SPD P 385-1-7

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Safety
GUIDE FOR PREPARATION OF AN ACTIVITY HAZARD ANALYSIS

1. Purpose. Provides guidance in preparing an Activity Hazard Analysis in accordance with EM-385-1-1.

2. Applicability. This pamphlet applies to the South Pacific Division Office, its subordinate Districts, and serviced agencies.

3. Reference.

a. AR 383 series

b. ER 385 series

c. EM 385-1-1

4. Procedures. This pamphlet was written with the intention of providing guidance to Army Contractors Division-wide, for preparing an Activity Hazard Analysis for each major phase of work. It may also be utilized by Corps personnel when reviewing Activity Hazard Analysis submitted by contractors. Utilization of this pamphlet will take the user through a step-by-step procedure. It will offer suggestions and explanations to help in the preparation of a complete analysis.

FOR THE COMMANDER:

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INTRODUCTION

An Activity Hazard Analysis for each major phase of work is required by EM 385-1-1 (Safety & Health Requirements Manual). This analysis utilized correctly will have favorable affects on your safety record. This pamphlet provides guidance for preparing an Activity Hazard Analyses through a step-by-step procedure giving an example, explanations, and definitions. By showing you this procedure, we hope to increase your understanding of how and why the analysis is used.

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THE ACTIVITY HAZARD ANALYSIS - AN OVERVIEW

1. An activity hazard analysis is a procedure used to review job methods and find hazards. These hazards may have been overlooked from the start or they may have developed after production work has started. Once the hazards are known, the best solution of control can be developed.

2. The person best suited to develop the analysis is the foreman or line supervisor. The first reason is that the foreman has most likely put his time in the "trench level." He probably spent 5-10 years of work doing the job that he is now supervising. He has made the mistakes, seen the hazards, and probably has the best suggestions on how to make the job safer. The second reason for this choice will be discussed in detail in STEP 2 - BREAK ACTIVITY DOWN INTO SUCCESSIVE STEPS.

3. Once the analysis rough draft is done, we suggest that it be reviewed by a safety person.* The safety person will review the analysis on a technical level, check to see if any hazards were overlooked, and review the control measures to see if the best solutions were chosen.

4. The following shows the step-by-step procedure recommended to complete as Activity Hazard Analysis. Throughout the text of this pamphlet we will be making reference to a particular activity as an example. This example will be "Interior Demolition of Barracks Building."

a. Step 1 - Selecting an Activity to Analyze.

(1) An activity is a sequence of separate steps that together accomplish a work goal. Some activities can be broadly defined in general terms of what is accomplished. Making paper, building a new dorm, mining ore are examples. Such broadly defined activities are not suitable for a hazard analysis. Similarly an activity can be narrowly defined in terms of a single action. Pulling a switch, tightening a screw, pushing a button are examples. Such narrowly defined activities also are not suitable for a hazard analysis.

(2) Activities suitable for a hazard analysis are those assigned generally to a line supervisor and relate to a particular phase of work. Erecting block walls, placing a roof and painted are good subject for hazard analysis. It is for this reason that the Corps of Engineers requires a hazard analysis for each major phase of work.

*A safety person is intended to mean any person within your organization that has safety responsibilities within their job duties.

(3) Once an activity or major phase has been selected, we recommend completing the analysis using the form shown in Appendix A, Page A-1. Note that the activity selected is Interior Demolition of Barracks Building - the activity chosen for the example.

b. Step 2 - Break Activity Down into Successive Steps.

(1) Now we must break the activity down into its principal steps. Usually you, the line supervisor or foreman will rely on past experiences with this type of work being analyzed. You know your work goal (end point), the beginning point, and what you have to do to accomplish the work goal (steps). You should be able to visualize a logical progression step by step.

(2) Now record the steps in their natural order of occurrence. Describe what is done, not details of how it is done. Usually three or four words are sufficient. Number the steps consecutively.

(3) In the example (Appendix A, Page A-2), our progression of principal steps include the following: Remove furniture from office; remove plumbing, electrical and HVAC duct work form partitions; demolish interior; and clean up. This shows a logical progression from point A (an old deteriorated interior) to point B (the state of final preparation for the next activity - CREATING NEW INTERIOR).

c. Step 3 - Identify Hazards and Potential Mishaps.

(1) Once the principal steps have been established and logged on the form, identify the potential hazards encountered in each of the principal steps listed. Once again past experience will be relied upon heavily. Also talking to the workers about past accidents or near misses will be of help to you. Checking with first-aid logs or accident investigations will also be of help. At this point, evaluate hazards presented by other activities working adjacent to activity being analyzed.

(2) The following is a list of questions that will also help you identify most of the hazards:

(a) Is there danger of striking against, being struck by, or

otherwise making injurious contact with an object?

(b) Can the employee be caught in, on, or between objects?

(c) Can the employee slip or trip? Can the employee fall on the same level or to another?

(d) Can the employee strain themselves by pushing, pulling or lifting?

(e) Is there a possibility of electrical, health, or fire hazards associated with that principal step?

(3) It is estimated that with these questions you should be able to uncover 90% of the potential hazards. What about the other 10%? The other 10% is probably what makes the activity hazard analysis so unique. This is why the so called "generic analysis" is a very incomplete analysis. Factors which are unique to an activity (elevation, terrain, weather, etc.) may add to or change the potential hazards. All this must be taken into consideration when doing the analysis.

(4) In the example (Appendix A, Page A-3), we have listed most of the hazards associated with the principal steps. These are very general due to the lack of specific project information. The purpose of this is to keep the analysis simple and easy to follow. Had a foreman or line supervisor prepared the analysis in Appendix A, Page A-3, with all the specific information available, it would be more complete and extensive.

d. Step 4 - Develop a Control for Each Hazard Identified.

(1) Now we are ready to come up with solutions to the hazards presented in STEP 3 of this procedure. Here is where the analyst can be creative. There may be several solutions to the hazard. What we are looking for in this step, however, is the best one (most beneficial) for the situation. You must ask yourself what are the benefits to this solution? Sometimes the solution will solve that particular problem but create a new hazard for that step or another step. Once again it is useful to ask the workers for suggestions.

(2) The following are suggestions to help you come up with ideas for the best solution to your particular hazard:

(a) Change the Physical Conditions that Create the Hazard. "What change in physical condition will eliminate the hazard or prevent the accident?" A good example of this would be changing the surface in a work area to a non-slip type surface. Or supplying ear muffs to a worker who must travel through an area in which noise levels exceed the standard would be

another.

(b) Change the Procedures of the Step. "What should the employee do or not do to eliminate the hazard or prevent this potential mishap?" For example, does the employee have to go through the noisy area to reach his work area? Is there an another way to get there? If there is, will it be more or less hazardous for the employee. You should consider work-saving tools or equipment. Say for example, a worker has to lift and carry a heavy object onto a workbench. All you need to do is supply the

workers with a workbench that has casters. Also, if two workers were to lift the object onto this portable workbench, it would reduce the chances of backstrain.

(c) Reduce the Frequency that a Task Must Be Performed. "What can be done to reduce the amount of times an employee must perform this task?" Every task has some potential for an accident to occur. When you listed potential hazards in STEP 3, you recognized the fact that these actions have a higher probability of causing an accident than normal tasks. Therefore, if you can find a way to reduce the amount of times an employee must perform a task, you also reduce the probability of an accident happening during this task.

(d) Training. If none of the previous suggestions is applicable, then the answer may be training the employees to do the task safely. Quite often we hear of accidents caused by lack of knowledge of proper safe procedures. This could mean simple instruction from you, the line supervisor or foreman, or it could involve specialized training from outside sources. The latter is needed for irregular work which may be unique.

(3) We have found that special attention should be given to newer (1-1/2 year or less) employees. These employees have proven to be among the most likely to have an accident. This is why is good practice for employers to give new employees good initial safety training.

(4) Once you have decided on a control for the hazard, you must put it into a positive statement. "Dust respirators will be supplied to the workmen." "Electricity to the building will be locked out by a mechanical device." In other words you will be committing yourself to perform the action you chose as a control.

(5) Update as Needed. It should be noted that the completed analysis is not set in stone. We all know that field changes take place every day. With these changes a new hazard may be created. Also, for example, a delay in a different activity could have you working next to that operation. This could add a multitude of hazards to your job. We can now see that for the hazard analysis to be effective, it should be updated as the activity progresses.

6. Benefits.

a. A complete activity hazard analysis will reap many rewards. How much
does your organization spend for workman's compensation insurance premiums?
What you pay in premiums largely depends on your past accident history. If
you can reduce your number of accidents using the activity hazard analysis

process, you can expect to see a reduction in your workman's compensation premiums. With lower premiums follows a lower job quotation or bid. This means that your organization could be more competitive for various jobs.

b. Accidents cost money. For every accident there are obvious costs (doctor, hospitals, etc.) as well as the hidden costs (training new employee to do that job, drop in morale, etc.). By reducing the accidents you can save money, thereby increasing your profit margins on each job.

c. Safety training benefits your organization. Establishing safety contacts between line supervisor and worker (one on one) promotes good safety awareness and increases morale. This is very important for new employees.

d. Also training on the proper methods of performing certain tasks will in most cases increase productivity. An increase in productivity always turns into an increase in profits.

1 Appendix
APP A - Sample (SPD Form 210-R)

Please request Appendix A from your Project Manager.