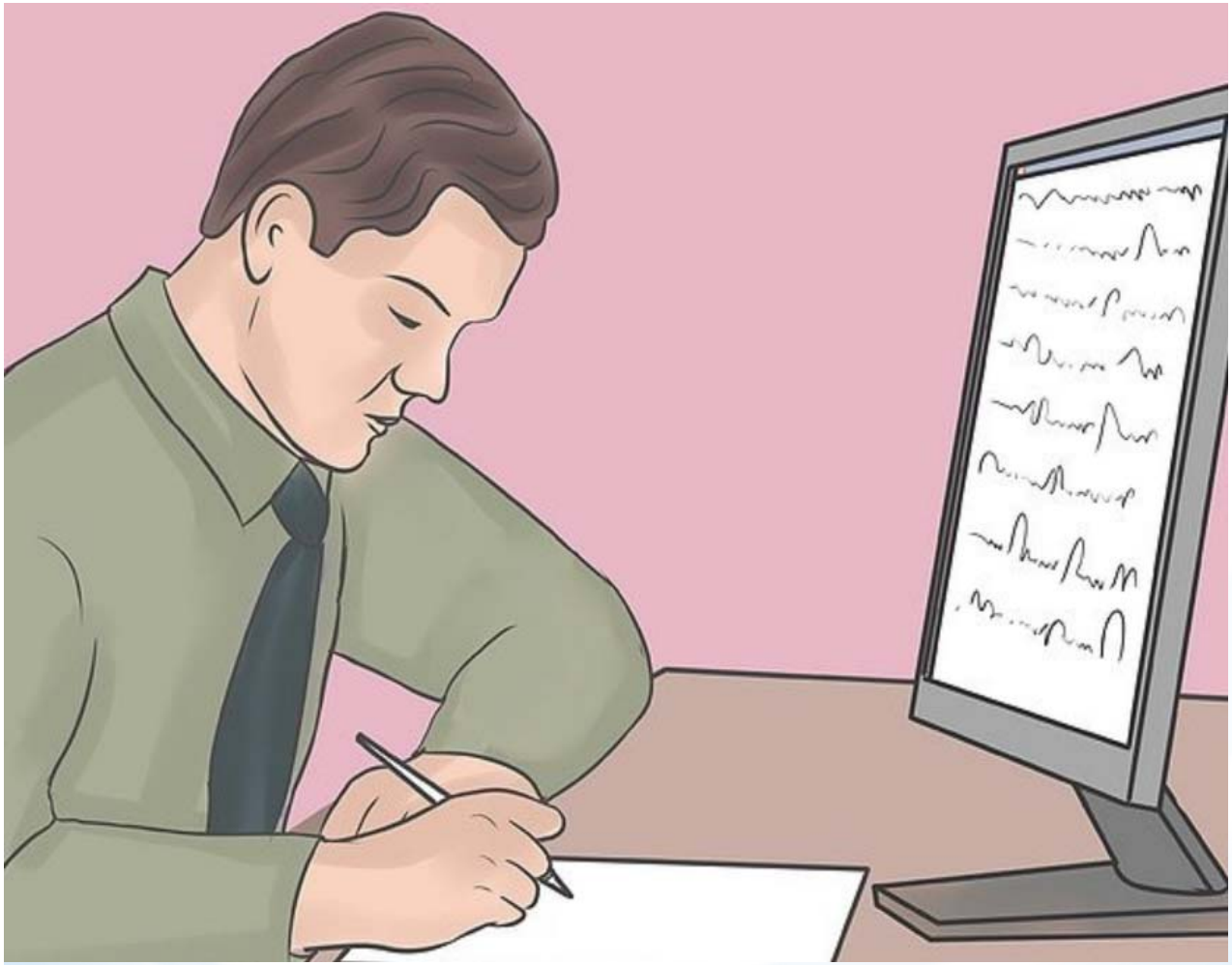
1. Define the Scope of Work
2. Analyze the Hazards
3. Develop and Implement Hazard Controls
4. Perform Work within Controls
5. Provide Feedback and Continuous Improvement

"Plan your work and work your plan"

Review: Hazard Identification

1. Imagination helps you consider every possibility and to possibly recognize what you do not see
2. Use the available hazard identification tools
3. Ask: What can go wrong?
   - How can I/we get hurt?
   - What has happened in the past?

Why Work Planning and Control?



- Identify the scope of work
- Prioritize tasks
- Enhance safety of the worker(s)
- Reduce slip-ups and oversights
- Recognize unexpected changes
- Improve productivity

Why Work Planning and Control?

1. Experimental Safety Review
2. Work Planning and Control for Operations
3. Worker Planned Work
4. Work Observations
5. Off-site Work

BROOKHAVEN NATIONAL LABORATORY *Standards-Based Management System* U.S. DEPARTMENT OF ENERGY

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[Introduction] [Contents] [Forms/Exhibits] [References] [Definitions] [Instructions] [Keywords] [Revision History]

Management System: Work Planning and Control

Subject Area: Work Planning and Control for Experiments and Operations

VIEW/PRINT ALL (No Exhibits and Forms)

Effective Date: **Apr 11, 2014** (Rev 9.1) Periodic Review Due: **Sep 26, 2014**	Subject Matter Expert: Raymond Costa	Management System Executive: Raymond Costa	Management System Steward: Lanny Bates

Introduction

The purpose of this subject area is to establish requirements at Brookhaven National Laboratory (BNL) so that all work is properly managed by using a level of planning and control commensurate to the Environment, Safety, Security, and Health (ESSH) hazards, job complexities, and work coordination needs.

Line management is directly responsible for the protection of the public, the workers, and the environment.

This subject area establishes work control processes based on the Integrated Safety Management (ISM) Core Functions to define the scope of work, identify the hazards, develop controls, work within the controls, and provide feedback for continuous improvement. The subject area provides a graded approach to manage a wide range of operational and experimental activities from routine to highly complex, and integrates other safety practices and subject areas such as hazard analysis tools, training requirements, and environmental management into work planning. For this subject area, "work" is defined as the activities that involve the design, set-up, operation, maintenance, modification, construction, demolition, or decommissioning of facilities, equipment, or experiments by BNL or non-BNL staff.

Roles and responsibilities

What are yours?

Roles and responsibilities

Work Control Manager

- *Appoint WCCs for their Department/Division*
- *Ensure the WCCs are adequately trained*
- *Maintain a roster of WCCs in their Department/Division*
- *Ensure that appropriate personnel, within their Department/Division, are familiar with the requirements of the WP&C Subject Area*
- *Establish periodic monitoring of system*
- *Appoint Primary Reviewers for their Department/Division; maintain a roster of the Primary Reviewers*
- *Serve as a member of Work Permit Walk Down and Review Teams*
- *Assist the supervisors and WCCs in assuring work is being conducted according to approved plans*
- *Incorporate appropriate worker feedback into WP&C processes*

Roles and responsibilities

Work Control Coordinator

- *Screen all work requests*
- *Establish a work-request system*
- *Inform appropriate personnel (ERC, FPM, etc.) of any task that affects experimental operations, FUA*
- *Maintain Work Permit Logbook*
- *Coordinate and assemble Walk-Down Teams*
- *Serve as a member of Walk-Down and Review Teams*
- *Categorizes or assists the Walk-Down Team in categorizing Work Request/Permits*
- *Assist supervisors in assuring that work is being completed according to approved plans*
- *As appropriate, perform "Work in Progress" (real time) reviews of complex tasks.*
- *Solicit feedback on the WP&C process*
- *Perform Work Permit close out activities*

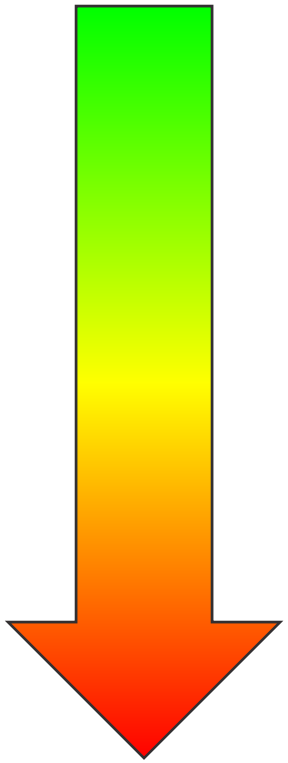
Roles and responsibilities

Primary Reviewer

- *Ensure compliance, within assigned area, to the Work Planning and Control for Experiments and Operations Subject Area, Section 2.4 Permit Planned Work Hazard Identification, Analysis and Controls.*
- *For each Work Permit reviewed and approved, conduct an independent review of the work plan to ensure that:*
  - *Review Team members were appropriate*
  - *Hazards and risks that could impact ESS&H have been considered, identified, and addressed, and*
  - *Review Team member(s) visited the job site*

Three approaches for performing work

- Worker Planned
- Prescribed
- Permit Planned



ESS&H hazard

complexity

coordination

Worker-Planned Work

Jobs that are:

- Routine
- Low hazard
- Day-to-day activities

…and the worker's:

- Skill level and experience with the task
- Ability to complete the task safely
- Training to accomplish the work

How would YOU determine this?

Slide 14

RRC1 We also need to talk about the skill level of individual:

Skill level
Experience with the task
Ability to complete the task safely
Training to accomplish the work
Understanding the requirements of this section.
Ray Costa, 9/11/2014

Prescribed Work

An existing, formal set of instructions or guidelines that has analyzed the hazards and established controls for the task

- Standard Operating Procedures
- Contractor Health and Safety Plan (HASP)
- Contractor procedure
- Operating/maintenance manual

A New York Apple Country Recipe

CLASSIC APPLE PIE

INGREDIENTS

6 cups New York State apples thinly sliced & peeled
1/4 cup of sugar
2 tablespoons of flour
3/4 teaspoon cinnamon
1/4 teaspoon salt
1/8 teaspoon nutmeg
1 tablespoon lemon juice

DIRECTIONS

Use your favorite pie crust whether it's a treasured family recipe or the quick and easy refrigerated pie crusts available in the supermarket. This recipe makes a two-crust pie in a 9-inch pan.

Heat oven to 425 degrees. Prepare pie crust and place crust in pie pan, pressing firmly against sides and bottom. Trim crust even with the pan edge. Combine all filling ingredients in a large bowl. Mix lightly. Fill pie crust and place second crust over filling. Wrap excess top crust under the bottom crust edge. Press edges together to seal and flute. Cut slits in top crust. Cover edge of crust with strips of foil for the first 25 minutes of baking. Bake for 40 to 45 minutes or until crust is golden brown.

Serves 8

Permit-Planned Work

Use Work Permit Form whenever:

- ESSH, and/or
- Work complexity, and/or
- Work coordination

do not have sufficient barriers to reduce the hazards to acceptable levels **and** the work is not covered by prescribed work documents.

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Work Permit # ____
Work Order # ____
Job# ____ Activity# ____

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:	Date:	Ext.:	Dept/Div/Group:
Other Contact person (if different from requester):			Ext.:
Work Control Coordinator:		Start Date:	Est. End Date:
Brief Description of Work:			
Building:	Room:	Equipment:	Service Provider:

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

ESSH ANALYSIS

Radiation Concerns ☐ None ☐ Activation ☐ Airborne ☐ Contamination ☐ Radiation ☐ NORM ☐ Other

☐ Special nuclear materials involved, notify Isotope Special Materials Group ☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer

Radiation Generating Devices: ☐ Radiography ☐ Moisture Density Gauges ☐ Soil Density Gauges ☐ X-ray Equipment

Safety and Security Concerns ☐ None ☐ Explosives ☐ Transport of Haz/Rad Material ☐ Pressurized Systems

☐ Adding/Removing Walls or Roofs	☐ Critical Lift	☐ Fumes/Mist/Dust*	☐ Magnetic Fields*	☐ Railroad Work
☐ Asbestos*	☐ Cryogenic	☐ Heat/Cold Stress	☐ Nanomaterials/particles*	☐ Rigging
☐ Beryllium*	☐ Electrical	☐ Hydraulic	☐ Noise*	☐ Silica*
☐ Biohazard*	☐ Elevated Work	☐ Lasers*	☐ Non-ionizing Radiation*	☐ Security Concerns
☐ Chemicals/Corrosives*	☐ Excavation	☐ Lead*	☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items
☐ Confined Space*	☐ Ergonomics*	☐ Material Handling	☐ Penetrating Fire Walls	☐ Vacuum

Ladder Access Required: ☐ Portable Ladder ☐ Fixed Ladder– Status/Restrictions:

* Safety Health Rep. Review Required ☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM ☐ Other

Environmental Concerns ☐ None ☐ Work impacts Environmental Permit No.

☐ Atmospheric Discharges (rad/non-rad/GHG)	☐ Land Use Institutional Controls	☐ Soil Activation/contamination	☐ Waste-Mixed
☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean	☐ Waste-Radioactive
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous	☐ Waste-Regulated Medical
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial	☐ Historical Enviornmental Hazards
Waste disposition by:			☐ Other

Pollution Prevention (P2)/Waste Minimization Opportunity: ☐ No ☐ Yes Environmental Preferable Products Available: ☐ No ☐ Yes

FACILITY CONCERNS ☐ None ☐ Intermittent Energy Release

☐ Access/Egress Limitations	☐ Electrical Noise	☐ Potential to Cause a False Alarm	☐ Vibrations
☐ Credited Controls (Use USI Process)	☐ Impacts Facility Use Agreement	☐ Temperature Change	☐ Other
☐ Configuration Management	☐ Maintenance Work on Ventilation Systems	☐ Utility Interruptions	

WORK CONTROLS

Work Practices

☐ None	☐ Exhaust Ventilation	☐ Lockout/Tagout	☐ Spill Containment	☐ Security (see Instruction Sheet)
☐ Back-up Person/Watch	☐ HP Coverage	☐ Posting/Warning Signs	☐ Time Limitation	☐ Other
☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment

☐ None	☐ Ear Plugs	☐ Gloves	☐ Lab Coat	☐ Safety Glasses
☐ Coveralls	☐ Ear Muffs	☐ Goggles	☐ Respirator*	☐ Safety Harness

☐ Disposable Clothing ☐ Face Shield ☐ Hard Hat ☐ Shoe Covers ☐ Safety Shoes ☐ High visibility cloths/vest ☐ Other

Permits Required (Permits must be valid when job is scheduled.)

☐ None	☐ Cutting/Welding	☐ Impair Fire Protection Systems
☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other

Dosimetry/Monitoring

☐ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
☐ Liquid Effluent	☐ Passive Vapor Monitor	☐ Sorbent Tube/Filter Pump	

Training Requirements (List specific training requirements)

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)**	
☐ **ESSH**	WCC:	Date:
☐ **Complexity**	Service Provider:	Date:
☐ **Work Coordination**	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

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Sidebar: Working Off-Site

Prior to working off-site, the WCM/WCC and ESH Representative/Coordinator meet with the traveler to discuss the following:

- What is the scope of work to be performed?
- What are the known hazards and concerns about the work to be performed?
- What controls should be in place to perform the work safely?
- The work planning process in place at the off-site location? Will we need to provide our own work plan?
- What training is required by the off-site worker?

Sidebar: Working Alone

BNL Working Alone Guidance

Purpose: To assist supervisors in determining whether activities performed by workers should be performed alone

Working alone has special hazards. If there is a need to work alone, consider what would be done if an emergency/accident occurred. When working alone is deemed necessary, line management is responsible for taking sufficient measures to protect employees and the institution.

This guidance has been assembled to assist supervisors in assessing the risk, establishing and verifying controls associated with the special hazards of working alone when it is deemed necessary. This guidance may assist supervisors in determining that workers should not work alone.

Working alone is defined as work in circumstances/location where assistance would not be readily available to a lone worker in case of emergency, injury, or illness; or, when working with a hazard that could incapacitate the worker so that he/she cannot "self-rescue" or activate emergency alarms. Furthermore, the worker is the only person in the work area and is not directly supervised or observed by another person at any time. This includes *working after hours* and *working in isolation*.

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- The WP&C Subject Area provides guidance to assist supervisors, both Science and Operations, in determining whether activities performed by workers should be performed alone.

Case Study 1: Move that Projector

- Job: Relocate projector to another classroom

Classifying a Job: How Do You Know?

General guidance

Check the boxes. If fewer checked than minimum, then the following work is considered greater than a worker planned and a work permit is required to properly plan work involving the following…

- *Safety, Security and Facility Concerns*
- *Environmental/Waste*
- *Radiation*
- *Complexity/Uncertainty*
- *Work Coordination*

Screening Tool for Worker Planned Work

Worker Planned Work can only be performed if the required number of barriers (controls) are in place as determined by the following screenings. All other work will require a work permit, prescribed work procedure, and/or additional controls.

Instructions: For each job/task/activity that will be performed, evaluate the ESSH, Complexity and Coordination attributes against the questions below. Unless the indicated minimum number of control questions are answered "YES" a work permit, prescribed work procedure, and/or additional controls are required. Note: A "NO" answer for a specific attribute does not mean the attribute is not required, but that it is being addressed by or included in another attribute.

1. **ESSH**: (Check this box if there are no ESSH hazards ☐) ESSH hazards are clearly understood; controls are established and implemented, there are no security concerns, **and at least 4 of the following control questions are answered "YES"**:

Yes	No	
		Have all known hazard(s) and associated control(s) been evaluated using an institutional document (e.g., ESR, JRA, JSA, PHA, HASP or SWP) and have control(s) been implemented? (REQUIRED FOR ALL CONTRACTOR/VENDOR WORK.)
		Have all known hazard(s) and control(s) been documented (e.g., organizational procedure) and worker's provided verifiable training in how to properly verify hazard(s) and implement the required control(s)?
		Does an SBMS Subject Area(s) exist for the hazard(s) and workers have verifiable training in its implementation?
		Will the cognizant supervisor or engineer describe the job and its associated hazards and controls to workers and provide them an opportunity to ask questions prior to the start of work (e.g., job walk down, pre-job brief, Toolbox)?
		Will a dedicated and knowledgeable (e.g., trained to recognize the hazard(s) of the job) work oversight person be present at all times throughout the job?
		Will Contractor Vendor Orientation (CVO), Guest Site Orientation (GSO), or site-specific training be completed, or will an escort be assigned, for by those in need prior to start of work? (REQUIRED FOR ALL CONTRACTOR/VENDOR WORK)
		Will PPE be clearly identified for known hazard(s) and communicated (e.g., by supervisor, ESH, and/or area postings) to the worker(s) prior to commencement of work?
		Are engineered controls for known hazards in place and operational?

2. **Work Complexity**: All steps of the work to be accomplished are clearly understood by all workers involved, controls are established and implemented, **and at least 5 of the following control questions are answered "YES"**:

Yes	No	
		Does the work activity contain less than 15 undocumented steps to complete?
		Can the job be performed without a written procedure, permit, or documented checklist that is required by any applicable SBMS Subject Area or regulation (e.g., Complex LOTO procedure, 2C Confined Space Entry Permit, Energized Electrical Work Permit)?
		Have personnel been trained in the proper use and execution of equipment(s), process(es), task(s), and tool(s) used to perform this job?
		Are workers familiar with the work location?
		Is the equipment clearly labeled and is the work location clearly identified?
		Can the job be performed without stressor(s) (e.g., time pressure, excessive overtime, heat, cold, etc.) and without verification of the worker's Fit for Duty status under this/these stressor(s) for this job?
		Can the job be performed without ergonomic challenges (e.g., awkward positions, repetitive motions for long periods, contact stress, excessive force, and ladder work for long periods, etc.)?
		Can the job be performed without cross checking look-alike equipment and location (e.g., similar areas & equipment are easily identified)?
		Can the job be performed without independent testing or inspection required by procedure, SBMS Subject Area or regulation (e.g., electrical inspection)?

3. **Work Coordination**: Work does not involve a Credited Control (controls determined through a contractor safety analysis, such as that found in a Safety Assessment Document (SAD), to be essential for safe accelerator operation directly related to the protection of personnel or the environment. Also, Credited Controls are identified in a DOE approved document such as an Accelerator Safety Envelope (ASE)); work can be accomplished without coordination with other groups in the work area or without coordination with ESH personnel during the job/activity; **and at least 2 of the following control questions are answered "YES"**:

Yes	No	
		Has work has been scheduled through a maintenance coordinator or equivalent? (e.g., Research Space Manager, Cognizant Space Manager, Shop Supervisor)?
		Can work be performed without disabling, altering or changing an engineered safety related system (e.g., access controls, fire protection system, interlocks, fume hoods, shielding)?
		Will the work be conducted under one job supervisor for the entire job? (e.g., no supervisor/shift turnover during job)?

Slide 20

RRC5 We also need to discuss the preambles to the checked items, for example, before reviewing the barriers for ESSH, we must ensure "ESSH hazards are clearly understood; controls are established and implemented, there are no security concerns,"

Ray Costa, 9/11/2014

Your Results ?

Worker-Planned Work is Still Planned

Supervisor or designee assigns the work by considering the worker's:

- Skill level
- Experience with the task
- Ability to complete the task safely
- Training to accomplish the work

They do so by using/referring to:

- Job Training Assessment (JTA)
- Job Risk Assessment (JRA)
- etc.

Worker-Planned Work is Still Planned

Worker (and supervisor, as necessary)

- Conducts a walk-through
- Plans the work
- Identifies the hazards and appropriate hazard controls to be used
- Determines that he or she has the skill, experience, and training to perform the job safely

The best laid schemes
of mice and men
often go awry.
Robert Burns

Scope Creep: Changes in Work Plan?

- The WCC should
  - Amend the scope of the authorization document(s)
  - Review the work, with focus on new hazards identified and how they impact the remainder of the job, develop mitigation for the hazards, and revise the work plan as needed
  - Conduct a job briefing
    - new hazards identified
    - mitigation controls
    - training requirements
- Job Site Staff/Workers sign the revised document
- Department/Division Line Manager or designee, sign-offs on work authorization document
- The Line Manager or designee who originally authorized the start of work must initial next to original signature

Permit-Planned Work

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Work Permit # _____
Work Order # _____
Job# _____ Activity# _____

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:	Date:	Ext.:	Dept/Div/Group:
Other Contact person (if different from requester):			Ext.:
Work Control Coordinator:		Start Date:	Est. End Date:
Brief Description of Work:			
Building:	Room:	Equipment:	Service Provider:

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

ESSH ANALYSIS

Radiation Concerns	☐ None	☐ Activation	☐ Airborne	☐ Contamination	☐ Radiation	☐ NORM	☐ Other
☐ Special nuclear materials involved, notify Isotope Special Materials Group			☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer			
Radiation Generating Devices:	☐ Radiography		☐ Moisture Density Gauges		☐ Soil Density Gauges	☐ X-ray Equipment

Safety and Security Concerns	☐ None	☐ Explosives	☐ Transport of Haz/Rad Material	☐ Pressurized Systems
☐ Adding/Removing Walls or Roofs	☐ Critical Lift	☐ Fumes/Mist/Dust*	☐ Magnetic Fields*	☐ Railroad Work
☐ Asbestos*	☐ Cryogenic	☐ Heat/Cold Stress	☐ Nanomaterials/particles*	☐ Rigging
☐ Beryllium*	☐ Electrical	☐ Hydraulic	☐ Noise*	☐ Silica*
☐ Biohazard*	☐ Elevated Work	☐ Lasers*	☐ Non-ionizing Radiation*	☐ Security Concerns
☐ Chemicals/Corrosives*	☐ Excavation	☐ Lead*	☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items
☐ Confined Space*	☐ Ergonomics*	☐ Material Handling	☐ Penetrating Fire Walls	☐ Vacuum
Ladder Access Required: ☐ Portable Ladder	☐ Fixed Ladder– Status/Restrictions:			
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM			☐ Other

Environmental Concerns		☐ None	☐ Work impacts Environmental Permit No.
☐ Atmospheric Discharges (rad/non-rad/GHG)	☐ Land Use Institutional Controls	☐ Soil Activation/contamination	☐ Waste-Mixed
☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean	☐ Waste-Radioactive
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous	☐ Waste-Regulated Medical
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial	☐ Historical Enviornmental Hazards
Waste disposition by:			☐ Other
Pollution Prevention (P2)/Waste Minimization Opportunity: ☐ No ☐ Yes		Environmental Preferable Products Available: ☐ No ☐ Yes	

FACILITY CONCERNS	☐ None	☐ Intermittent Energy Release	
☐ Access/Egress Limitations	☐ Electrical Noise	☐ Potential to Cause a False Alarm	☐ Vibrations
☐ Credited Controls (Use USI Process)	☐ Impacts Facility Use Agreement	☐ Temperature Change	☐ Other
☐ Configuration Management	☐ Maintenance Work on Ventilation Systems	☐ Utility Interruptions	

WORK CONTROLS

Work Practices				
☐ None	☐ Exhaust Ventilation	☐ Lockout/Tagout	☐ Spill Containment	☐ Security (see Instruction Sheet)
☐ Back-up Person/Watch	☐ HP Coverage	☐ Posting/Warning Signs	☐ Time Limitation	☐ Other
☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment				
☐ None	☐ Ear Plugs	☐ Gloves	☐ Lab Coat	☐ Safety Glasses
☐ Coveralls	☐ Ear Muffs	☐ Goggles	☐ Respirator*	☐ Safety Harness
☐ Disposable Clothing	☐ Face Shield	☐ Hard Hat	☐ Shoe Covers	☐ Safety Shoes	☐ High visibility cloths/vest	☐ Other

Permits Required (Permits must be valid when job is scheduled.)		
☐ None	☐ Cutting/Welding	☐ Impair Fire Protection Systems
☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other

Dosimetry/Monitoring			
☐ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
☐ Liquid Effluent	☐ Passive Vapor Monitor	☐ Sorbent Tube/Filter Pump	

Training Requirements (List specific training requirements)

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)**	
☐ **ESSH**	WCC:	Date:
☐ **Complexity**	Service Provider:	Date:
☐ **Work Coordination**	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

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Case Study 2: Replace three relief valves

Task:

Remove and replace Low-Medium-High tank relief valves behind the Compressed Natural Gas (CNG) facility (Bldg 522).

- Valves and tanks in gated outdoor yard
- Line pressure = 2,800#

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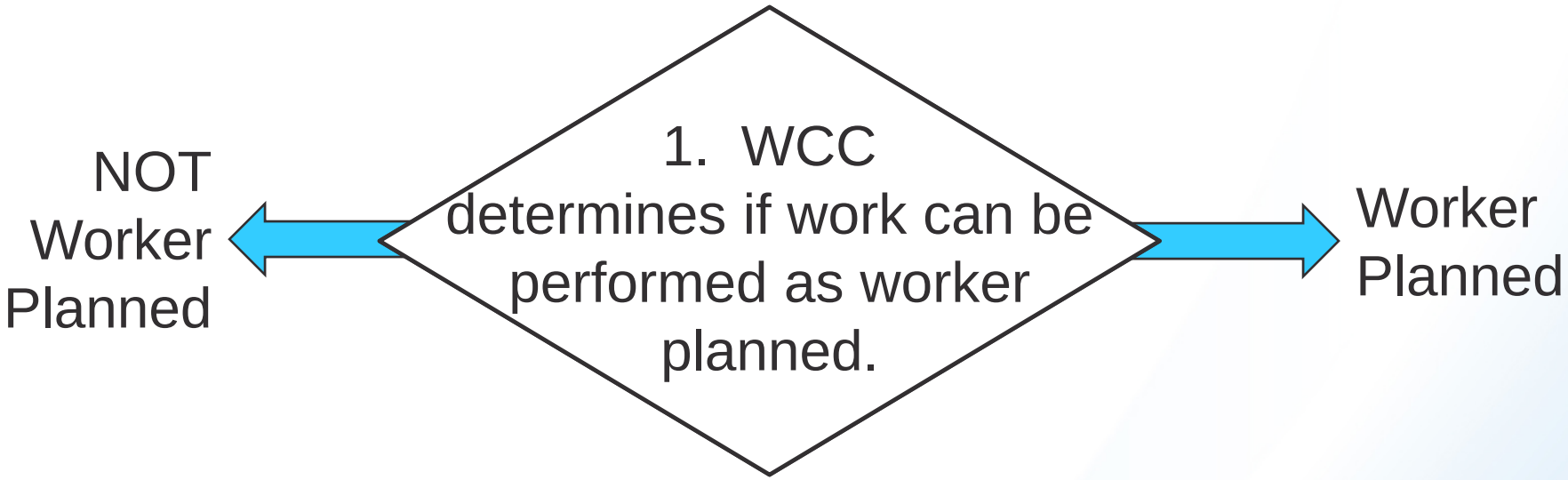
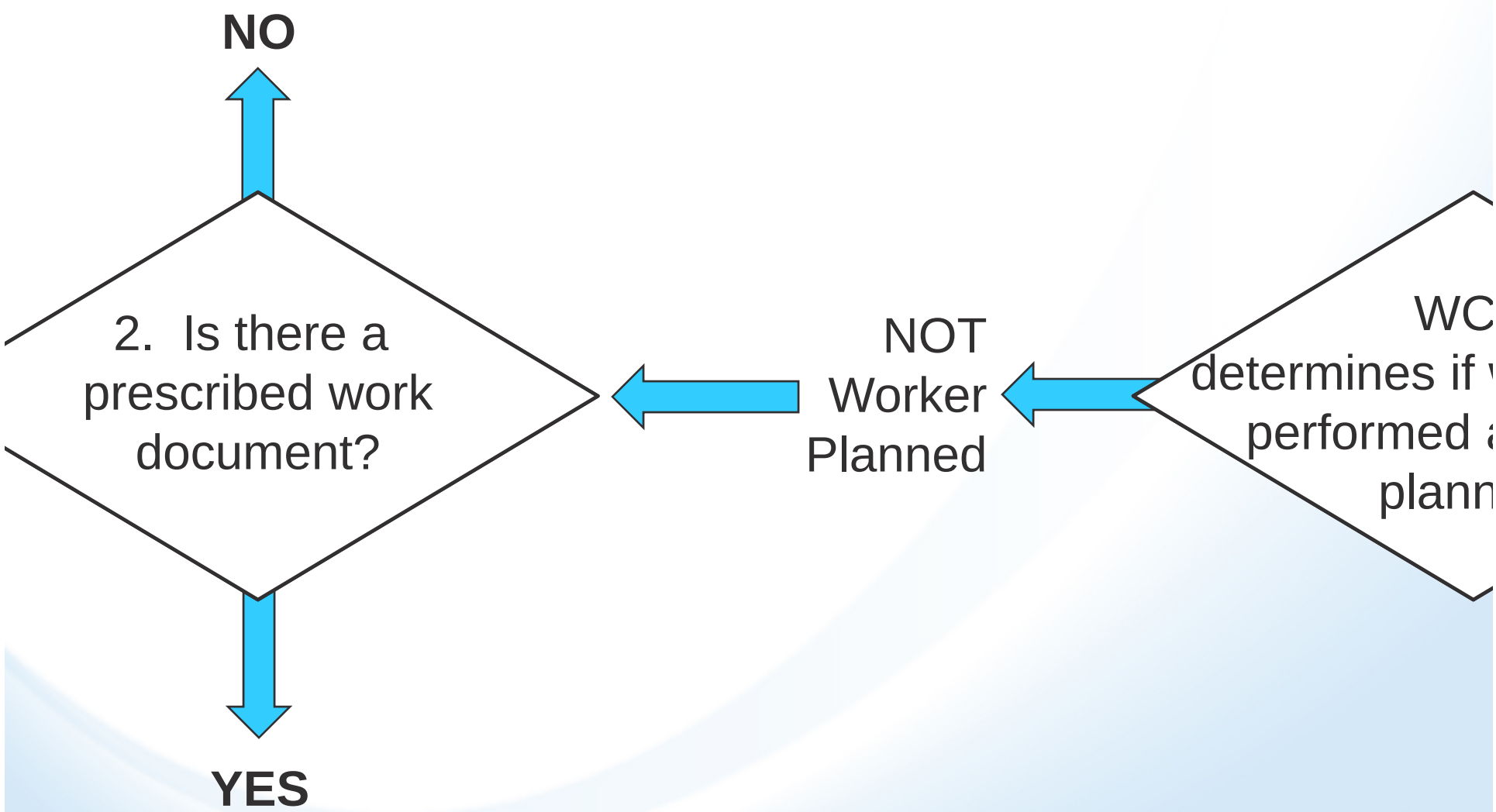
Step 1. Classify the Job



Step 1. Classify the Job



No? Then…

Complete a Work Permit

BROOKHAVEN NATIONAL LABORATORY

Work Permit # _____
Work Order # _____
Job# _____ Activity# _____

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:	Date:	Ext.:	Dept/Div/Group:
Other Contact person (if different from requester):			Ext.:
Work Control Coordinator:		Start Date:	Est. End Date:
Brief Description of Work:			
Building:	Room:	Equipment:	Service Provider:

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

ESSH ANALYSIS

Radiation Concerns	☐ None	☐ Activation	☐ Airborne	☐ Contamination	☐ Radiation	☐ NORM	☐ Other
☐ Special nuclear materials involved, notify Isotope Special Materials Group			☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer			
Radiation Generating Devices:	☐ Radiography		☐ Moisture Density Gauges		☐ Soil Density Gauges	☐ X-ray Equipment

Safety and Security Concerns	☐ None	☐ Explosives	☐ Transport of Haz/Rad Material	☐ Pressurized Systems
☐ Adding/Removing Walls or Roofs	☐ Critical Lift	☐ Fumes/Mist/Dust*	☐ Magnetic Fields*	☐ Railroad Work
☐ Asbestos*	☐ Cryogenic	☐ Heat/Cold Stress	☐ Nanomaterials/particles*	☐ Rigging
☐ Beryllium*	☐ Electrical	☐ Hydraulic	☐ Noise*	☐ Silica*
☐ Biohazard*	☐ Elevated Work	☐ Lasers*	☐ Non-ionizing Radiation*	☐ Security Concerns
☐ Chemicals/Corrosives*	☐ Excavation	☐ Lead*	☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items
☐ Confined Space*	☐ Ergonomics*	☐ Material Handling	☐ Penetrating Fire Walls	☐ Vacuum
Ladder Access Required: ☐ Portable Ladder	☐ Fixed Ladder-- Status/Restrictions:			
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM			☐ Other

Environmental Concerns	☐ None	☐ Work impacts Environmental Permit No.	
☐ Atmospheric Discharges (rad/non-rad/GHG)	☐ Land Use Institutional Controls	☐ Soil Activation/contamination	☐ Waste-Mixed
☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean	☐ Waste-Radioactive
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous	☐ Waste-Regulated Medical
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial	☐ Historical Enviornmental Hazards
Waste disposition by:			☐ Other
Pollution Prevention (P2)/Waste Minimization Opportunity: ☐ No ☐ Yes		Environmental Preferable Products Available: ☐ No ☐ Yes	

FACILITY CONCERNS	☐ None	☐ Intermittent Energy Release	
☐ Access/Egress Limitations	☐ Electrical Noise	☐ Potential to Cause a False Alarm	☐ Vibrations
☐ Credited Controls (Use USI Process)	☐ Impacts Facility Use Agreement	☐ Temperature Change	☐ Other
☐ Configuration Management	☐ Maintenance Work on Ventilation Systems	☐ Utility Interruptions	

WORK CONTROLS

Work Practices				
☐ None	☐ Exhaust Ventilation	☐ Lockout/Tagout	☐ Spill Containment	☐ Security (see Instruction Sheet)
☐ Back-up Person/Watch	☐ HP Coverage	☐ Posting/Warning Signs	☐ Time Limitation	☐ Other
☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment				
☐ None	☐ Ear Plugs	☐ Gloves	☐ Lab Coat	☐ Safety Glasses
☐ Coveralls	☐ Ear Muffs	☐ Goggles	☐ Respirator*	☐ Safety Harness
☐ Disposable Clothing	☐ Face Shield	☐ Hard Hat	☐ Shoe Covers	☐ Safety Shoes	☐ High visibility cloths/vest	☐ Other

Permits Required (Permits must be valid when job is scheduled.)		
☐ None	☐ Cutting/Welding	☐ Impair Fire Protection Systems
☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other

Dosimetry/Monitoring			
☐ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
☐ Liquid Effluent	☐ Passive Vapor Monitor	☐ Sorbent Tube/Filter Pump	

Training Requirements (List specific training requirements)

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)**	
☐ **ESSH**	WCC:	Date:
☐ **Complexity**	Service Provider:	Date:
☐ **Work Coordination**	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

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Completing the Work Permit

BROOKHAVEN NATIONAL LABORATORY

Work Permit # _____
Work Order # _____
Job# _____ Activity# _____

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

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

Requester:	Date:	Ext.:	Dept/Div/Group:
Other Contact person (if different from requester):			Ext.:
Work Control Coordinator:		Start Date:	Est. End Date:
Brief Description of Work:			
Building:	Room:	Equipment:	Service Provider:

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

ESSH ANALYSIS							
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☐ Special nuclear materials involved, notify Isotope Special Materials Group				☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer			
Radiation Generating Devices:	☐ Radiography		☐ Moisture Density Gauges		☐ Soil Density Gauges	☐ X-ray Equipment	
Safety and Security Concerns	☐ None		☐ Explosives		☐ Transport of Haz/Rad Material	☐ Pressurized Systems	
☐ Adding/Removing Walls or Roofs	☐ Critical Lift		☐ Fumes/Mist/Dust*		☐ Magnetic Fields*	☐ Railroad Work	
☐ Asbestos*	☐ Cryogenic		☐ Heat/Cold Stress		☐ Nanomaterials/particles*	☐ Rigging	
☐ Beryllium*	☐ Electrical		☐ Hydraulic		☐ Noise*	☐ Silica*	
☐ Biohazard*	☐ Elevated Work		☐ Lasers*		☐ Non-ionizing Radiation*	☐ Security Concerns	
☐ Chemicals/Corrosives*	☐ Excavation		☐ Lead*		☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items	
☐ Confined Space*	☐ Ergonomics*		☐ Material Handling		☐ Penetrating Fire Walls	☐ Vacuum	
Ladder Access Required: ☐ Portable Ladder ☐ Fixed Ladder– Status/Restrictions:							
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM					☐ Other	
Environmental Concerns			☐ None		☐ Work impacts Environmental Permit No.		
☐ Atmospheric Discharges (rad/non-rad/GHG)		☐ Land Use Institutional Controls			☐ Soil Activation/contamination	☐ Waste-Mixed	
☐ Chemical or Rad Material Storage or Use		☐ Liquid Discharges			☐ Waste-Clean	☐ Waste-Radioactive	

Completing the Work Permit

☐ Chemicals/Corrosives*	☐ Excavation	☐ Lead*	☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items
☐ Confined Space*	☐ Ergonomics*	☐ Material Handling	☐ Penetrating Fire Walls	☐ Vacuum
Ladder Access Required: ☐ Portable Ladder	☐ Fixed Ladder– Status/Restrictions:			
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM			☐ Other

Environmental Concerns	☐ None	☐ Work impacts Environmental Permit No.	
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☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean	☐ Waste-Radioactive
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous	☐ Waste-Regulated Medical
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial	☐ Historical Enviornmental Hazards
Waste disposition by:			☐ Other
Pollution Prevention (P2)/Waste Minimization Opportunity: ☐ No ☐ Yes		Environmental Preferable Products Available: ☐ No ☐ Yes	

FACILITY CONCERNS	☐ None	☐ Intermittent Energy Release	
☐ Access/Egress Limitations	☐ Electrical Noise	☐ Potential to Cause a False Alarm	☐ Vibrations
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☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

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☐ None	☐ Ear Plugs	☐ Gloves	☐ Lab Coat	☐ Safety Glasses
☐ Coveralls	☐ Ear Muffs	☐ Goggles	☐ Respirator*	☐ Safety Harness

☐ Disposable Clothing	☐ Face Shield	☐ Hard Hat	☐ Shoe Covers	☐ Safety Shoes	☐ High visibility cloths/vest	☐ Other

Permits Required (Permits must be valid when job is scheduled.)		
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☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other
Dosimetry/Monitoring		

Completing the Work Permit

☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment

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Dosimetry/Monitoring

☐ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
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Training Requirements (List specific training requirements)

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☐ **Complexity**	Service Provider:	Date:
☐ **Work Coordination**	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

Roles and responsibilities

Work Permit Review Team

1. WCC: you decide who's who
2. ES&H professional(s)/SME(s)
3. At least one other:
   - Worker representatives: strongly recommended
   - F&O Facility Project Manager
   - Research Space Manager
   - Operations professionals
   - Engineers
   - Service provider

Roles and responsibilities

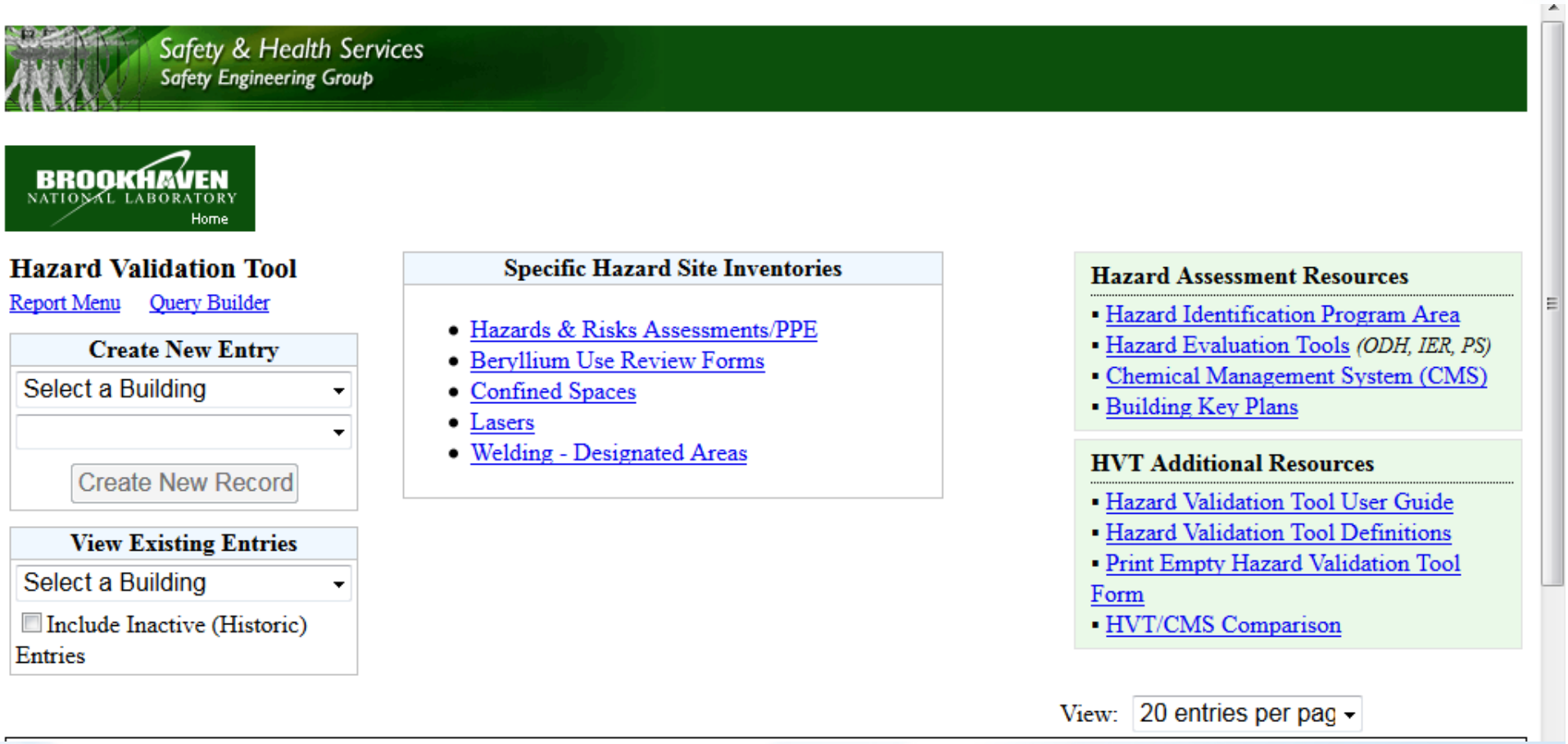
Work Permit Review Team

- Visits the job site
- Reviews and identifies the impact on operations, hazard classification, HPI considerations, safety envelope of the facility, and the Facility Use Agreement
- Reviews applicable Job/Facility Risk Assessments
- Performs an ESSH analysis (JSA/JRA/PHA/SWP)

Preferred approach
Review work permits in a team setting

Time to take a break!

Hazard Validation Tool



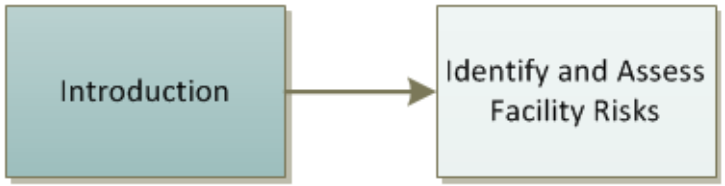
https://intranet.bnl.gov/esh/shsd/seg/HVT/Default.aspx

Hazard Inventories

You are here: BNL ➔ SBMS Home ➔ Facility Safety Management System ➔ Facility Hazard Analysis and Risk Assessment Subject Area

Facility Hazard Analysis and Risk Assessment Subject Area

Effective Date: **Apr 14, 2015** (Rev 3.0)
Periodic Review Due: **Oct 14, 2015**



What you may need

Where to next

BROOKHAVEN NATIONAL LABORATORY

SBMS Interim Procedure

Interim Procedure Number: 2015-001 **Revision:** 1.0 (Subject Area Revision 3.0)

Title: Facility Hazard Analysis and Risk Assessment

Subject Matter Expert: Wai-Lin Ng

Management System: Facility Safety

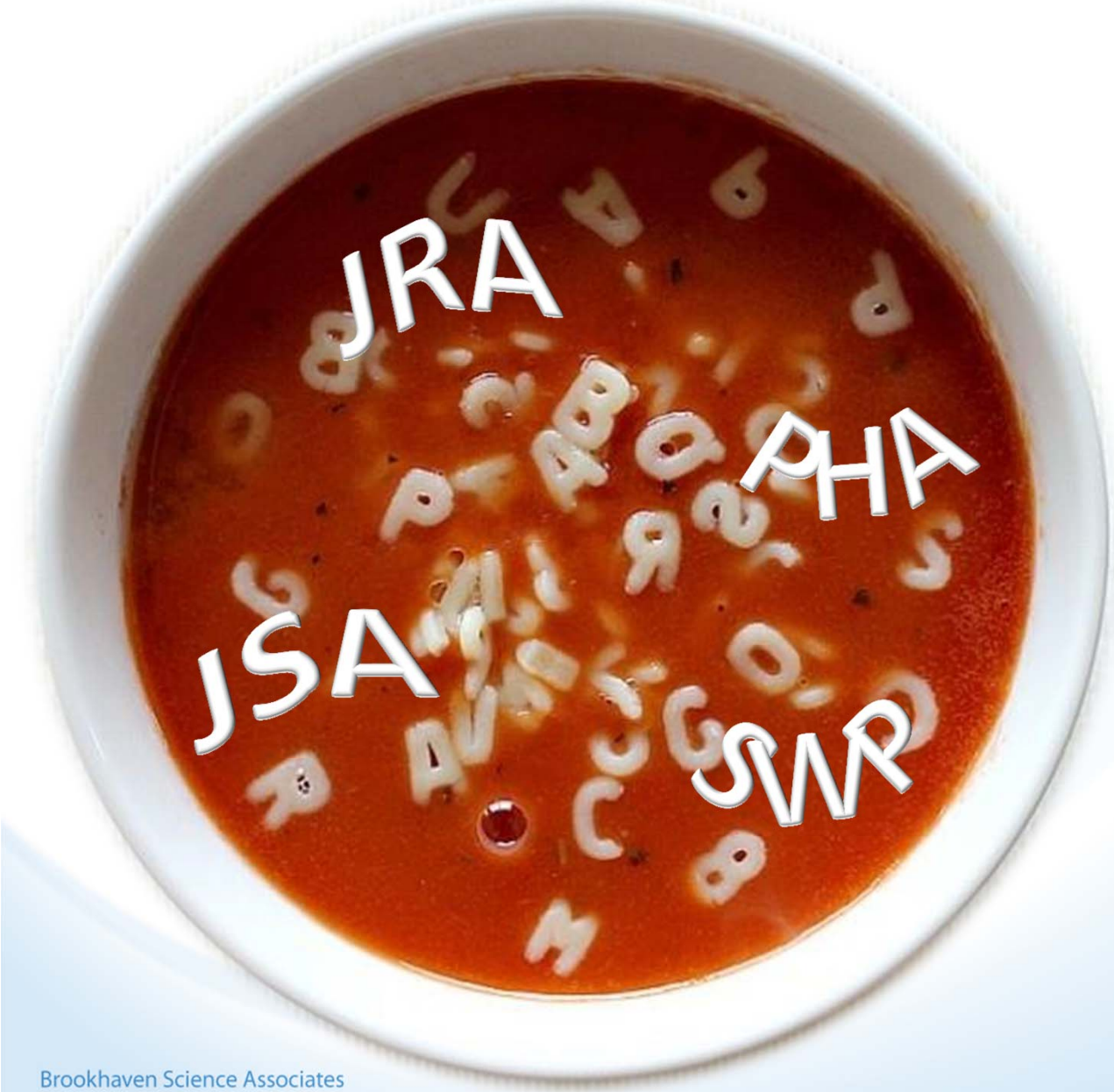
Contacts
SME: Wai Lin Ng, x7153

SBMS: x7267

Requirements

Training

JRA vs. JSA vs. PHA/SWP



- JRA: Job Risk Assessment
- JSA: Job Safety Analysis
- PHA: Phase Hazard Analysis
- SWP: Safe Work Plan

JRA vs. JSA vs. PHA/SWP

- Though the format may change, all require the following:
  - Identification of the job step/task/activity
  - The hazards/potential hazards associated with each job step/task/activity
  - The controls to mitigate or eliminate the hazards/potential hazards identified for each job step/task/activity.
- A JRA adds a risk analysis (e.g., number of people involved, frequency the job/step/task/activity is performed, injury severity, and likelihood of injury)
  - See HVT for Facility Risk Assessment (FRA)

Job Safety Analysis

Scope

- The JSA process is available for use by all BNL employees, users, contractors, and subcontractors to analyze any work or operation that may present hazardous situations.

Procedure (see handout)

- Select the Job to be Analyzed
- Break the Job Down
- Identify Hazards and Potential Accidents
- Control Measures
- Use the JSA

Job Safety Analysis: sample

Job Steps	Hazards/Potential Accidents	Control Measures
5. Hand excavate to expose top of tanks and overflow piping on south end of tank.	Cave-in potential Undermine adjacent ductbank Sudden rainstorm fills excavation	Slope side 1.5/1; competent person to be present onsite during activity. Determine depth and location of adjacent ductbank. Construct soil berm around excavation to prevent excessive runoff from entering the excavation.
6. Cut and remove 4-inch overflow piping	Interior radiological contamination	Cut pipe with pipe cutter; perform radiological survey; follow RWP for required PPE.
7. Excavate on north side of tanks to allow for tank removal.	Cave-in potential Undermine Bldg. 901 Foundation	Slope sides 1.5/1; competent person to be present onsite during activity. Soil at foundation base to remain undisturbed.
8. Place geotextile fabric and plastic sheeting into freshly excavated area, which will remain under tanks during removal.	Cave in potential	Slope sides 1.5/1; competent person to be present onsite during activity.
9. Drag tanks out from under ductbank onto geotextile fabric/plastic sheeting	Spread radiological contamination	Solidify sludge in tank with Radsorb or equivalent prior to moving.
10. Lift tanks out of excavation and place in containers	Drop tanks Tank rupture/release of contents	Use BNL riggers with approved slings. If tank bottom is badly corroded, wrap geotextile fabric and plastic sheeting around tank and lift out of excavation with tank.

Job Risk Assessment: sample

Job Risk Assessment (JRA) Form

Names of Specific Application Risk Team Members: M. Gaffney, G. Blanda, E. Johannsen, G. Olsen, B. Lein, W. Litzke; F. Zaroni, J. Levesque, J. Feeney, B. McCaffery, C. Bruno, A. Nunez	Point Value → Parameter ↓	1	2	3	4	5
Job Title: **Vertical Fixed Ladder** Job Number or Job Identifier: **JRA-BNL-VLadder**	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Use of Vertical Fixed Ladders including those integral to scaffolds.	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training Procedures List (Optional): Ladder Safety (TQ-LADDER) Fall Protection (GE-FALLPROTECT) Scaffold User Safety Training (GE-SCAFFOLD) Fixed Ladder Extent of Condition and Inspection (TQ-LADDER-ADDEND) Applicable Standard Operating Procedures	Likelihood (D)	Very Unlikely	Unlikely	Possible	Probable	Multiple
Approved by: Michael Gaffney Date: 4 January, 2013 Rev. #: 0						
Stressors: Lighting; walking surface conditions; non-compliance to industry Standards for Ladder; weather conditions (e.g., heat, cold, wind, wetness); Insect nests/hives.		Reason for Revision (if applicable):			Comments:	

		Without Controls					Before Additional Controls							After Additional Controls							
Activity	Hazard	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	Control(s)	Stressor	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	Control(s) Added to Reduce Risk	Stressors	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD	% Risk Reduction
Ascending / Descending Fixed Ladders (General)	Lacerations	1	3	2	3	18	• Inspect all ladders prior to use and while climbing (rungs, sides, climber's feet) for dirt/oil, damage, adequate clearance (side, back and toe). • Scaffolds - Daily inspection by a Scaffold Competent Person.	Y	1	3	2	1	6								
Ascending / Descending Fixed Ladders (General)	Slips (that do not result in a fall)	1	3	3	3	27	• Closed toed shoes with clean soles (e.g., no oils or dirt that will allow slippage) that grip ladder rungs.	Y	1	3	3	2	18								

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JRA versus JSA

- A JRA or JSA can be used at any time. There is no requirement when to use one over the other.
  - Both identify a task, the hazards associated with the task, and the controls to mitigate the hazards.
  - A JRA also adds a risk factor consisting of the frequency the task is performed, the severity of a possible injury, and the likelihood the injury would occur.
  - JRAs should exist for all work we do; however, they may not be available for the existing sequence of tasks.
    - If not, create a JSA

Phase Hazard Analysis (aka Safe Work Plan)

Construction work

- Written, step-by-step description of the tasks to be accomplished to complete a job safely and efficiently
  - Job is examined for potential hazards
  - Details measures to be taken to mitigate the hazards
- Template available from SHSD/Programs

Phase Hazard Analysis (PHA)
or
Safe Work Plan (SWP)

Subcontractor:
Contractor Safety Rep or Alternate (print): Signature / Date:
BNL Project Engineer (print): Signature / Date:
Prepared by (print): Signature / Date:

Project / Work Description:

Estimated Project Start Date:

TASK	KNOWN HAZARDS	CONTROL MEASURES

Page 1 of 1

9/29/2010

Sample Safe Work Plan

Completing the Work Permit: Reverse

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):	
Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring)	
Notifications to operations and Operational Limits Requirements:	
Post Work Testing, Notification or Documentation Required:	
Job Safety Analysis Required: ☐ Yes ☐ No	Review Done: ☐ in series ☐ 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				
Safety Health Representative				
Research Space Manager				
Other				
Other				
Required Walkdown Completed				
*Primary Reviewer				

Completing the Work Permit: Reverse

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? ☐ Yes ☐ 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:			

Work Plan

- Written work Instructions
  - May be only few job steps or detailed step-by-step instructions
- Prerequisites
- Precautions
- Hold points
- ESSH controls
- Coordination of tasks
- Guidance for working alone
- Scheduling/notification
- Configuration management
- Post-work testing and acceptance

BROOKHAVEN NATIONAL LABORATORY | *Project Scope and Work Plan*

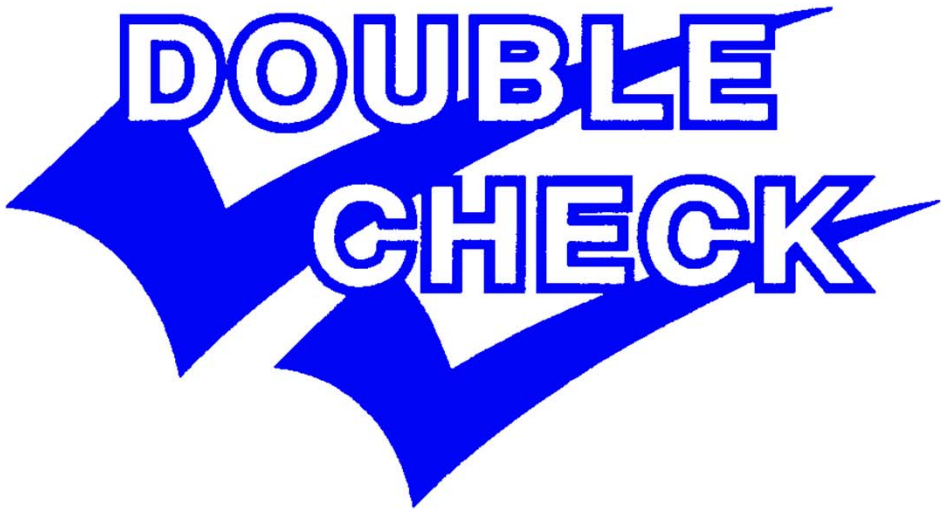
Project:
Scope:
Prerequisites & Post Requisites:
Work Plan:

Revision xx <date> 1

Roles and responsibilities

Primary Reviewer

- *The person designated by a BNL Organization to provide an independent review of Work Permits in order to confirm that the work planning process has undergone due diligence.*



Slide 49

RRC3 In the class notes I would also refer to this as a "second look".
Ray Costa, 9/11/2014

Case Study 2: Replace three relief valves

Task:

Remove and replace Low-Medium-High tank relief valves behind the Compressed Natural Gas (CNG) facility (Bldg 522).

- Valves and tanks in gated outdoor yard
- Line pressure = 2,800#

BROOKHAVEN NATIONAL LABORATORY

Case Study 2: Replace three relief valves

Brookhaven National Laboratory
Environmental, Safety & Health Directorate - SHSD

Hazard Validation Tool
Status: Active

Building:	0522 Compressed Natural Gas Fueling Facility	Room:	1-1 GAS STATION
Room Description:			
Primary Contact:	Swenson, Jeffrey	Work #: 2525	Cell/Home #: 631/873-9377
Alternate Contact # 1:	Bruno, Chris	Work #: 8262	Cell/Home #: 631/926-2293
Alternate Contact # 2:		Work #:	Cell/Home #:
Department:	SS Staff Services Division	Area Classification:	BOP Support
Area PPE Class:	Storage- Chemical Risk Level: 2 ☐ Allow Food/Drink	☑ Safety Glasses ☐ Lab Coat ☑ Long Pants ☑ Fully Enclosed Shoe ☐ Safety Glasses In Designated Area ☐ Lab Coat In Designated Area ☐ Hearing Protection ☐ Impact Resistant Safety Shoe ☐ Face Shield ☐ Hard Hat ☐ Fully Enclosed Shoe In Traffic Corridor ☐ Safety Shoe In Designated Area	
ESR/SWP/RWP/PI(s):	if work is to be done sop or wp may apply		
Hoods:	○ Yes ◉ No ☐ HEPA ☐ Non-HEPA	Eyewash:	○ Yes ◉ No
Shower:	○ Yes ◉ No ☐ Tepid Shower ☐ In Hallway	Lasers:	○ Yes ◉ No ☐ Class 3 or 4
Accelerators/RGD:	○ Yes ◉ No	Rad Areas/Materials:	○ Yes ◉ No
Non-Ionizing Radiation:	☐ Infrared ☐ Microwave ☐ Radio Frequency ☐ Static Magnetic Field ☐ Sub Radio Frequency ☐ Ultra Violet ☑ None Found		
CMS Chemical Hazards:	☑ Combustibles ☑ Compressed Gases ☐ Corrosives ☐ Dermal Sensitizers ☐ Explosives ☑ Flammables ☐ Organic Peroxides ☐ Oxidizers ☐ Pyrophoric Materials ☐ Respiratory Sensitizers ☐ Self Reactives ☐ Water Reactives ☐ None Found		
CMS PHS Hazards:	☐ Carcinogens ☐ Highly Acute Toxins ☐ Reproductive Hazards ☑ None Found		
Chemicals:	☐ Beryllium Article ☐ Beryllium Powder ☐ Beryllium Mod. Operation ☐ Beryllium Former Location ☐ Corrosive Etch Solution ☐ Heated Bath ☐ Lead ☐ Mercury ☐ Strong Inorganic Acid Mist & Vapors ☑ None Found		
Nanomaterials:	○ Yes ◉ No ☐ Unbound ☐ Fixed ☐ In Solution	Biological Hazard:	○ Yes ◉ No ☐ BSL1 ☐ BSL2 ☐ Bloodborne Pathogen
Cryogens:	○ Yes ◉ No	High Voltage Systems:	○ Yes ◉ No
High Temperature Systems:	○ Yes ◉ No ☐ Open Flame	High Pressure Systems:	◉ Yes ○ No
Mechanical Hazards:	◉ Yes ○ No	IER/Startle Hazard:	◉ Yes ○ No
Noise > 85dB:	○ Yes ◉ No	ODH:	○ Yes ◉ No
Confined Space (1,2A,2B,2C):	○ Yes ◉ No ☐ 1 ☐ 2A ☐ 2B ☐ 2C	HF Burn Kit:	○ Yes ◉ No
Flammable Cabinets:	○ Yes ◉ No	Soldering/Cutting/ Welding Area:	○ Yes ◉ No ☐ Electronic Soldering ☐ Torch Soldering/Brazing ☐ Welding/Cutting/Grinding ☐ Designated Area
Critical Research Equip./ Systems/Alarms:	○ Yes ◉ No		

HVT Options

Print Page
HVT Definitions
Show CMS Haz/Chems
Show Hazard Details
Show Hazards & Risk Assessment
Mark as Reviewed
Create a New Revision
Clone This Entry

Return to Menu

How Did You Do?

BROOKHAVEN NATIONAL LABORATORY

Work Permit # _____
Work Order # _____
Job# _____ Activity# _____

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: J. Doe	Date: 7/1/14	Ext.: xxxx	Dept/Div/Group: TQ
Other Contact person (if different from requester): J. Smith			Ext.: xxxx
Work Control Coordinator: J. Jones		Start Date: xxxx	Est. End Date: xxxx
Brief Description of Work: CNG facility – remove and replace three relief valves			
Building: 522	Room: Rear exterior	Equipment: L-M-H Tanks	Service Provider: BNL plumbers

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

ESSH ANALYSIS						
Radiation Concerns	☒ None	☐ Activation	☐ Airborne	☐ Contamination	☐ Radiation	☐ NORM	☐ Other
☐ Special nuclear materials involved, notify Isotope Special Materials Group				☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer		
Radiation Generating Devices:	☐ Radiography	☐ Moisture Density Gauges		☐ Soil Density Gauges	☐ X-ray Equipment	
Safety and Security Concerns	☐ None	☐ Explosives	☐ Transport of Haz/Rad Material		☒ Pressurized Systems	
☐ Adding/Removing Walls or Roofs	☐ Critical Lift	☐ Fumes/Mist/Dust*	☐ Magnetic Fields*		☐ Railroad Work	
☐ Asbestos*	☐ Cryogenic	☒ Heat/Cold Stress	☐ Nanomaterials/particles*		☐ Rigging	
☐ Beryllium*	☐ Electrical	☐ Hydraulic	☐ Noise*		☐ Silica*	
☐ Biohazard*	☒ Elevated Work	☐ Lasers*	☐ Non-ionizing Radiation*		☐ Security Concerns	
☒ Chemicals/Corrosives* SDS attached	☐ Excavation	☐ Lead*	☐ Oxygen Deficiency*		☐ Suspect/Counterfeit Items	
☐ Confined Space*	☐ Ergonomics*	☒ Material Handling	☐ Penetrating Fire Walls		☐ Vacuum	
Ladder Access Required: ☒ Portable Ladder	☐ Fixed Ladder– Status/Restrictions:					
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM				☒ Other Natural gas	
Environmental Concerns	☐ None	☐ Work impacts Environmental Permit No.				
☒ Atmospheric Discharges (rad/non-rad/GHG) methane	☐ Land Use Institutional Controls	☐ Soil Activation/contamination			☐ Waste-Mixed	
☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean			☐ Waste-Radioactive	
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous			☐ Waste-Regulated Medical	
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial			☐ Historical Environmental Hazards	
Waste disposition by: BNL plumbers to give old relief valves to Work Control Coordinator					☐ Other	
Pollution Prevention (P2)/Waste Minimization Opportunity: ☒ No ☐ Yes		Environmental Preferable Products Available: ☒ No ☐ Yes				

How Did You Do?

FACILITY CONCERNS				
☒ Access/Egress Limitations ☐ Credited Controls (Use USI Process) ☐ Configuration Management	☐ None	☐ Intermittent Energy Release		
	☐ Electrical Noise	☐ Potential to Cause a False Alarm		☐ Vibrations
	☐ Impacts Facility Use Agreement		☐ Temperature Change	☒ Other no sources of ignition, no smoking
	☐ Maintenance Work on Ventilation Systems		☐ Utility Interruptions	

WORK CONTROLS				
Work Practices				
☐ None	☐ Exhaust Ventilation	☒ Lockout/Tagout (Complex)	☐ Spill Containment	☐ Security (see Instruction Sheet)
☒ Back-up Person/Watch air & gas contractor to assist	☐ HP Coverage	☐ Posting/Warning Signs	☐ Time Limitation	☒ Other hand tools
☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment						
☐ None	☐ Ear Plugs	☒ Gloves	☐ Lab Coat	☒ Safety Glasses		
☐ Coveralls	☐ Ear Muffs	☒ Goggles (venting)	☐ Respirator*	☐ Safety Harness		
☐ Disposable Clothing	☐ Face Shield	☐ Hard Hat	☐ Shoe Covers	☒ Safety Shoes	☐ High visibility cloths/vest	☒ Other ABC fire extinguisher

Permits Required (Permits must be valid when job is scheduled.)		
☒ None	☐ Cutting/Welding	☐ Impair Fire Protection Systems
☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other

Dosimetry/Monitoring			
☒ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
☐ Liquid Effluent	☐ Passive Vapor Monitor	☐ Sorbent Tube/Filter Pump	

Training Requirements (List specific training requirements)

Lockout/Tagout, Ladder Safety, Compressed Gas Safety

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)	
☐ ESSH	WCC:	Date:
☐ Complexity	Service Provider:	Date:
☐ Work Coordination	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

How Did You Do?

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):
BNL plumbers to remove and replace Low-Medium-High tank relief valves. Complex LOTO/Primary Authorized Employee required (three valves). Depressurize and vent. Support piping to prevent falling. See attached work plan.

Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring)
Old relief valves to go to the Work Control Coordinator for investigation team. Be aware of slips and cut hazards. please note: gas supply already LOTO'ed. Slippery conditions possible – exercise caution.

Notifications to operations and Operational Limits Requirements: Notify FPM prior to start.

Post Work Testing, Notification or Documentation Required: Notify FPM when work is complete.

Job Safety Analysis Required: ☒ Yes ☐ No | Review Done: ☐ in series ☒ 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				
Safety Health Representative				
Research Space Manager				
Other				
Other				
Required Walkdown Completed				
*Primary Reviewer				

Job Taking Longer than a Shift?

- If the job is going to last longer than a shift and new worker(s)/supervisor(s) will be taking over, then a formal verbal turnover is conducted.

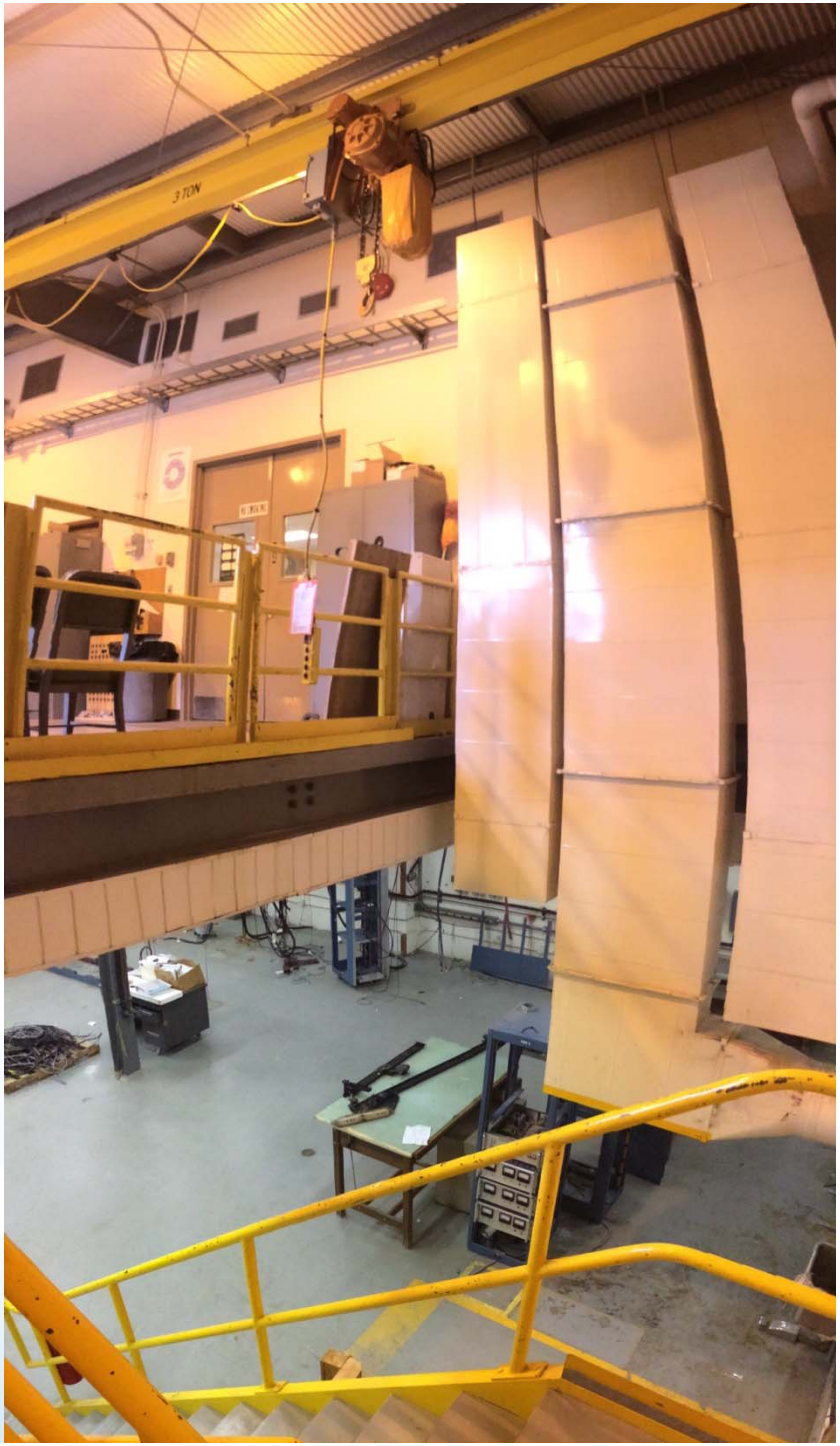
Lesson Learned: Job Safety/Work Planning Analysis

Now, It's Your Turn

Case Study 3: Fix the Crane

Plan the Work, then Work the Plan

Case Study 3: Fix the Crane



Fix the Crane

Screening Tool for Worker Planned Work

1. **ESSH**: (Check this box if there are no ESSH hazards ☐) ESSH hazards are clearly understood; controls are established and implemented, there are no security concerns, **and at least 4 of the following control questions are answered "YES"**:

Yes	No	
X		Have all known hazard(s) and associated control(s) been evaluated using an institutional document (e.g., ESR, JRA, JSA, PHA, HASP or SWP) and have control(s) been implemented? (REQUIRED FOR ALL CONTRACTOR/VENDOR WORK.)
	X	Have all known hazard(s) and control(s) been documented (e.g., organizational procedure) and worker's provided verifiable training in how to properly verify hazard(s) and implement the required control(s)?
X		Does an SBMS Subject Area(s) exist for the hazard(s) and workers have verifiable training in its implementation?
X		Will the cognizant supervisor or engineer describe the job and its associated hazards and controls to workers and provide them an opportunity to ask questions prior to the start of work (e.g., job walk down, pre-job brief, Toolbox)?
	X	Will a dedicated and knowledgeable (e.g., trained to recognize the hazard(s) of the job) work oversight person be present at all times throughout the job?
X		Will Contractor Vendor Orientation (CVO), Guest Site Orientation (GSO), or site-specific training be completed, or will an escort be assigned, for by those in need prior to start of work? (REQUIRED FOR ALL CONTRACTOR/VENDOR WORK)
X		Will PPE be clearly identified for known hazard(s) and communicated (e.g., by supervisor, ESH, and/or area postings) to the worker(s) prior to commencement of work?
	X	Are engineered controls for known hazards in place and operational?

2. **Work Complexity**: All steps of the work to be accomplished are clearly understood by all workers involved, controls are established and implemented, **and at least 5 of the following control questions are answered "YES"**:

Yes	No	
	X	Does the work activity contain less than 15 undocumented steps to complete?
	X	Can the job be performed without a written procedure, permit, or documented checklist that is required by any applicable SBMS Subject Area or regulation (e.g., Complex LOTO procedure, 2C Confined Space Entry Permit, Energized Electrical Work Permit)?
X		Have personnel been trained in the proper use and execution of equipment(s), process(es), task(s), and tool(s) used to perform this job?
X		Are workers familiar with the work location?
X		Is the equipment clearly labeled and is the work location clearly identified?
X		Can the job be performed without stressor(s) (e.g., time pressure, excessive overtime, heat, cold, etc.) and without verification of the worker's Fit for Duty status under this/these stressor(s) for this job?
	X	Can the job be performed without ergonomic challenges (e.g., awkward positions, repetitive motions for long periods, contact stress, excessive force, and ladder work for long periods, etc.)?
X		Can the job be performed without cross checking look-alike equipment and location (e.g., similar areas & equipment are easily identified)?
	X	Can the job be performed without independent testing or inspection required by procedure, SBMS Subject Area or regulation (e.g., electrical inspection)?

3. **Work Coordination**: Work does not involve a Credited Control (controls determined through a contractor safety analysis, such as that found in a Safety Assessment Document (SAD), to be essential for safe accelerator operation directly related to the protection of personnel or the environment. Also, Credited Controls are identified in a DOE approved document such as an Accelerator Safety Envelope (ASE)); work can be accomplished without coordination with other groups in the work area or without coordination with ESH personnel during the job/activity; **and at least 2 of the following control questions are answered "YES"**:

Yes	No	
X		Has work has been scheduled through a maintenance coordinator or equivalent? (e.g., Research Space Manager, Cognizant Space Manager, Shop Supervisor)?
X		Can work be performed without disabling, altering or changing an engineered safety related system (e.g., access controls, fire protection system, interlocks, fume hoods, shielding)?
	X	Will the work be conducted under one job supervisor for the entire job? (e.g., no supervisor/shift turnover during job)?

Fix the Crane

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

ESSH ANALYSIS							
Radiation Concerns	☐ None	☐ Activation	☐ Airborne	☐ Contamination	☐ Radiation	☐ NORM	☐ Other
☐ Special nuclear materials involved, notify Isotope Special Materials Group				☐ Fissionable/Radiological materials involved, notify Laboratory Nuclear Safety Officer			
Radiation Generating Devices:	☐ Radiography		☐ Moisture Density Gauges		☐ Soil Density Gauges	☐ X-ray Equipment	
Safety and Security Concerns	☐ None		☐ Explosives		☐ Transport of Haz/Rad Material	☐ Pressurized Systems	
☐ Adding/Removing Walls or Roofs	☐ Critical Lift		☐ Fumes/Mist/Dust*		☐ Magnetic Fields*	☐ Railroad Work	
☐ Asbestos*	☐ Cryogenic		☐ Heat/Cold Stress		☐ Nanomaterials/particles*	☐ Rigging	
☐ Beryllium*	☐ Electrical		☐ Hydraulic		☐ Noise*	☐ Silica*	
☐ Biohazard*	☐ Elevated Work		☐ Lasers*		☐ Non-ionizing Radiation*	☐ Security Concerns	
☐ Chemicals/Corrosives*	☐ Excavation		☐ Lead*		☐ Oxygen Deficiency*	☐ Suspect/Counterfeit Items	
☐ Confined Space*	☐ Ergonomics*		☐ Material Handling		☐ Penetrating Fire Walls	☐ Vacuum	
Ladder Access Required: ☐ Portable Ladder ☐ Fixed Ladder– Status/Restrictions:							
* Safety Health Rep. Review Required	☐ Haz, Rad, Bio Material Exceed DOE 151.1-C Levels - Contact OEM					☐ Other	

Fix the Crane

Environmental Concerns		☐ None	☐ Work impacts Environmental Permit No.
☐ Atmospheric Discharges (rad/non-rad/GHG)	☐ Land Use Institutional Controls	☐ Soil Activation/contamination	☐ Waste-Mixed
☐ Chemical or Rad Material Storage or Use	☐ Liquid Discharges	☐ Waste-Clean	☐ Waste-Radioactive
☐ Cesspools (UIC)	☐ PCB Management	☐ Waste-Hazardous	☐ Waste-Regulated Medical
☐ High water/power consumption	☐ Spill potential	☐ Waste-Industrial	☐ Historical Enviornmental Hazards
Waste disposition by:			☐ Other
Pollution Prevention (P2)/Waste Minimization Opportunity: ☐ No ☐ Yes		Environmental Preferable Products Available: ☐ No ☐ Yes	
FACILITY CONCERNS	☐ None	☐ Intermittent Energy Release	
☐ Access/Egress Limitations ☐ Credited Controls (Use USI Process) ☐ Configuration Management	☐ Electrical Noise	☐ Potential to Cause a False Alarm	☐ Vibrations
	☐ Impacts Facility Use Agreement	☐ Temperature Change	☐ Other
	☐ Maintenance Work on Ventilation Systems	☐ Utility Interruptions	

Fix the Crane

WORK CONTROLS				
Work Practices				
☐ None	☐ Exhaust Ventilation	☐ Lockout/Tagout	☐ Spill Containment	☐ Security (see Instruction Sheet)
☐ Back-up Person/Watch	☐ HP Coverage	☐ Posting/Warning Signs	☐ Time Limitation	☐ Other
☐ Barricades	☐ IH Survey	☐ Scaffolding-requires inspection	☐ Warning Alarm (i.e. "high level")	☐ Electrical Inspection Required

Personal Protective Equipment						
☐ None	☐ Ear Plugs	☐ Gloves	☐ Lab Coat	☐ Safety Glasses		
☐ Coveralls	☐ Ear Muffs	☐ Goggles	☐ Respirator*	☐ Safety Harness		
☐ Disposable Clothing	☐ Face Shield	☐ Hard Hat	☐ Shoe Covers	☐ Safety Shoes	☐ High visibility cloths/vest	☐ Other

Permits Required (Permits must be valid when job is scheduled.)		
☐ None	☐ Cutting/Welding	☐ Impair Fire Protection Systems
☐ Concrete/Masonry Penetration	☐ Digging/Core Drilling	☐ Rad Work Permit-RWP No
☐ Confined Space Entry	☐ Electrical Working Hot	☐ Other

Fix the Crane

Dosimetry/Monitoring			
☐ None	☐ Heat Stress Monitor	☐ Real Time Monitor	☐ TLD
☐ Air Effluent	☐ Noise Survey/Dosimeter	☐ Self-reading Pencil Dosimeter	☐ Waste Characterization
☐ Ground Water	☐ O_2/Combustible Gas	☐ Self-reading Digital Dosimeter	☐ Other
☐ Liquid Effluent	☐ Passive Vapor Monitor	☐ Sorbent Tube/Filter Pump	
Training Requirements (List specific training requirements)			

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)**	
☐ **ESSH**	WCC:	Date:
☐ **Complexity**	Service Provider:	Date:
☐ **Work Coordination**	Authorization to start:	Date:
☐ **Permit Not Required** (Sections 3 through 7 optional)	(Department/Division, or their equivalent, Sup/WCC/Designee)	

Fix the Crane

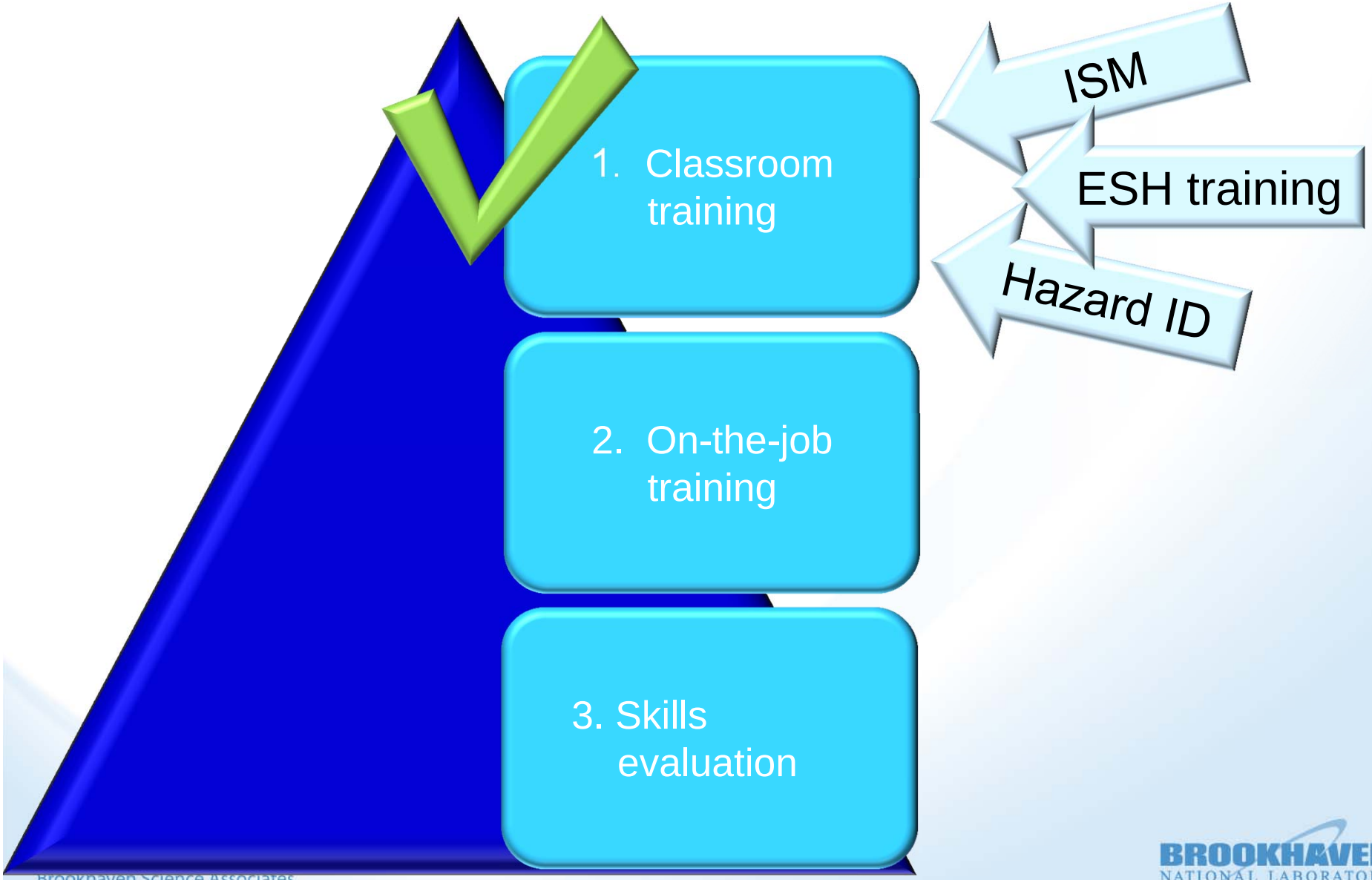
3. Both work requester and service provider contribute to work plan (use attachments for detailed plans)

Work Plan (procedures, timing, equipment, scheduling, coordination, notifications, and personnel availability need to be addressed in adequate detail):	
Special Working Conditions Required (e.g., Industrial Hygiene hold points or other monitoring)	
Notifications to operations and Operational Limits Requirements:	
Post Work Testing, Notification or Documentation Required:	
Job Safety Analysis Required: ☐ Yes ☐ No	Review Done: ☐ in series ☐ 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				
Safety Health Representative				
Research Space Manager				
Other				
Other				
Required Walkdown Completed				
*Primary Reviewer				

WP&C training in 3+ steps



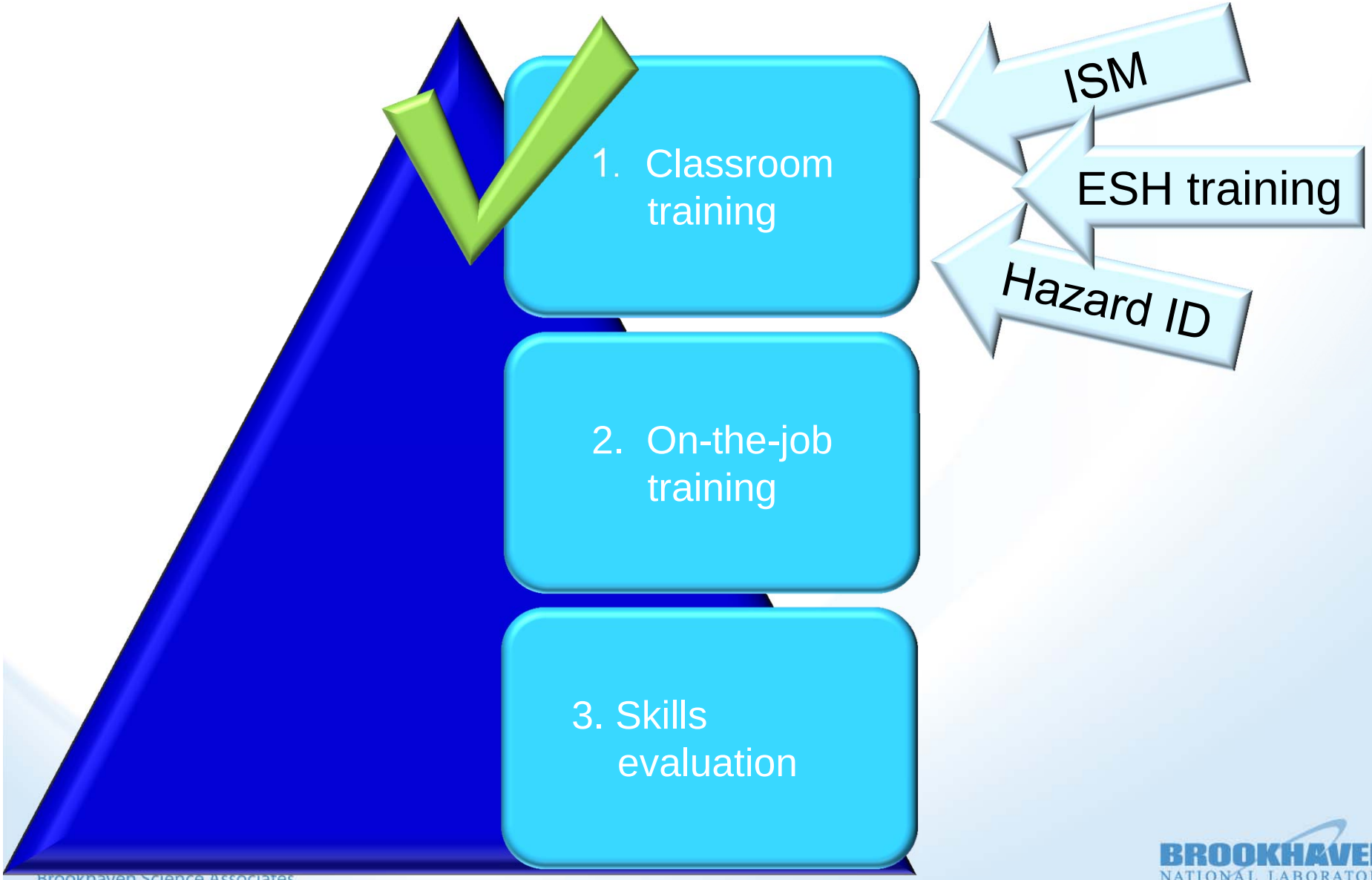
Additional training may be required

Additional training may be needed depending on the type of work you are coordinating/planning.

- Aerial Lifts
- Confined Spaces
- Cranes and Rigging
- Electrical Safety
- Fall Protection
- Forklifts
- Hazard Communication
- Ladder Safety
- Lockout/Tagout
- Radiological Worker
- Respirator Use
- etc.

Speak with your supervisor to make arrangements to attend these courses.

WP&C training in 3+ steps



WCC training and qualification process: next step

Work Control Coordinator Skills Checklist
(TQ-WCC-P)

Candidate Work Control Coordinator Name (print)	Life Number	Department/Division
Evaluator Work Control Manager Name (print)	Date Checklist Completed	

Prerequisite Information
Prerequisite training must be completed before this checklist is administered.

_____ Date of Integrated Safety Management at BNL (TQ-ISM)	_____ Date of Hazard Identification training (TQ-HAZID)	_____ Date of Work Planning and Control training (TQ-WORKPLAN-C)

Equipment/Task Steps
Instructions: Place a check mark in the "YES" box as the Trainee completes each of the steps listed below satisfactorily, independently, and without coaching. Check "NO" for any step that is not completed satisfactorily.

Briefly describe the job/task used for evaluation: _____

_____

_____

Step	YES	NO
Define the Scope and Objectives of the Job to be Planned		
1. Can the WCC describe the work to be done? • Identify steps to be followed during the job • Consider doing a walkdown of the facility/location • Describe who should be on the review team, including the primary reviewer, etc.		
2. Can the WCC write a job description for the task?		
3. Can the WCC correctly classify the job as worker planned, prescribed work, or permit required?		
4. Does the WCC understand the sequence of the task?		
5. For prescribed work, can the WCC locate applicable procedures/plans?		
6. Can the WCC describe the screening process for contractor/vendor work? What are the minimum requirements for work planning for contractor/vendor work?		
7. Is a Phase Hazard Analysis, Job Safety Analysis, or equivalent required for the task, and if so, can the WCC explain its completion correctly?		
8. Can the WCC correctly determine if there a Standing Work Permit governing the task being evaluated and explain how it is implemented?		
Identify and Assess Hazards (Environment, Safety, and Health)		
1. Can the WCC discuss any environment hazards created by the work, as well as what controls are needed?		

Work Control Coordinator Skills Checklist
(TQ-WCC-P)

Candidate Work Control Coordinator Name (print)	Life Number	Department/Division
Evaluator Work Control Manager Name (print)	Date Checklist Completed	

Prerequisite Information

Prerequisite training must be completed before this checklist is administered.

_____ Date of Integrated Safety Management at BNL (TQ-ISM)	_____ Date of Hazard Identification training (TQ-HAZID)	_____ Date of Work Planning and Control training (TQ-WORKPLAN-C)

Equipment/Task Steps

Instructions: Place a check mark in the "YES" box as the Trainee completes each of the steps listed below satisfactorily, independently, and without coaching. Check "NO" for any step that is not completed satisfactorily.

Briefly describe the job/task used for evaluation: _____

_____

_____

Step	YES	NO
Define the Scope and Objectives of the Job to be Planned		
1. Can the WCC describe the work to be done? • Identify steps to be followed during the job • Consider doing a walkdown of the facility/location • Describe who should be on the review team, including the primary reviewer, etc.		
2. Can the WCC write a job description for the task?		
3. Can the WCC correctly classify the job as worker planned, prescribed work, or permit required?		
4. Does the WCC understand the sequence of the task?		
5. For prescribed work, can the WCC locate applicable procedures/plans?		
6. Can the WCC describe the screening process for contractor/vendor work? What are the minimum requirements for work planning for contractor/vendor work?		
7. Is a Phase Hazard Analysis, Job Safety Analysis, or equivalent required for the task, and if so, can the WCC explain its completion correctly?		
8. Can the WCC correctly determine if there a Standing Work Permit governing the task being evaluated and explain how it is implemented?		
Identify and Assess Hazards (Environment, Safety, and Health)		
1. Can the WCC discuss any environment hazards created by the work, as well as what controls are needed?		

Step	YES	NO
2. Can the WCC access feedback from previous relevant jobs? Does the WCC know who to speak with to ascertain this information?		
3. Can the WCC list the known safety and health hazards (including any historically associated with the work/location), such as: a. access/egress/location hazards b. lighting c. working at height d. electrical/LOTO work e. non-electrical LOTO f. chemicals in use g. temperature extremes h. confined space i. impact from weather j. excessive noise or vibration k. potential energy l. radiation m. other:_____		
Plan and Control Hazards		
1. Can the WCC list what medical protocols are required?		
2. Can the WCC list what additional permits are required?		
3. Can the WCC list what barriers, boundaries are required?		
4. Can the WCC describe what additional controls are required?		
5. Can the WCC list what PPE is required?		
Implementing Change Outside of Controls		
1. What conditions would stop the task before or during execution?		
2. Can the WCC explain the process of modifying a Work Permit to address changes ?		
Post Job Review, Feedback and Improvement/Closeout		
1. Can the WCC describe how they would conduct a post-job debrief? What elements would be included in that discussion?		
2. Can the WCC explain the process of closing out a Work Permit?		

2. Can the WCC explain the process of modifying a Work Permit to address changes ?		
Post Job Review, Feedback and Improvement/Closeout		
1. Can the WCC describe how they would conduct a post-job debrief? What elements would be included in that discussion?		
2. Can the WCC explain the process of closing out a Work Permit?		

Work Control Manager:

By signing below, I confirm that I have evaluated the Work Control Coordinator named above using this checklist and affirm that they have completed all checklist steps and answered all questions satisfactorily.

Evaluator Signature:		Date:
Candidate Signature:		Date:
Supervisor Signature:		Date:

Work Control Manager: When complete, please forward a copy of this signed form to **Training & Qualifications in Building 400B** for processing. Please keep the original for your records.

Wrap Up

Thoughts?

Comments?

Questions?

Evaluations

For future reference:

WP&C

- Ray Costa x8227
- Phil Harrington x 5669

Hazard ID

- Wai-Lin Ng x7153
- Daniel King x7368

Your Work Plan?

BROOKHAVEN NATIONAL LABORATORY

Project Scope and Work Plan

Project:
Scope:
Prerequisites & Post Requisites:
Work Plan:

Revision xx <date>

1