

## Hazard Analysis Form

This form can be used by Fermilab Employees, Fermilab Supervisors, Fermilab Task Managers and Construction Coordinators, Services Coordinators and Fermilab Subcontractors. This is a dynamic document which may require modification as the project moves from start to finish and should be readily available at the site where the work is being performed.

**Note: Not all sections of the first page are applicable to every job or task, complete what is necessary for your specific job or task.**

Job Title

Job Location

Contract/Work Order #

### TO BE COMPLETED FOR WORK INVOLVING SUBCONTRACTORS

#### Subcontractor (if applicable)

#### Fermilab

Company

Project Manager

Phone  Page

ESH Rep.

Phone  Page

Project Eng./C.M.

Phone  Cell

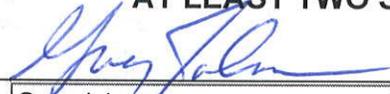
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ESH Rep.

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### AT LEAST TWO SIGNATURES ARE REQUIRED

Prepared   
 Print Name  Date

Accepted   
 Print Name  Date

Accepted as noted \_\_\_\_\_ Date

Print Name

Description of Work:

Personal Protective Equipment: (Check protective equipment required for the job)

<input checked="" type="checkbox"/> Safety glasses (marked Z87+, Z87-2+ for prescription)	<input type="checkbox"/> Chemical splash goggles
<input checked="" type="checkbox"/> Hearing Protection	<input checked="" type="checkbox"/> Hard Hats
<input type="checkbox"/> 3.0 Brazing goggles	<input type="checkbox"/> Impact Goggles
<input checked="" type="checkbox"/> Face shield	<input type="checkbox"/> Rubber apron
<input checked="" type="checkbox"/> Leather gloves	<input type="checkbox"/> Hot/Cold thermal protective gloves
<input type="checkbox"/> Chemical resistant gloves (specify type): <input type="text"/>	<input type="checkbox"/> Respirators
<input checked="" type="checkbox"/> Other required PPE (specify): <input type="text" value="Safety toe shoes or boots, appropriate clothing for welding and grinding operations, high visibility vests"/>	<input type="checkbox"/> Fall protection equipment (specify): <input type="text"/>

**Environmental Aspects (check one):**

- Yes, I have thought about the environmental aspects (see Guidelines for Completing the HA below) of this job and will document such aspects and mitigation steps within this document.
- Yes, I have thought about the environmental aspects of this job and no such credible aspects exist and therefore do not need to be written in this document.

**Equipment required for the job:** (List the tools needed to perform the job.)

Welding machines, protective screens, pipe stands, beveling tools, grinders, drill motors, hand tools, rotary hammer, lifting and rigging equipment, scissors man lift

**Work plan history information;** (List any lessons learned incidents from this job, tips from previous jobs)

**Improvement/Feedback:** At the conclusion of the job, the Task Manager, Supervisor and / or Project Leader shall work with those involved to consider lessons learned and receive in order to improve future work plans.

**Check one:**

Yes we have considered lessons learned and accepted feedback on this job and will communicate such information so that in future work plans may be improved.

Yes we have considered lessons learned feedback and determined that future work plans do not need to be improved.

*Utilizing the format below, identify hazards and environmental aspects, and their corresponding safety precautions/procedures to mitigate hazards. Use as many sheets as necessary.*

### HAZARD ANALYSIS

	Description	Hazards / Environmental Aspects	Precautions / Safety Procedures
1	Lower pipe and equipment into M4/M5 tunnel area	Rigging, Portable crane, fall protection, open access hatch	Inspect all rigging equipment prior to use, all involve workers to wear hard hats, high visibility vests and appropriate PPE workers to use pre approved tie-off points for fall protection workers will have proof of fall protection training pre-work meeting will take place with all involved workers prior to rigging operations
2	Prepare pipe for welding	Cutting, grinding, lifting,	GFCI protection to be used for power tool cords, involved workers to wear safety glasses, face shields, leather gloves, hearing protection pipe over 2" sch. 10 to be preferably lifted mechanically
3	Install pipe supports at specified locations	Drilling, work overhead, cutting, grinding	All overhead mechanical work to be done within confines of scissors lift power tools to use GFCI protection safety glasses, face shields, hearing protection, leather gloves to be worn during grinding, cutting and drilling operations
4	Welding pipe	Arc flash, hot surfaces, pressurized gases, lifting, use of 160L argon dewars	Weild screens to be used as needed, welders and fitters to wear appropriate PPE, use of dewars for backing and shield gas can create a potential ODH hazard. ODH analysis of tunnel work area will be conducted prior to bringing argon source in work area. Box fans to be placed in tunnel dead ends for air movement.
5	Lift pipe into support hangers		all rigging equipment to be inspected prior to use

		rigging and lifting, working overhead, use of hand and power tools	all overhead work to be done within the confines of a scissors lift appropriate PPE will be worn while rigging and lifting procedures are done
6			

**GUIDELINES FOR COMPLETING THE HAZARD ANALYSIS**

Phase of Work	Environmental / Safety Hazard	Precautions / Procedures
<p>Examining a specific job by breaking it down into a series of steps or tasks, will enable you to discover potential hazards employees may encounter.</p> <p>Each job or operation will consist of a set of steps or tasks. For example, the job might be to move a box from a conveyor in the receiving area to a shelf in the storage area. To determine where a step begins or ends, look for a change of activity, change in direction or movement.</p> <p>Picking up the box from the conveyor and placing it on a hand truck is one step. The next step might be to push the loaded hand truck to the storage area (a change in activity). Moving the boxes from the truck and placing them on the shelf is another step. The final step might be returning the hand truck to the receiving area.</p> <p>Be sure to list <i>all</i> steps needed to perform the job. Some steps may not be performed each time; an example could be checking the casters on the hand truck. However, if that step is generally part of the job it should be listed.</p> <p>Close observation and knowledge of the job is important. Examine each step carefully to find and identify hazards - the actions, conditions, and possibilities that could lead to an accident. Compiling an accurate and complete list of potential hazards will allow you to develop the recommended safe job procedures needed to prevent accidents.</p>	<p>A hazard is potential danger to a person or equipment. The purpose of the Job Safety Analysis is to identify ALL hazards - both those produced by the environment and those connected with the job procedure.</p> <p>To identify hazards, ask yourself these questions about each step:</p> <ul style="list-style-type: none"> <li>Is there a danger of the employee striking against, being struck by, or otherwise making injurious contact with an object?</li> <li>Can the employee be caught in, by, or between objects?</li> <li>Is there potential for slipping, tripping, or falling? Could the employee suffer strains from pushing, pulling, lifting, bending, or twisting? Is the environment hazardous to safety and/or health (toxic gas, vapor, mist, fumes, dust, heat, or radiation)?</li> <li>Are there electrocution hazards?</li> <li>Will action require soil/erosion control?</li> <li>Will chemicals or petroleum products be used in an area where they could be released into the environment?</li> <li>Will action have the potential to affect storm water (drains, ponds, or streams in the vicinity)?</li> <li>Will action have the potential to affect the sanitary water system?</li> <li>Will action involve refrigerants?</li> <li>Will any regulated or recyclable waste be generated?</li> </ul>	<p>Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the hazards that could lead to an accident, injury or occupational illness.</p> <p>Begin by trying to: 1) engineer the hazard out; 2) provide guards, safety devices, etc.; 3) provide personal protective equipment; 4) provide job instruction training; 5) maintain good housekeeping; 6) insure good ergonomics (positioning the person in relation to the machine or other elements in such a way as to improve safety).</p> <p>List the recommended safe operating procedures. Begin with an action word. Say exactly what needs to be done to correct the hazard, such as, " lift using your leg muscles." Avoid general statements such as, "be careful", "use caution", and "be alert".</p> <p>List the required or recommended personal protective equipment necessary to perform each step of the job.</p> <p>Give a recommended action or procedure for each hazard.</p> <p>Serious hazards should be corrected immediately. The JSA should then be changed to reflect the new conditions.</p> <p>Finally, review your input on all three columns for accuracy and completeness. Determine if the recommended actions or procedures have been put in place. Re-evaluate the job safety analysis as necessary.</p>

I have reviewed this hazard analysis and I understand the hazards and required precautionary action. I will follow the requirements of this hazard analysis or notify my supervisor or Fermilab contact if I am unable to do so.

Name	ID#	Signature	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

