

Subcontractor Construction Safety: Job Safety Analysis Guideline

Department: Chemical and General Safety

Program: Subcontractor Construction Safety

Owner: Program Manager

Authority: ES&H Manual, Chapter 42, Subcontractor Construction Safety¹

Purpose

Establishing proper job procedures and training all workers in safer and more efficient work methods is one way to prevent workplace injuries. A job safety analysis (JSA) form outlines job/task procedures by recording each step, identifying existing or potential job hazards, and determining the best way to reduce or eliminate them.²

- JSAs must be prepared by the subcontractor prior to the start of any on-site work, before initiating any new phase or task, and before modifying an existing phase or task resulting in a change in hazards.
- Each job performed by a subcontractor at SLAC must have an approved JSA in place before starting.
- Any change in hazards requires the JSA to be modified accordingly and reviewed and acknowledged as described below.
- JSAs must be reviewed as part of daily briefings and updated with input from both supervisors and employees alike.

Implementation of the JSA process will mean continuous safety improvement, with the **goal of zero accidents.**

Introduction to Job Safety Analysis

Effective work planning has been established as the common factor among projects that have been completed without personnel injuries. Job safety analysis, the most common form of documenting an effective safe work process, works by

- Identifying hazards associated with each step of any job or task that has the potential to cause serious injury.
- Determining how to control the hazards
- Producing a written document that can be used to train others
- Meeting Cal/OSHA training requirements by developing procedures and work rules that are specific for each job or task

1 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 42, "Subcontractor Construction Safety", http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_construction/policies.htm

2 Subcontractor Construction Safety: Job Safety Analysis Form (SLAC-I-730-0A23R-003) <http://www-group.slac.stanford.edu/esh/eshmanual/references/subconstructFormJSA.pdf> | [.doc](#)

Who Should Develop a Job Safety Analysis?

Subcontractors who perform trade work should partner with the SLAC project manager/UTR to develop the JSA. Subcontractors are responsible for writing a specific JSA, keeping it on file during the project, training effected workers, and enforcing the work rules.

Workers who actually perform the trade work must participate in the analysis, because they usually are the most knowledgeable about the hazards and have direct control over them.

Three Basic Steps of Job Safety Analysis per ISEMS

1. Define scope of work
2. Analyze hazards
3. Develop/implement controls

Job Safety Analysis Form

A blank JSA form is attached to this document. The form is also available on the SLAC ES&H web site.³

Preparing to Write the JSA

In preparation for writing a JSA, one must be familiar with the environment and the specifics of the job to be conducted. Although the steps in a given job are generally similar, workplace conditions could be a factor in performing the work, presenting unique limitations and hazards. Environmental conditions present in the current job location must be considered when writing a JSA.

At this point in the analysis you must

1. Be familiar with the job to be completed
2. Review lessons learned that apply to the work to be performed. This will assist in identifying risks and mitigation for said risks.⁴
3. Learn about site-specific conditions that may affect the performance of the work, such as
 - Are special permits required?
 - Are there restrictions accessing the work place?
 - What hazards are in the workplace that will have to be addressed?
4. Involve at least one employee who does the job regularly in the analysis. The employee(s) selected should be briefed on the purpose of JSAs and the mechanics of how a JSA is developed.

3 Subcontractor Construction Safety: Job Safety Analysis Form (SLAC-I-730-0A23R-003) <http://www-group.slac.stanford.edu/esh/eshmanual/references/subconstructFormJSA.pdf> | [.doc](#)

4 “DOE | Office of Health, Safety and Security | Corporate Safety Analysis”, <https://www.hss.energy.gov/CSA/Analysis/DOEll/index.asp>

JSA Form Elements

General Description and Responsible Personnel

This section indicates specific job titles by identifying subcontractors, subcontractor representatives, the project manager (PM), and the university technical representative (UTR).

Scope (Description) of Work

It is important to write a brief outline of the operation. In this section identify not the individual steps but the overall goal of the job.

Areas or buildings in which work will be conducted must be identified to ensure that the responsible SLAC person is aware the contracted work is going to be performed in his or her area of responsibility and the appropriate area hazard analysis (AHA) has been reviewed and/or modified.⁵

The JSA is typically a detailed job hazard guide for one work group or trade. It is important to include hazards that may be present due to adjacent activities by other work groups such as paint fumes, open trenches, heavy equipment operations.

Personal Protective Equipment

List required or recommended personal protective equipment (PPE).

Steps/Hazards/Controls

Phase of Work/Basic Job Step (Left Column)

Break the job down into its basic steps. Briefly describe each step and what is done in the order it is performed. Start each step with an action, such as insert, open, weld. Complete the action by naming the item to which the action applies. DO NOT write the breakdown so detailed that an unnecessarily large number of steps result, or the job breakdown is so general that basic steps are omitted. If many steps result from the analysis (more than 12), consider writing multiple JSAs for the job.

Safety Concern/Potential Hazard (Middle Column)

Identify and list the hazards that are possible in each job step. Consider all reasonable possibilities when identifying hazards. Some hazards are more likely to occur than others, and some are more likely to produce serious injuries than others. Determine how each of the hazards can result in an injury. The 11 recognized basic types of hazards are as follows:

1. Struck by
2. Struck against
3. Contacted by
4. Contact with

5 “Area Hazard Analysis”, <http://www-group.slac.stanford.edu/esh/general/hazanalysis/aha.htm>

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5. Caught on
6. Caught in
7. Caught between
8. Fall to same level
9. Fall to below
10. Overexertion
11. Exposure

Required Action or Safety Procedure (Right Column)

List the actions or procedures to eliminate or reduce the hazards that have been identified. If you cannot eliminate the hazard, the following points should be considered for each hazard identified:

1. Less Hazardous Way to Do the Job
 - Is there a less hazardous way to do the job?
 - Is there another way to do the work that will completely eliminate the hazard?
 - Are there tools and equipment available that can make the job safer?
2. Physical Conditions

Can the physical conditions that created the hazard be changed? Physical conditions include tools, materials, and equipment. These conditions can be corrected by either engineering revisions, administrative revisions, or a combination of both.
3. Change Job Procedures

If hazards cannot be engineered out of the job, can the job procedures be changed?

Use caution and carefully study changing job procedures to help eliminate hazards. If the job changes are too difficult, long, or uncomfortable, employees may take risks or shortcuts to avoid these procedures. Job procedures changes can also inadvertently create additional hazards.
4. Personal Protective Equipment

What personal protective equipment is required?

 - The use of personal protective equipment should always be the last control method to protect workers from hazards of a job.
 - Personal protective equipment usefulness depends entirely on the employee's willingness to use it faithfully.

Training

When the tasks, hazards, and controls have been developed list all training that is required to perform tasks required for the job. Examples of work that will require specific training are

- Fall protection
- Confined spaces
- Powder actuated tools

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- Excavation competent person
- Scaffold erection competent person
- Hazardous waste work
- Asbestos abatement
- Exposure to lead
- Forklift operation

Material Safety Data Sheets

List hazardous materials used for this job and the location of the MSDS for each material identified. MSDSs for all materials brought on-site must be no more than two (2) years old.

List of Emergency Routes and Assembly Point(s)

Identify the emergency procedures for this job as outlined in the project site-specific safety plan.⁶

Signature Page

Every person who will be performing work identified in the JSA must sign, acknowledging that he/she

- Has been briefed on the procedures to be followed
- Is trained to perform the work
- Is certified to perform the work (if necessary)
- Understands how to perform the work
- Knows what the safety controls are
- Has had all their questions have been answered
- Has reviewed the site-specific safety plan (SSSP) for this project

Subcontractor supervisor, who will be supervising work identified in the JSA, must sign, acknowledging that he/she

- Has analyzed the work in detail
- Has identified all the hazards associated with that work
- Has identified all the safety controls
- Has briefed the work crew on the work, the hazards and the controls
- Has ensured the work crew understands the work they are to do
- Has verified that the work crew has the necessary training and certifications to perform the work
- Has reviewed the site-specific safety plan (SSSP) for this project
- Is authorizing the work to proceed

⁶ Subcontractor Construction Safety: Site-specific Safety Plan Form (SLAC-I-730-0A21J-025), <http://www-group.slac.stanford.edu/esh/eshmanual/references/subconstructFormSSSP.pdf> | .doc

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Note The subcontractor supervisor is accountable for the safe execution and performance of the work.

The UTR, who will be overseeing work identified in the JSA, must sign, acknowledging that he/she

- Has been briefed on the procedures to be followed by the subcontractor
- Has been briefed how the work will be performed
- Is aware of the safety controls
- Has had all of his or her questions answered
- Has reviewed the site-specific safety plan (SSSP) for this project
- Has acknowledged the JSA has been filled out and signed by all participating subcontract workers

Note If the hazard involved with the work is beyond the knowledge of the UTR, the UTR must consult with a subject matter expert before signing. If the subject matter expert believes the JSA is insufficient or incomplete, he or she must inform the UTR and the subcontractor so the necessary improvements can be made.

Summary

Developing a job safety analysis helps to prevent accidents by anticipating and mitigating hazards. Through the JSA process, job steps and potential hazards are identified and safe work practices are defined.

Advantages of the job safety analysis process are

- Giving a clear, written representation of the job to be performed
- Creating a systematic and organized outline that connects specific activities to associated hazards and hazard mitigation procedures
- Illustrating employer due-diligence in identifying known site-specific hazards and control measures
- Identifying additional information that may be needed to complete the job (for example, permits, job to be performed in a controlled access area, that is radioactive controlled area)

With job safety analysis, experienced employees can maintain safety awareness behavior and receive clear instructions for job changes or new jobs. Benefits also include updating current safety procedures and instructions for infrequently performed jobs. Involving employees early in the job safety analysis process is important. Employees familiar with specific jobs can combine their experience to help develop the JSA. The result is a more thorough analysis of the job, increased buy-in to the process, and increased awareness of the details of the work process.

A job safety analysis is an accident prevention technique used in many successful safety programs. The JSA process is not difficult if it is undertaken with a common sense, step-by-step approach.

Implementation of the JSA process will mean continuous safety improvement, with the **goal of zero accidents.**

Subcontractor Construction Safety: Job Safety Analysis Form

Department: Chemical and General Safety

Owner: Program Manager

Program: Subcontractor Construction Safety

Authority: ES&H Manual, Chapter 42, Subcontractor Construction Safety¹

For guidance completing this form, see Subcontractor Construction Safety: Job Safety Analysis Guideline.²

JOB TITLE:			DATE: New
Page of			Revised
Subcontractor	Subcontractor Representative (name and title)	SLAC PM	SLAC UTR (if different than PM)
Scope (Description) of Work			

REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

Phase of Work/Basic Job Step	Safety Concern/Potential Hazard	Required Action or Safety Procedure
1.		
2.		
3.		
4.		
5.		

1 *SLAC Environment, Safety, and Health Manual* (SLAC-I-720-0A29Z-001), Chapter 42, "Subcontractor Construction Safety", http://www-group.slac.stanford.edu/esh/hazardous_activities/subcon_construction/policies.htm

2 Subcontractor Construction Safety: Job Safety Analysis Guideline (SLAC-I-730-0A23T-002), <http://www-group.slac.stanford.edu/esh/eshmanual/references/subconstructGuideJSA.pdf>

Post signed JSA forms at construction site
SLAC-I-730-0A23R-003-R002

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JOB TITLE: _____ DATE: _____

Phase of Work/Basic Job Step	Safety Concern/Potential Hazard	Required Action or Safety Procedure
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

Subcontractor Construction Safety: Job Safety Analysis Form

JOB TITLE: _____ DATE: _____

Material Safety Data Sheets (MSDS)

Hazardous materials used on this site are/will be	Location(s) of MSDS
1.	
2.	
3.	
4.	
5.	
6.	

List of Emergency Routes and Assembly Point(s)

Emergency Route	Assembly Point

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JOB TITLE: _____ DATE: _____

Signature Page

Subcontractor Supervisor (required)

Name <i>please print</i>	Signature	Date

Subcontractor Employees (required)

Name <i>please print</i>	Signature	Date

SLAC Personnel (UTR required)

Name <i>please print</i>	Signature	Title	Department	Date
		UTR		

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