

# **Automated Job Hazards Analysis Process Guide**

**MSC-GD-17132**

**Revision 2**

**Effective Date: July 15, 2011**

**Topic: Worker Protection**

**Approved for Public Release;  
Further Dissemination Unlimited**

# Automated Job Hazards Analysis Process Guide

## 1.0 PURPOSE

This Automated Job Hazard Analysis (AJHA) Guide provides information to support consistent and effective implementation of the Job Hazard Analysis system applied by Mission Support Contract (MSC) Team employees.

## 2.0 SCOPE

This Guide applies to MSC team employees participating in hazard analysis and control conducted in accordance with [MSC-PRO-079](#), *Job Hazard Analysis*.

This document partially implements the ISMS Guiding Principle #6, Hazard Controls Tailored to Work Being Performed (list and identify), and Core Function #2, Identify and Analyze Hazards.

## 3.0 IMPLEMENTATION

This Guide is available for use upon publication.

## 4.0 APPROACH

**NOTE:** *This guide addresses the following subjects. Navigation links are provided.*

<a href="#">Section 4.1</a>	Job Hazard Analysis Integration with Work Management
<a href="#">Section 4.2</a>	Hazard Analysis Decisions and Pathways
<a href="#">Section 4.3</a>	Skill-Based Work
<a href="#">Section 4.4</a>	Initial Hazards Identification Activity and Documentation
<a href="#">Section 4.5</a>	The AJHA Process
<a href="#">Section 4.6</a>	AJHA Team
<a href="#">Section 4.7</a>	Approach for Procedures and Work Instructions
<a href="#">Section 4.8</a>	AJHA User Guidance and Pointers
<a href="#">Section 4.9</a>	Standing AJHA
<a href="#">Section 4.10</a>	Useful AJHA Forms and Features
<a href="#">Section 4.11</a>	Feedback and Post-Job Reviews
<a href="#">Section 5.0</a>	Roles and Responsibilities

### 4.1 Job Hazard Analysis Integration with Work Management

An automated job hazard analysis (AJHA) is not required when a supervisor or authorized person determines the work is skill-based, using the Skill-Based Determination Criteria outlined in [MSC-PRO-079](#), *Job Hazard Analysis*, Appendix B.

With the exception of “skill-based” work, an AJHA or a Limited Hazards Summary Report is used in concert with developing a work plan, preparing procedures for activities, and conducting the work within controls. The AJHA may also be used to validate skill-based work if desired.

# Automated Job Hazards Analysis Process Guide

- During the initial hazards identification activity, the AJHA Coordinator determines the need for an AJHA or for a less detailed Limited Hazards Summary Report.
- During the initial hazards identification activity, the AJHA Coordinator also determines the need for an AJHA Team. An AJHA is always required when the need for the AJHA Team is identified.

## 4.2 Hazard Analysis Decisions and Pathways

[MSC-PRO-079](#), Figure 1 and [Section 5.0](#) describe the decisions that must be made for the hazard analysis process, as well as the resulting actions to be taken. [Figure 1](#) is also provided in [Appendix A](#) of this Guide, along with a condensed version ([Figure 2](#)) and a worksheet showing the possible pathways to conduct hazard analysis based on Figures 1 and 2. The possible pathways are:

- **Pathway 1:** Work is skill-based, as determined by the use on the Skill-Based Work Determination Criteria in Appendix B, MSC-PRO-079, *Job Hazard Analysis*, otherwise an AJHA or Limited Hazard Summary Report is required.
- **Pathway 2A:** Work is beyond skill-based or uncertainties exist, requiring an initial hazard analysis. The initial hazard analysis indicates that hazards are already or easily mitigated. A Limited Hazards Summary Report (constructed through the AJHA system, but not constituting a full AJHA) is sufficient. An AJHA Team is not required even though some SME involvement might be triggered.
- **Pathway 2B:** Work is beyond skill-based or uncertainties exist, requiring an initial hazard analysis. The initial hazard analysis indicates that hazards are sufficient to warrant AJHA Team with full AJHA completion.

Additional details for these pathways are discussed below in this section of the Guide. See [Figures 1](#) and [2](#) and the Worksheet for Hazard Analysis Process Pathways in [Appendix A](#) for additional details.

## 4.3 Skill-Based Work (Pathway 1 in the Worksheet for Hazard Analysis Process Pathways, Appendix A)

Skill-based work is determined by use of the Skill-Based Determination Criteria, found in Appendix D, MSC-PRO-079, *Job Hazard Analysis*.

Any uncertainty in the determination of skill-based work indicates that the initial hazards identification activity should be performed with at least a limited hazards summary report prepared. The determination that a given activity is skill-based requires no further hazard analysis and must be documented.

## Automated Job Hazards Analysis Process Guide

### 4.4 Initial Hazards Identification Activity and Documentation (Pathway 2A/2B in Appendix A)

For work that is not skill-based (or when it is uncertain if it is skill-based), the AJHA Coordinator conducts Initial Hazards Identification Activity. During this stage, the AJHA Coordinator determines whether the work requires an AJHA with an AJHA Team or only a Limited Hazards Summary Report.

Although the AJHA process is the primary means of conducting job hazards analysis, a Limited Hazards Summary Report can be completed to satisfy the job hazard analysis requirement for those activities that do not require an AJHA Team, but that still require some additional hazard analysis input from other select personnel.

**NOTE:** *Worker and support organization involvement should be promoted at the earliest stages of work planning. Such experience provides a valuable resource in hazard identification. Such experience provides a valuable resource in hazard identification.*

#### 1. Initial Hazards Identification Activity

During the initial hazards identification activity, the AJHA Coordinator:

- Obtain applicable work documents, existing AJHAs, feedback, lessons learned, and other pertinent information.
- Performs a preliminary assessment of probable hazards and controls.
- Confirms existing work conditions and identifies additional hazards, exposures, or constraints (including interfacing hazards and co-located work impacts).

**NOTE:** *For Initial Hazards Identification, it is acceptable for the AJHA Coordinator to confirm existing conditions alone, but at the AJHA Coordinator's discretion, others can be involved such as worker(s), field supervisors, Subject Matter Experts (SMEs), cognizant engineers, etc. Employee involvement is strongly encouraged early in the planning and hazards identification and analysis processes.*

- Identifies the workers/crafts types to participate in the AJHA process.
- Identifies the SMEs and related project or facility technical disciplines.
- May identify tools, equipment, and materials.
- Documents all hazards, controls, involvement and other related information in the final AJHA Report (Standard AJHA Report, Standing AJHA Report or Limited Hazards Summary Report).

## Automated Job Hazards Analysis Process Guide

### 2. Determination for a full AJHA Versus a Limited Hazards Summary

When conducting the initial hazards identification activities as listed above, you can conclude a Limited Hazards Summary Report will be adequate if:

- The work is skill-based work where planning is added only to coordinate such things as tools, equipment, and or materials.
- The identified hazards are already mitigated. For example:
  - A noise hazard is present, but the area is already posted for noise and hearing protection adequate to control the hazard.
  - Active permits exist that adequately document the hazards and controls.
  - Procedures exist that incorporate controls based on AJHA or engineered hazard controls.

If the hazards are already mitigated, or can be easily mitigated prior to the work activity, a Limited Hazards Summary Report that documents this condition and any pre-job actions would generally be adequate. Consider the following:

- Do multiple hazards exist? The greater the number of hazards, the more important an AJHA becomes. Remember though, even one hazard that requires mitigation may mandate an AJHA.
- Is multiple SME involvement needed? The need for detailed SME involvement in hazard mitigation, particularly multiple SMEs, would indicate the need for an AJHA and AJHA Team. However, if simple consultation of worker (s), PIC and SME(s) is adequate, then a Limited Hazards Summary report may suffice. If several SME(s) are involved or triggered by answering yes to hazard statements in the AJHA, you should be considering if a full AJHA is warranted.
- Does adjacent work (work managed under another work document) being performed in the same work area pose new hazards?
- Do uncertainties exist? Whenever uncertainties exist, an AJHA and AJHA Team are likely warranted.
- Does the AJHA Coordinator have questions or doubts about hazards and controls? If so, proceed with an AJHA and an AJHA Team.
- Is the job complex? Factors used to determine the complexity are based on the hazard types, levels, consequences to the workers, the public and the environment, and regulatory and technical considerations.

## Automated Job Hazards Analysis Process Guide

**Complex Task** - Complicated work tasks due to the involvement of multiple resources (e.g., multiple craft disciplines, multiple organizations, first time/infrequently performed activities, specialized equipment, intricate and precise actions).

**Simple Task** - Straightforward work tasks due to the involvement of few resources (e.g., one craft discipline, no external organization, basic equipment, and uncomplicated/easily performed/repetitive actions).

**Task Complexity Determination Chart**

<b>Complex Task (Medium-To-High Complexity)</b>	<b>Simple Task (Low Complexity)</b>
Shutdown of multiple systems is required to properly isolate the work; multiple interlocks.	Single or no system shutdown is required.
Work involves several supporting tasks or sub-activities.	Work involves a singular defined task.
Work involves a large number of sequential steps, with some hold points or verifications.	Work step sequence is not deemed critical to safe completion.
Work is prone to rapidly changing conditions (e.g. temperatures, noise, energy, pressures, and chemical exposures).	Work is performed under static conditions.
Multiple sets of environmental, safety and health (ESH) requirements must be integrated.	Few ESH requirements are identified.
Multiple ESH SMEs called upon to assist in team decision-making; integration is critical.	No potential impact expected in SME input.
New tools, equipment, or process employed.	Use of routine tools, equipment, or process.
A first time or infrequently performed activity.	Activity is performed routinely.
Multiple contractors and/or crafts are assigned.	Single craft or organized team activity.
Intricate components that must be operated, manipulated, or otherwise coordinated.	Operational activities are fairly simple and basic.
Detailed work instructions are developed.	Highly dependant on craft skills; minor/no planning.

## Automated Job Hazards Analysis Process Guide

### 3. What Goes into the Limited Hazards Summary Report?

Basically, document the results from the hazard identification activities conducted during the initial hazards identification as bulleted above. The process to use the AJHA features to prepare a Limited Hazards Summary Report includes the following:

- Complete the Task Information Screen.
- Complete the Preliminary Hazards and detailed Hazard screens by marking all the hazards that apply to this activity “Yes,” the remainder “No.”
- Use “Details” in the Controls screen, “Comments” in the Hazards screen nor the Comments/Instructions form to document the essential items of the Initial hazard and control identification process to indicate any actions needed before or during the work activity.
- Additional controls can also be added to selected hazards on the Controls Screen if needed.
- SMEs consulted or involved must approve by using the Involvement screen.
- Reference any forms or permits that will be required.
- Go to the “Finalize” screen and set the status to Limited hazard Summary
- Print the Limited Hazards Summary Report.
- Incorporate hazards and controls identified in the Limited Hazards Summary Reporting to the appropriate Work Plans and/or Work Instructions.

**NOTE:** See “Worksheet for Preparing a Limited Hazards Summary Report” located in [Appendix B](#) for additional information on preparing this report.

#### 4.5 The AJHA Process

The AJHA is the most rigorous means for completing Job Hazard Analysis. The AJHA is prepared and/or used:

- For all activities where hazards identification and training for controls has been determined to be beyond skill-based work and a Limited Hazards Summary Report cannot satisfy the hazard analysis and control process.
- Whenever a Procedure is developed for an activity that is not skill-based and a Limited Hazards Summary Report cannot satisfy the hazard analysis and control process.

## Automated Job Hazards Analysis Process Guide

- Whenever an AJHA Team is conducted.
1. When an AJHA does not already exist for the work, the AJHA completion and implementation processes are described below.
    - AJHA Coordinator reviews work request, understands problem, gathers baseline data, identifies needed materials, and describes the scope of work (see [MSC-GD-12116](#), Work Planning Guide).
    - AJHA Coordinator starts an AJHA and describes the scope in the Task Information Screen.
    - AJHA Coordinator conducts the initial hazards identification activity to include the initial hazard analysis by individually completing the Preliminary Hazards screen and possibly the detailed hazard screen. This will assist in determining if an AJHA is required and which SMEs must be involved. It also will assist in determining whether AJHA completion is required or whether a Limited Hazards Summary Report will suffice.
    - AJHA Coordinator confirms the conditions of the work site, and may be accompanied by appropriate personnel, as part of the initial hazard analysis.
    - AJHA Coordinator initiates the AJHA Team session as needed based on potential hazards. See [Section 4.6](#) for guidance on AJHA Team involvement.
    - The AJHA Team confirms and or finalizes the Hazard screens during the AJHA Team session. See [Section 4.6](#) for guidance on AJHA Team Involvement.
    - Sees conduct any Specific Analysis actions required based on hazards identified and determine if any controls or other actions are warranted. SMEs acknowledge the analyses are conducted and the appropriate information from the analysis applied in the controls screen.
    - AJHA Team members (SMEs or others as appropriate) specify hazards, controls, and forms/permits required.
    - When Specific Analyses and controls are complete, SMEs signoff in the Involvement Screen. Other participants are listed by the AJHA Coordinator.
    - AJHA Coordinator finalizes AJHA and prints report.
    - Results of the AJHA are incorporated into the work plan, work instructions or procedure as appropriate. The AJHA Standard Report distinguishes controls into three categories: Administrative, Skill Based, and Beyond Skill Based.

## Automated Job Hazards Analysis Process Guide

- Administrative controls are those that are typically performed outside of the work area, often completed prior to starting the work activity. For example training, medical monitoring, or notifications.
  - Skill Based controls are protective measures that may warrant discussion in the pre-job, but do not require special instructions for the worker to implement. Donning a hard hat, or using proper lifting techniques for example.
  - Controls that are beyond skill based are those control measures that are tailored to the work activity. Therefore, the control with any specific implementing instructions needs to be incorporated into the work plan, work instructions, or procedure.
- When work is to be conducted, PIC applies any field or pre-job briefing changes to the AJHA based on existing field conditions. See [Sections 4.8.5](#) and [4.9.6](#) for guidance on making field/pre-job changes to an AJHA.
  - Work is performed within the identified controls.

2. When an AJHA already exists for the work, proceed as follows:

- AJHA Coordinator or PIC identifies the AJHA and verifies its appropriateness.
- AJHA Coordinator initiates a revision or clone of the AJHA if necessary based on changing hazards/conditions/requirements and proceeds through the normal completion process.
- PIC applies any field or pre-job briefing changes to the AJHA based on existing field conditions. See [Sections 4.8.5](#) and [4.9.6](#) for guidance on making field/pre-job changes to a Standing AJHA. A formal revision/clone of the AJHA is not performed in this case, unless it is apparent that the field change would be needed for this work in all/most cases in the future.
- The existing, revised/cloned, or field-modified AJHA is applied to the work.

### 4.6 AJHA Team

AJHA Team with worker involvement is an important element of the MSC Integrated Safety Management System. The following guidance describes how to apply team involvement for AJHA completion.

1. What Is a Team?

For the purpose of AJHA completion, a Team is:

## Automated Job Hazards Analysis Process Guide

- Personnel representing the necessary disciplines whose involvement in planning is vital to ensure safe work.
- This could be something as simple as an AJHA Coordinator with appropriate worker or supervisor input.
- Or it could be a much larger group with members representing many different areas of expertise (e.g., Radiation Protection, Occupational Safety, Operations, etc.).
- Timely involvement of the Team members is essential for the function of the Team.
- The AJHA Coordinator makes the determination of team size and make-up, based on the nature and hazards of the work.
- The AJHA Coordinator's initial planning activity including completion of the AJHA Hazard Tree can be helpful in deciding who should be involved (i.e., once the Tree is complete, the Involvement Screen of AJHA shows mandatory involvements).

### 2. When is an AJHA Team Needed?

AJHA Team is needed whenever initial hazard identification indicates that a Limited Hazards Summary Report is not adequate and that a full AJHA is to be conducted.

But *keep in mind* that:

- The "Team" is determined by the AJHA Coordinator using a graded approach.
- The Team may consist of only an AJHA Coordinator with consultation of a worker or supervisor, or it can involve many others, if appropriate (See [Section 4.6.1](#) and [4.6.3](#)).
- A Team session is not necessarily required. (See [Section 4.6.4](#))

**Do not** form a cumbersome cast of representatives in a full and formal team session for a simple and straight-forward job. Also, **do not** hesitate to involve those vital to planning safe work.

**Rule of Thumb:** The size of the Team and number of disciplines represented will generally increase as hazard potential and range of hazards increase, and coordination, sequencing, integration, and combination of workers increase.

**Rule of Thumb:** Convening of formal Team sessions becomes more important as hazard potential and range of hazards increase, and coordination, sequencing, integration, and combination of workers increase.

### 3. Who Should Be on the Team?

## Automated Job Hazards Analysis Process Guide

Team size and make-up is at the AJHA Coordinator's discretion. Some pointers are:

- During Initial Hazards Identification Activity, the AJHA Coordinator identifies the hazards in the Hazard Tree and then can go to the Involvement screen and see if there are any "Mandatory Involvements." If so, include these disciplines on the Team. Other involvements would be at the AJHA Coordinator's discretion based on the results of the Initial Hazards Identification activity.
- Worker involvement is always encouraged. Even for straight-forward jobs of lower hazard potential, consultation with a worker and supervisor is encouraged.
- The initial walk down or work site review may be useful to determine the challenges of the job and who can contribute to the AJHA.

**Rule of Thumb:** It is usually best to keep the Team limited to those that are vital to the safe performance of work. It is usually more productive and effective to have a smaller Team made up of essential personnel, rather than a large Team of multiple personnel.

**Rule of Thumb:** The size of the Team and number of disciplines represented will generally increase as hazard potential, range of hazards, and task complexity increase (e.g. coordination, sequencing, integration, and combination of workers increase).

#### 4. What Methods are Used to Accomplish Team Planning and How is it Done?

**Preferred:** A face-to-face AJHA Team session is the preferred option, particularly for work with a higher degree of complexity and for work with multiple hazards potential. The optimum approach for this is a Team session in a room of adequate size using a projector, such as an "In-Focus" machine.

**Adequate Alternative:** Team sessions are not always feasible, so other techniques such as walk downs or electronic and verbal communication can be used to ensure teamwork. But, it is important to get **timely** and **early** involvement as appropriate, rather than simply soliciting a "signature" as the first input.

**Rule of Thumb:** Convening of an AJHA Team sessions becomes more important as hazard potential and range of hazards increase, and coordination, sequencing, integration, and combination of workers increase.

#### 5. How Can Team Planning Be Achieved Without a Team Session?

When a Team session is not feasible, some tips on accomplishing Team planning include:

- Get the workers or others involved for an initial job walk down or work site review and include their input for the AJHA.

## Automated Job Hazards Analysis Process Guide

- Use timely electronic communications to get PICs, SMEs and others to review the job and hazards and incorporate controls.
- Ask appropriate personnel to review the AJHA Coordinator's initial completion of the Hazard Tree and controls.
- Communicate verbally, electronically or any other way that is effective.

**Acceptable Indicator:** If timely and early input is achieved in the AJHA process (not at the eleventh hour), then teamwork has been achieved.

**Unacceptable Indicator:** Teamwork has not been achieved if the first involvement of the SME is to be asked for a signature on the AJHA, or if the first involvement of a worker is during the pre-job briefing.

### 4.7 Approach for Procedures and Work Instructions

The hazard analysis process is essentially the same, whether conducted on a planned maintenance or operation activity or a proceduralized activity. Remember the hazard analysis is applied to the activity described in a procedure or work activity. As a result of the hazard analysis, the procedure writer or planner uses the output of the AJHA to assure all necessary controls and SME reviews are incorporated in/applied to the procedure or work package. Some pointers include:

- The Supervisor/Work Leader or Validation Authority decides if the work is skill-based through use of the Skill-Based Determination Criteria, [MSC-PRO-079](#), Appendix D.
- If skill-based, the Skill-Based Determination Criteria documentation suffices as the hazard analysis and no further initial hazard analysis is required (Pathway 1 as shown in the Worksheet of [Appendix A](#)).
- If not skill-based (or if in an uncertain middle ground), the AJHA Coordinator conducts "Initial Hazards Identification" as indicated in Section 4.2 (Pathway 2A/2B as shown in [Appendix C](#)).
- Initial Hazards Identification includes such items as a work site review or walk down to confirm existing conditions. It is emphasized that the AJHA Coordinator should conduct such walk downs for the area/activity to confirm existing conditions, and not simply do a hazard analysis against a document. This may not be feasible if a procedure is generic to any worksite; however, many procedures apply to a particular type of worksite, if not a specific worksite. So, walk downs or site reviews of representative or actual work areas should be feasible in many cases.
- The hazard analysis for the procedure must be conducted against the activity and not just a document.

## Automated Job Hazards Analysis Process Guide

- The determination for a Limited Hazards Summary Report completed by the AJHA Coordinator, versus a fully completed AJHA with formal AJHA Team involvement is the same as that discussed in Section 4.0 for the AJHA Coordinator. (See Pathways 2A and 2B in the Worksheet of [Appendix A](#)).

**Question 1:** If a procedure or work instruction is needed, does that mean that either a Limited Hazards Summary Report or a full AJHA is automatically needed as well?

**Answer:** No, not in all cases. In certain cases, a procedure or work instruction is needed for purposes other than ensuring safe work. For instance, quality control or proper sequencing may drive the need for proceduralizing an activity or writing a work instruction. In such cases, it may be that the activity is skill-based from a hazard analysis standpoint. If so, then a Limited Hazards Summary Report or full AJHA would not be required.

**Remember:** The overriding factor in determining the need to conduct initial hazard analysis followed by a Limited Hazards Summary Report or full AJHA is the decision whether the work is skill-based or not. But, any uncertainty should drive the work to the initial hazard analysis pathway (Pathway 2A or 2B as described in the Worksheet of [Appendix A](#)).

**Question 2:** Can certain types of procedures be called skill-based by definition for the group of procedures as a whole?

**Answer:** This blanket skill-based grouping is not recommended, except perhaps for administrative procedures. For instance in the case of operating procedures, some or many may be skill-based, but others may introduce area or activity hazards that would warrant an initial hazard identification followed by Limited Hazards Summary Report or even full AJHA with AJHA Team involvement. You are encouraged to evaluate each procedure to make the appropriate decision for planning/hazard analysis.

**Question 3:** Once a Limited Hazards Summary Report or AJHA is completed for a proceduralized activity and the hazards/controls are built into the procedure, can that procedure then be classified as skill-based, therefore, no longer requiring further hazard analysis?

**Answer:** A review of the known hazards and controls needs to be performed based on the Skill-Based Determination Criteria. If hazards and controls go beyond the criteria, an AJHA or Limited Hazards Summary Report should remain associated with the procedure. When the procedure is revised or reviewed, the AJHA or Limited Hazards Summary Report should also be revised and reviewed unless the procedure revision has no implications on hazards/controls.

### 4.8 AJHA User Guidance and Pointers

#### 1. Types and Variations of AJHAs

## Automated Job Hazards Analysis Process Guide

**Standing AJHA:** A Standing AJHA is active over a period of time (e.g., two years) and applies to a work activity or procedure that is conducted recurrently or periodically. Use of a Standing AJHA avoids redundant hazard analysis for the same work. See [Section 4.9](#) for details on Standing AJHAs.

**Job Specific AJHA:** A Job Specific AJHA is prepared for a specific work activity and its lifetime is limited to conducting only that activity.

**Limited Hazards Summary Report:** The Limited Hazards Summary Report documents the initial hazards identification activity showing that any hazards identified are already mitigated or can be easily mitigated prior to work without convening an AJHA Team for completion of a full AJHA.

**AJHA Revision:** An AJHA Revision is made when a change is required for the SAME work activity. The original and all revisions are saved in the AJHA database. All revisions have the same AJHA Number with a unique Revision Number.

**AJHA Clone:** An AJHA Clone (copy of an existing AJHA) is used when work of a similar nature is being planned. This allows the Team to have a partially completed AJHA that has been useful to serve as a starting point for a new but similar work activity. The cloned AJHA is distinct from the original AJHA.

### 2. When Should a Job Specific or Standing AJHA Be Used?

**Job Specific:** Use this when the work is unique; that is to be performed and completed as a finite activity with a limited duration.

**Standing:** Use this when the work is to be conducted repeatedly or periodically over a given time frame.

**NOTE:** See [Section 4.9](#) for additional guidance of Standing AJHA completion.

### 3. What is the Difference between an AJHA Revision and Clone?

**AJHA Revision:** Use this when a change is needed for the same work activity. When an AJHA is revised, its “parent” is saved in the database, and its revision is added with the same original number plus a revision number. Necessary changes are made to the revision and when complete, it is finalized and then used for all future work on that activity, unless revised again. The revision will contain all the new changes in the AJHA tool made since the parent was created. All impacted hazards will be returned to the unanswered status for review.

**AJHA Clone:** Use this for a new or different work activity. When an AJHA is cloned, its “parent” remains in the database unchanged. The parent retains the same status as it had prior to cloning. The existence of the parent does not impact the clone and vice versa. The clone is given a new and unique number because it is for a similar but different activity. The purpose of the

## Automated Job Hazards Analysis Process Guide

clone is only to provide an accelerated starting point for conducting hazard analysis for similar work, thus avoiding redundancy. The clone will contain all the new changes in the AJHA tool made since the parent was created. All impacted hazards will be returned to the unanswered status for review.

#### 4. How are Contingency Hazards/Controls Set for Changing Field Conditions?

Some pointers on adding contingencies follow:

- Use the “Comments” function in the Hazard screen to describe contingencies in a text field.
- Use the AJHA Comments/Instructions Form. This is created from the Forms/Permits Screen. It provides a text field to state contingencies such as “...if this condition exists or develops, then do the following...”
- Use the “Users Added Controls” function and the “Details” function in the Controls screen to describe contingencies and appropriate control actions.
- Use one of the three “User Added Hazard” on the Hazard Tree to add additional hazards as appropriate to address contingency and control/actions.
- Use hazard-specific Forms/Permits to show contingency controls or actions. For instance, the Hot Work Permit has text fields to define what should be done under various circumstances. Other forms/permits also have such features.
- If the contingencies require field changes, the AJHA must be modified to document the approved field changes that were put into effect.

#### 5. How Might a Pre-Job Walk Down Affect an AJHA or Limited Hazards Summary Report and How are Field/Pre-Job Briefing Changes Made to an AJHA?

The Field Supervisor/Work Leader has the very important responsibility to confirm the work site conditions. This can be accomplished by conducting a pre-job walk down, with AJHA or Limited Hazards Summary Report in hand, to verify that work conditions, hazards, and controls are consistent with existing conditions at the time of work. This work site review may show that changes are needed for some hazards or controls. For some types of AJHAs, such as Standing AJHAs conducted in varied work areas, additions or deletions of some hazards/controls may, in fact, be very typical.

Guidance for the Field Supervisor in proceeding with field changes includes:

- For fairly minor changes to hazards/controls, the Supervisor can make these changes during the Pre-Job Briefing or during field activities as indicated in [Section 4.9.6](#). Note

## Automated Job Hazards Analysis Process Guide

that it is vital to document these changes in the AJHA, and certain SME signoff(s) for the change(s) may be appropriate.

- In the case where significant hazard/control changes are indicated, the Supervisor should cancel the job and return it to the AJHA Coordinator for formal AJHA revision.
- Where a Limited Hazards Summary Report has been completed and significant hazard/control changes are indicated, the Supervisor should cancel the job and return it to the AJHA Coordinator for AJHA Team involvement and full AJHA completion.
- Where a Standing AJHA is used and certain hazard/control changes seem to be normal anytime (or most of the time) that the job is worked, the Supervisor can proceed with a field change, but then should request that the AJHA Coordinator formally revise the Standing AJHA and procedure if appropriate, to permanently incorporate the change.

The AJHA and Limited Hazards Summary Report change process is detailed in [Section 4.9.6](#) under Standing AJHA, but the process would be similar whether the change is for a Job Specific or Standing AJHA. The change process is similar in the case of either a fully completed AJHA or a Limited Hazards Summary Report, unless it is determined that hazards are such that a fully completed AJHA is needed instead of the Limited Hazards Summary Report. In this case, the job would go back to the AJHA Coordinator for full AJHA completion with the AJHA Team.

### 4.9 Standing AJHA

#### 1. When is a Standing AJHA Prepared?

A Standing AJHA can be prepared under the following circumstances:

- For a proceduralized activity where the work is to be performed periodically to the procedure.
- For a work activity that is performed periodically over time, such as a maintenance activity.
- For a specific activity in a specific area (e.g., visitors walking through a shop), to address general hazards.
- Generally, where the same or similar work is recurrent.

#### 2. What is a Reasonable Expiration Date for a Standing AJHA?

Guidance on setting the expiration date for a Standing AJHA is as follows:

## Automated Job Hazards Analysis Process Guide

- If the Standing AJHA is written for a procedure, match the expiration of the Standing AJHA with the expiration date of the procedure. This will ensure that both are reviewed and revised together.
- If in the interim, the procedure is reviewed and revised (except perhaps for reasons unrelated to hazards/controls; e.g., editorial changes), then the Standing AJHA should likewise be reviewed and, if appropriate, revised simultaneously.
- AJHA reviews should be documented even if an AJHA revision is not warranted as a result. This documentation could be made as a note on the Task Information Screen, General Comment's box or other areas of AJHA. The note and the date can be edited without doing a revision to the AJHA. Just unlock the Standing AJHA, go the Finalize Screen and click on Standing AJHA. This will bring up the Date screen, and the date can be set to match the new procedure review date, and this will complete the documentation and new date setting of the review.
- If the Standing AJHA is not specifically written for a procedure, then the expiration date must not be more than two years from AJHA completion. The AJHA default date when setting expiration is two years, but the user can change this to the date desired. An example of the type of activity applicable to one-year expiration would be a preventative maintenance work package.

### 3. How Should the Scope be Defined for a Standing AJHA (Broad or Narrow)?

If the scope of a Standing AJHA is too broad, many hazards will likely be identified that often do not apply when the job is worked. Conversely, others not identified may apply at a particular time. This results in an AJHA of little value because many hazards/controls have to be waived or added at the time of the work.

Some ideas to address this challenge are as follows:

- For the same activity, develop multiple Standing AJHAs for the various conditions. For example, two Standing AJHAs for the same work activity could be developed, one conducted in a rad zone and the other in a non-rad zone. Even further narrowing within these zones could be made, if appropriate.
- Use the "Comments" function in the Hazard screen to add additional detail on hazards and the "Details" function on controls. An AJHA "Comments? Instruction Form could also be prepared for this AJHA that states, "When the activity is conducted near power lines, also apply the following requirements..." Those requirements would then be detailed on the form. The Comments/Instructions form would, of course, not apply unless the conditions were present.
- Contingencies can also be listed in the Controls text boxes under any given hazard or "Other." But be careful not to mark too many of the hazards/controls as contingencies or

## Automated Job Hazards Analysis Process Guide

this could be confusing. The Comments/Instructions form may be a better alternative, because if it does not apply, then the form does not have to be provided with the AJHA for that particular work event.

#### 4. How are Contingency Hazards/Controls Set for Changing Field Conditions?

See [Section 4.8.4](#) for guidance.

#### 5. How Often Should Standing AJHAs be Reviewed?

[MSC-PRO-079](#), Section 4.7, details the requirements for Standing AJHA Review. Review Standing AJHAs under the following circumstances:

- At least every 12 months (minimum frequency), when prepared as a stand alone or separate document.
- When developed to supplement a technical procedure at a frequency to correspond with the periodic review date for that procedure.
- When the hazards of the work change.
- When an inactivated procedure is activated.
- When there is a significant change in the work environment.
- When new equipment or tools are introduced.
- When revised work instructions or process steps are implemented that may affect the performance of safe work.
- When the work activity/task results in an accident, near miss, or issuance of a formal lessons learned.
- When hazard controls are determined to be no longer effective.

These reviews should be documented in some manner, even if the review did not result in a modification, revision, or other change. Documentation can be made on the AJHA in the Task Information Screen's Comments field, in the "Activity Notes" found on the Inventory screen under Select Options.

#### 6. How are Field/Pre-Job Briefing Changes Made to an AJHA, Standing AJHA, or Limited Hazards Summary Report?

It is not unusual for a change (e.g., addition, deletion, modification) to be necessary for a Standing AJHA hazard/control, because at a particular time when the activity is performed,

## Automated Job Hazards Analysis Process Guide

current field conditions may vary. Several options can be used for making field and pre-job changes to a Standing AJHA based on current conditions. Note that these options can also be used for any other type of AJHA.

- Use the “AJHA Work Review and Change Request”: (This is a form in the Forms/Permits screen of AJHA.) Click “Create” and select “AJHA Work Review and Change Request” to view the form. This form provides lines to document when hazards/controls do not apply or if new hazards/controls are identified. Other change items can also be documented on this one-page form. PICs can sign the form, as can SMEs, if their agreement is necessary. PICs can also note on the form that workers were briefed to the change.

A blank Work Review and Change Request form containing the task information can be printed and used in the Pre-job Briefing, walk down, or in the field. PICs may manually enter any required changes. The document can then be filed with the work package or Pre-job briefing form. If desired, the information could later be typed into the AJHA on the data based form to establish an electronic record. If the field change seems likely to be a common change any time the work is to be done, then it can be used to assist in a formal AJHA revision.

This form was developed in AJHA to specifically serve the field change/pre-job change purpose. If opted, the Project/Facility should prepare guidance on its use to ensure that PICs, Planners, and SMEs use it appropriately and consistently.

- Use Other Existing Project/Facility Formats: For instance, the Pre-job Briefing form could be modified to add a field for Standing AJHA changes; the J-7 could be used. The most important considerations are that the change be documented as a field change, and that the system for making such changes be written in Project/Facility guidance, instruction, or procedure.
- AJHA Revision Decision: [MSC-PRO-079](#), Job Hazard Analysis requires all field changes be documented in the AJHA whether or not a formal revision is made.
- Limited Hazards Summary Report Changes: The same process as described above for AJHA can be used for this Report; however, if changes are significant enough to warrant a fully completed AJHA, then the job should be returned to the Planner for full AJHA completion by an AJHA Team.

### 7. How are Activity vs. Area Hazards Included on a Standing AJHA?

When preparing a Standing AJHA, it is sometimes difficult to predict area hazards, because some work activities can be conducted in numerous areas and because area conditions can change. Each time a Standing AJHA is used, a general review of the AJHA and a walk down or review of the area should be performed to assure the AJHA is still current and the conditions in

## Automated Job Hazards Analysis Process Guide

the work area have not changed. Some general rules of thumb in addressing area versus activity hazards in a Standing AJHA are provided below.

- Hazards/controls that are associated with the activity should be included in the AJHA.
- For Standing AJHAs conducted in one area, in similar areas, and in areas of fairly stable conditions: Include the area hazards/controls in the AJHA along with the activity hazards/controls.
- For Standing AJHAs conducted in multiple and varied areas or in areas with variable conditions: One option would be to (a) include only the activity hazards/controls in the AJHA and (b) address area hazards/controls during the Pre-job Briefing. The AJHA Work Review and Change Request or alternate system, as discussed in Section 4.9.6, could be used to document and communicate area conditions/hazards/controls present at the time of the work.

Also in this case, work area postings (e.g., for noise) could be noted during the Pre-job briefing and controls applied as specified.

When preparing a Standing AJHA in this manner, it would be appropriate to add a control under “Other” or alternate location that alerts the work team that work area hazards can vary, that work area hazard/control postings are to be reviewed and followed, and that any work area specifics be addressed during the Pre-job Briefing. The “Comments” function in the Hazards screen and /or the ‘Details” function in the Controls screen can also be used. Documentation that work area postings were addressed and followed should still be made using the AJHA Work Review and Change Request or alternate system such as information added to the Pre-job Briefing Form.

### 4.10 Useful AJHA Forms and Features

Several forms and other features were developed specifically for AJHA to assist the AJHA Team. Some important ones are described in this Section.

Forms can be printed as blank forms to be used in the Pre-Job Briefing or in the field, or they can be used to include instruction as part of AJHA completion.

#### 1. AJHA Work Review and Change Request

Use the AJHA Work Review and Change Request during the Pre-job briefing or during the work activity to:

- Make changes to hazards, controls or other actions based on existing conditions (additions, deletions, or other modifications can be made on the form).
- Document Supervisor/PIC and SME review and acceptance, as required.

## Automated Job Hazards Analysis Process Guide

- Document briefing/training of workers in the change items.
- Assist in later AJHA revisions, as appropriate.

**NOTE:** See [Section 4.9](#) for more detailed guidance.

### 2. AJHA Comments/Instructions Form and Hazard Comments Function.

On the Hazards screen, there is a “Comments” function next to each hazard statement. Use this function to:

- Provide more information regarding the hazard
- Identify contingencies regarding the hazard
- Describe conditions where the hazard may or may not be encountered.

Use the AJHA Comments/Instructions form to:

- Provide additional or more detailed instruction than what is shown under the Controls sections.
- Show possible contingency hazards, controls, actions, or instructions.
- Note any other information in the text field provided.

Note that this form can be prepared from:

- The Forms/Permits Screen by clicking Create and then clicking the Comments/Instructions form, or
- From the Hazard Tree by clicking Comments in the upper tool bar (this allows adding of comments conveniently while completing the Tree).

See [Section 4.8](#) and [4.9](#) for more detailed guidance.

### 3. AJHA Pre-Job Briefings and forms

The pre-job briefing process communicates to the workers the scope of the work, the hazards and requirements, and the controls to implement ISMS core functions. Pre-job briefings can be informal supervisor to worker assignments or structured briefings.

**Helpful Hint:** Team members may actually lead the pre-job briefing to describe their understanding of the work to be done to the Supervisor/Work Leader. The Supervisor/Work Leader is then in position to assess the readiness of the workers on such issues as potential stumbling blocks, exit strategies if a problem develops, etc. The process puts the worker in an active rather than passive role and ensures they are engaged.

## Automated Job Hazards Analysis Process Guide

For informal pre-jobs, no documentation is necessary however if desired, the PIC/Field Work Supervisor (FWS) may record in the Work Record or other space provided within the work document that a pre-job briefing was conducted. Craft signature on the work document/Work Record is an option as well.

For formal pre-jobs, the PIC/FWS ensures that conduct of the pre-job and a record of attendees is recorded on the Site Forms *Pre-Job Briefing Checklist*.

The pre-briefing should address the hazards and controls in the AJHA or Limited Hazards Summary Report. If any changes to hazards or controls are noted during the pre-job walkthrough or briefing, see [Section 4.8.5](#) and [4.9.6](#) for guidance on making, briefing, and documenting changes during the pre-job or field activities.

For radiological work meeting the requirement of [MSC-5173](#), a summary of the topics discussed and attendance at the pre-job briefing should be documented. This documentation should be maintained with the technical work document as required by MSC-5173.

**NOTE:** See [MSC-GD-14047](#), *Pre-Job Briefing and Post-Job Review Guide*.

#### 4. “Details” function on the Controls Screen

The controls for a hazard that are Mandatory or Selected are compiled and listed in the Controls Screen. Next to the listing for each control on the right is a “Details” button. Use this button to go to a text field to provide details for the control. For instance:

- When respiratory or personal protective equipment is listed as a control, write in the details (i.e., respirator type, glove type, protective clothing type) next to the generic control. The same applies to any other type of control.
- When preparing a Limited Hazards Summary Report, if the hazards are already mitigated through postings or existing permits, note this in the additional text field (e.g., under a radiation hazard note that the RWP addresses the controls; or under a noise hazard, note that the job site is already posted for noise.)

#### 5. Breakdown Job Phases on the Task Information and Controls Screens

The Task Information Screen has a feature to separate the activity into as many as seven tasks. This task breakdown feature can be used, if desired, to segregate hazards and controls by job phase. In this manner, hazards/controls can be assigned to a particular part of the activity, rather than implying that they apply throughout the work activity.

For instance, in the case of a system repair, a closed system may need to be breached and then the repair made. Hazards/controls may vary during the breach and the repair itself. In this case:

- Activity Description: System Component Repair.

## Automated Job Hazards Analysis Process Guide

- Task1: System Breach and Stabilization.
- Task2: Component Repair.

Hazards/controls of the breach would be listed under Task 1 only and would not apply to Task 2. Likewise, hazards/controls of Task 2 would be listed there. These hazard/control assignments are made on the Select Controls Screen where the overall job scope is shown with a bulleted circle and the individual Tasks are numbered to the right of the overall job scope.

### 6. Involvement of SME and participants

Documenting the involvement in the AJHA or Limited Hazard Summary Report is very important in the job hazards analysis process. The Involvement Screen identifies SMEs that must be involved in the AJHA completion process, and indicates areas that require their approval. It is also intended to list other participants in the AJHA process.

Certain hazard questions in the Identify Hazards screen, when answered "yes," either trigger the requirement for SME approval based on the hazard and/or triggered the requirement for a SME to conduct a "Specific Analysis" to evaluate the hazard and possibly specify controls. The type of SME triggered and the hazard question that triggered the involvement are listed in the Involvement screen. This tells the AJHA Coordinator, Team, and SMEs where in the AJHA that the SMEs must offer input. The Involvement screen distinguishes whether the SME was triggered based on the hazard itself or based on the requirement for the SME to conduct a Specific Analysis for the hazard.

Involvement could mean anything from a phone call and brief discussion to participation in detailed planning sessions, walkthroughs, and control development. The SMEs, AJHA Coordinator, and Team should determine the necessary extent of SME involvement based on the hazards, conditions, and risk.

In the case where the Involvement screen shows the need for a Specific Analysis, the SME must conduct this analysis and document this analysis. For documentation, the SME must go to the Controls screen and click the "Completed By" function. This function allows to SME to enter his/her name and provide any comments regarding the analysis. The requirement for an analysis does not necessarily mean that any controls or other actions are required. The SME should determine this on a case by case basis.

SMEs acknowledge their involvement and approve the AJHA by entering their names for the required SME disciplines that are triggered by the selected hazard questions. This signifies their approval of the AJHA. These SME disciplines and the hazard questions that triggered them, appear on the Involvement screen. The involvement of a particular SME discipline may be required several times in one AJHA as a result of multiple hazard questions, each that require that SME approval and/or Specific Analysis. Different individuals may approve an AJHA under the same SME discipline as reviewers of different hazard questions. In that case the approving SME should note the scope/limits of their approval/involvement using the Comments function on

## Automated Job Hazards Analysis Process Guide

the Involvement screen. When an SME approves the AJHA for a particular discipline, without any notation, it is understood that they are approving all aspects of the AJHA.

The AJHA Coordinator can also acknowledge involvement for the SME. This entry will be shown as "SME Name by AJHA Coordinator Name." This indicates that the AJHA Coordinator has acknowledged SME approval, but the SME did not personally acknowledge approval in the screen. This functionality is useful for acknowledgement by telecom, for lower risk activities where SME involvement may have only been a phone call, or when the AJHA is not available to the SME. The project/facility should determine under what circumstances this functionality is allowed. **It should not be used unless the SME has indicated his/her satisfaction with the AJHA.**

**NOTE:** *If a SMEs name was added by an AJHA Coordinator, it is highly recommended that an explanation for this be provided using the status and comments functions of the Involvement screen. Examples might include "By Telecom," "By Verbal Authorization," and the like.*

In addition to the SME involvements that were triggered by Identified Hazards, the AJHA Coordinator or Team can involve other SMEs at their discretion. These involvements can be acknowledged in the Involvement screen even if the SME was not triggered.

Other participants, such as Craft, who were involved in the AJHA, can be listed in the Involvement screen. Their names are simply entered off a site roster by the Coordinator and they should also list on the right what role they played or at a minimum the craft they represented.

When using the Limited Hazards Summary Report, the SMEs triggered needs to approve and sign off in the AJHA. This will show up in the Limited Hazards Summary Report the same as in the Standard AJHA Report.

Facility AJHA Administrators maintain SME lists in the AJHA application via the Facility Maintenance function on the START screen. The projects/facilities can request modification of the triggers for SME involvement by contacting AJHA Administration, or by forwarding the request over the AJHA Mailbox (entered from the Navigation or Start screens by clicking Information Links and Lessons Learned). Relaxation of involvement triggers may require review by Technical Authorities. The projects/facilities can also identify triggers for SME involvement for any additional hazard questions that they wish to add to Identify Hazards. They can also add other involvement triggers, such as involvement of senior management review or a review committee. They can add additional types of SME categories, as well.

### 7. Required Specific Analysis

Many of the potential hazards require a "specific analysis" to be performed uniquely for the work activity being analyzed. These analyses address details of the work activity that a knowledgeable individual or subject mater expert (SME) must assess on a case by case basis.

## Automated Job Hazards Analysis Process Guide

- Each specific analysis type control in AJHA indicates the SME discipline required to perform that specific analysis.
- When a specific analysis control is triggered, an SME qualified in the discipline prescribed, shall assess the unique circumstances of the work activity being analyzed and perform the specific analysis prescribed in the control text.
- Based on the results of his or her analysis, the SME must enter detailed specifications to mandatory controls; select from additional (optional) controls, and/or enter “user added” controls to the AJHA from the keyboard as needed.
- When the SME has completed his or her specific analysis and all needed controls are addressed in the AJHA, he or she shall enter their name in the section titled “Completed By”. This is not an approval. It is just an indicator that the specific *analysis was “completed by” the person who’s name was entered.*

Subject matter expert approvals are entered at the involvement screen. However before an SME can approve the AJHA for his or her SME discipline at the involvement screen, a name must be entered for each specific analysis associated with that SME discipline in the select controls screen.

### 4.11 Feedback and Post-Job Reviews

[MSC-PRO-079](#) requires the supervisor or work leader to make a determination as to the need for conducting a formal Post Job Review. When a formal Post Job Review or as low as reasonably achievable (ALARA) review is conducted, the results must be completed using the combined *Post Job/ALARA Review form* (Site Form A-6003-465) that is found in the Activity Level Feedback Database. This Post Job/ALARA Review form must be completed and documented in the Activity Level Feedback Database.

Informal feedback can be documented anytime that noteworthy information is available. The Activity Level Feedback Database can also be used to document this informal information using the *Activity Level Feedback Summary form* (A-6003-464) in the Database. However, it is not mandatory that you use the Database to document informal feedback, but it is highly recommended so the information can be available through database searches to aid others. Alternate systems are also acceptable for informal feedback.

Also see [MSC-GD-14047](#), *Pre-Job Briefing and Post-Job Review Guide*, for further guidance as to when Feedback and Post Job Review is warranted.

- The Activity Level Feedback Database for formal Post Job Review or informal Feedback is accessed from the Main Menu. The Activity Level Feedback Database has powerful functions to:

## Automated Job Hazards Analysis Process Guide

- Categorize Post Job/ALARA Review and informal Feedback by facility, equipment, system, activity type, hazard and other characteristics of the work.
- Search for Post Job/ALARA Review and Feedback by the categories and key words.

Use of the Activity Level Feedback Database is strongly encouraged, and is mandatory for Post Job/ALARA Reviews.

### 1. Tips for Documenting and Using Feedback in the Activity Level Feedback Database for a Particular Activity, Type of Equipment, or other Characteristic

A running record of feedback and improvement can be documented in the Activity Level Feedback Database by characteristics such as:

- Equipment Type.
- System Type.
- Maintenance Activity.
- Operations Activity.

The Feedback form is a simple text box in the Activity Level Feedback Database. Simply develop a Feedback form for the item and categorize it based on the equipment, system, and/or activity. Then retrieve the form using the search or inventory function and add to it whenever a noteworthy feedback item is developed or whenever an improvement is implemented to address feedback. This will provide an historical record over time to document feedback and any action taken to address feedback.

### 2. Tips for Using the Activity Level Feedback Database for a Standing AJHA

A running record of feedback and improvement can be documented in the Activity Level Feedback Database for a Standing AJHA as follows:

- Develop a Feedback form for a Standing AJHA in the Activity Level Feedback Database
- When Feedback is developed as work is performed over time, add to the Feedback form to generate a history over time.
- Use the Feedback information to support Standing AJHA revisions and/or to improve the Standing AJHA when it is redone after expiration.

## 5.0 ROLES AND RESPONSIBILITIES

Roles and responsibilities for various disciplines as they apply to use of the AJHA are described as follows.

## Automated Job Hazards Analysis Process Guide

### **Supervisor/Work Leader:**

The Supervisor/Work Leader/Release Authority determines if a work request is to be completed as a skill-based activity relying on Skill-Based Determination Criteria, or if the request is to be turned over to an AJHA Coordinator for hazards identification and analysis using the AJHA or Limited Hazards Summary Report as the job hazard analysis. Pre-job briefings, post job reviews, and job hazard analysis field changes are also responsibilities of the Supervisor/Work Leader.

### **AJHA Coordinator:**

Designated by the Project/Facility, the AJHA Coordinator is responsible for completion of the AJHA and Limited Hazards Summary Report. The AJHA Coordinator is usually a Planner or Procedure Writer, but can be any person authorized by the Project/Facility to perform the job hazard analysis function during the AJHA process. The AJHA Coordinator has special authorization in the AJHA application to lock/unlock/delete AJHAs.

The AJHA Coordinator leads the AJHA Team process and is responsible for:

- Becoming familiar with the task and initiating the job hazard analysis process
- Conducting the initial hazards identification and analysis;
- Using the graded approach, getting the appropriate technical disciplines involved with the work team in analyzing hazards and determining specific hazard controls;
- Encouraging workers to be involved in the process of analyzing hazards and determining specific hazard controls;
- Determination for a Limited Hazards Summary Report or an AJHA;
- Preparation of the Limited Hazards Summary Report or AJHA;
- AJHA Team involvement, including determination of team members, convening of team sessions, or otherwise ensuring team involvement;
- Using facilitator skills to effectively lead the job hazard analysis process
- Using facilitator skills assuring effective completion of the AJHA session
- Revising AJHAs.

## Automated Job Hazards Analysis Process Guide

### **Subject Matter Expert:**

SME include Environment, Safety, and Health (ES&H) disciplines, PICs, Field Supervisors, Work Leaders, Cognizant Engineers, and other disciplines or designated assignments that have expertise in a subject area important to safe performance of work. Among other functions, SMEs participate in the work planning and job hazard analysis process to identify and control hazards. When SME involvement is mandatory based on an identified hazard or condition, the appropriate SME ensures proper identification, hazard controls, lists activity specific details in the “Controls By Task” screen, completes or reviews forms and permits, and approves the AJHA on the “Involvement” screen in the AJHA for a full AJHA or Limited Hazards Summary Report.

### **Worker:**

For the purposes of AJHA completion, worker(s) are responsible for participating in work planning and job hazard analysis, initial work area walk downs, and formal work planning sessions. The worker(s) participating in such functions represents the work team and/or the craft(s) that are necessary to perform the work.

### **Project/Facility AJHA Point of Contact or Facility Support Administrator**

The Project/Facility AJHA Point of Contact (POC) or Facility Support Administrator is assigned by the Project/Facility and is the main interface between the Project/Facility and AJHA Administration. The POC is responsible for:

- Maintaining Project/Facility personnel as authorized AJHA Users and SMEs, using special authorization in the AJHA application granted by AJHA Administration;
- Coordinating Project/Facility requests with Technical Authorities and AJHA Administration for tailoring AJHA content;
- Participating in the AJHA User’s Group to provide for continuous improvement of AJHA based on feedback;
- Communicating information between AJHA Administration and the Project/Facility staff.
- Conducting the Facility Support Administrator functions within the AJHA tool.

### **AJHA Technical Authorities:**

As designated by Safety and Health and other organizations, the Technical Authorities are responsible for the content of AJHA in their respective disciplines. Technical Authorities represent such disciplines as Radiation Protection, Industrial Safety, Industrial Hygiene, Environment and Regulation, Nuclear Safety and others. Specifically, the Technical Authorities:

## Automated Job Hazards Analysis Process Guide

- Ensure that AJHA content is consistent with and stays current with requirements;
- Maintain traceability of AJHA control requirements to source documents;
- Review Project/Facility tailoring requests and work with AJHA Administration and Project/Facility AJHA POCs to process the requests;
- Participate in the AJHA User's Group to provide for continuous improvement of AJHA based on feedback;
- Provide the source of technical expertise to AJHA Administration and Projects/Facilities in their respective disciplines.

### **AJHA Administrator:**

The AJHA Administrator is responsible for the availability, maintenance, and continuous improvement of the AJHA application. The AJHA Administrator:

- Controls the AJHA application consistent with requirements;
- Coordinates with the information services function to provide the application to AJHA Users;
- Maintains the AJHA application in operable condition;
- Processes functionality improvements and other changes;
- Processes content changes as requested and accepted by POCs, Technical Authorities, the User's Group, and other appropriate personnel;
- Assists implementing Projects/Facilities with training and technical expertise in the use of the AJHA application;
- Assists in management reviews and other reviews relating to AJHA use and implementation;
- Leads the AJHA User's Group to provide for continuous improvement of AJHA based on feedback.

### **AJHA User's Group:**

The AJHA User's Group is led by the AJHA Administrator and consists of Project/Facility AJHA POCs, Technical Authorities, Bargaining Unit Representative, and others as designated by

## Automated Job Hazards Analysis Process Guide

Projects/Facilities. The AJHA User's Group provides a forum to present, discuss, and accept or decline suggestions for continuous improvement, content changes, process changes, implementation challenges, user techniques, and other items important to the AJHA application and its implementation.

### 6.0 FORMS

*Post Job/ALARA Review form (A-6003-465)*  
*Activity Level Feedback Summary form (A-6003-464)*

### 7.0 RECORD IDENTIFICATION

All records generated by this procedure are processed and maintained in accordance with [MSC-PRO-10588](#), *Records Management Processes*.

**Records Capture Table**

<b>Name of Document</b>	<b>Submittal Responsibility</b>	<b>Retention Responsibility</b>
<i>Post Job/ALARA Review form</i>	Form used and retained within the Activity Level Feedback Database	
<i>Activity Level Feedback Summary form</i>	Form used and retained within the Activity Level Feedback Database	

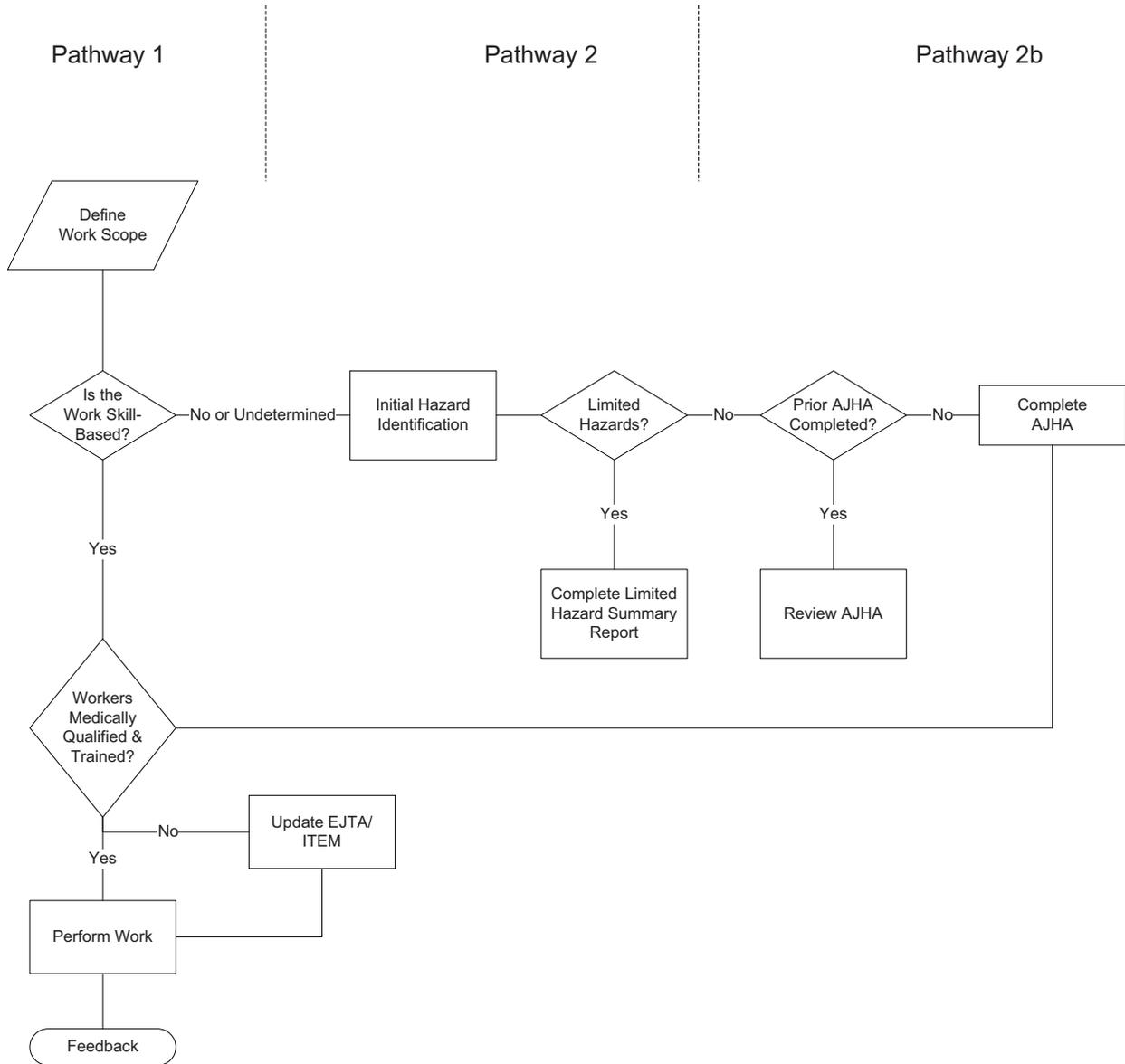
### 8.0 REFERENCES

[MSC-5173](#), *MSC Radiological Control Manual*  
[MSC-GD-12116](#), *Work Planning Guide*  
[MSC-GD-14047](#), *Pre-Job and Post-Job Review Guide*  
[MSC-MP-003](#), *Integrated Environment, Safety and Health Management System Plan*  
[MSC-MP-32219](#), *MSC Worker Safety and Health Program Description*  
[MSC-PRO-079](#), *Job Hazards Analysis*  
[MSC-PRO-164](#), *Integrated Training Electronic Matrix*  
[MSC-PRO-12115](#), *Work Management*

# Automated Job Hazards Analysis Process Guide

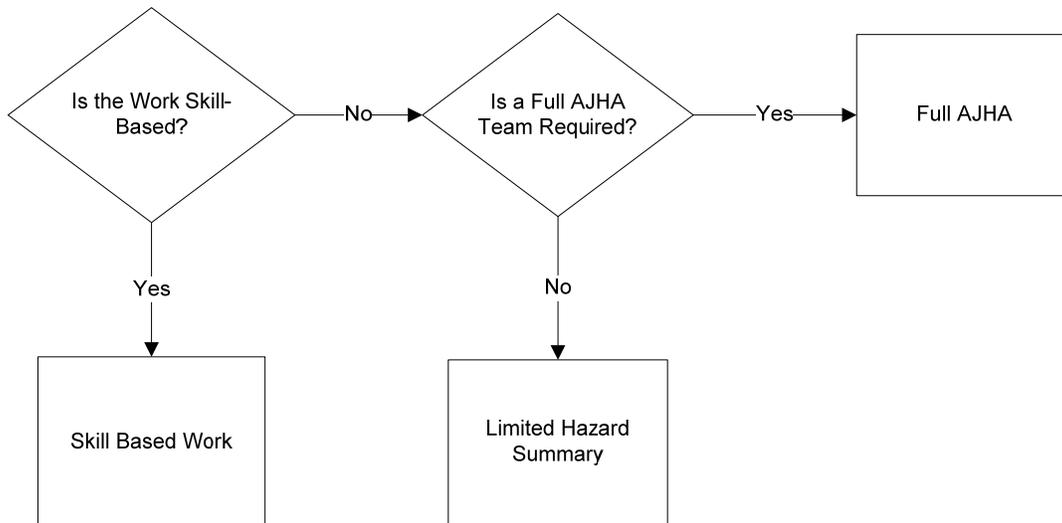
## APPENDIX A

Process Information  
Job Hazard Analysis Process  
Figure 1



# Automated Job Hazards Analysis Process Guide

Process Information  
Hazard Analysis Process  
Figure 2



## Automated Job Hazards Analysis Process Guide

### Worksheet for Hazard Analysis Process Pathways

**References:** Summarizes Section 5.0 and Figure 1 of [MSC-PRO-079](#) and [Section 4.0](#) and [Appendix B](#) of AJHA Process Guide.

**Process Determination:** Proceed along one of three possible pathways for hazard analysis and control.

**Pathway 1:** Skill-Based Work - Sufficient when workers are trained, medically qualified, and understand the hazards and controls to safely perform work based on Skill-Based Determination Criteria.

- Used for Skill-Based Work.
- Supervisor/Work Leader/ Release Authority determine no formal planning required.
- Hazards are addressed through qualification, and training.
- Updates are provided prior to work for worker EJTA, medical qualification, and training, if necessary.
- No AJHA is required.
- Informal Feedback.

**Pathway 2A:** Initial Hazards Identification with Limited Hazards Summary Report -- Sufficient when initial analysis shows hazards are already or easily mitigated and AJHA Team is not necessary.

- Used for work beyond Skill-Based Work where hazards exist for the area/activity but are easily mitigated or already mitigated by various means. Also used when uncertainties exist whether work is skill-based.
- AJHA Coordinator conducts initial hazards identification including such items as initial field walk down, worksite review, work history review, etc. and determines that hazards are limited and easily or already mitigated. (Employee involvement is strongly encouraged.)
- AJHA Coordinator self-initiates an AJHA, verifying limited hazards and adequate controls.
- AJHA Hazard Tree must be fully completed allowing preparation of a Limited Hazards Summary Report and printing of the report from the AJHA application.

## Automated Job Hazards Analysis Process Guide

- No AJHA Team is necessary based on limited hazards, although select SME input and sign-off can be solicited by the AJHA Coordinator.
- Limited Hazards Summary Report combined with workers' EJTA/ITEM qualifications document and address hazards and controls.
- Informal Feedback.

**Pathway 2B:** AJHA Team - Necessary when initial hazards identification shows environment, hazards and/or work complexities are significant enough to warrant AJHA Team involvement and AJHA completion.

- Used when initial hazards identification indicates hazard(s) or condition(s) warrant the AJHA Team involvement and fully completed AJHA.
- AJHA Coordinator conducts initial hazard identification and determines that hazards exist and are not easily or already mitigated.
- AJHA Coordinator convenes AJHA Work Team.
- AJHA Work Team completes new AJHA or validates/revises/clones existing AJHA.
- Determine if feedback is formal or informal.

## Automated Job Hazards Analysis Process Guide

### APPENDIX B

#### Worksheet for Preparing and Using a Limited Hazards Summary Report

**References:** Supplements Section 4.2.3 of the AJHA Process Guide and [MSC-PRO-079](#), *Job Hazard Analysis*, Section 5.0.

**Application:** Limited Hazards Summary Report applies when Initial Hazards identification activities show hazards are already or easily mitigated and an AJHA Team with a full AJHA completion is not warranted.

**Responsibility:** The AJHA Coordinator prepares the Report. Team input is not required, but the AJHA Coordinator can involve workers, select SME, or others as desired.

#### Limited Hazards Summary Report Preparation:

1. **Required:** Conduct Initial Hazards Identification Activities and determine that a Limited Hazards Summary Report is adequate based on limited or mitigated hazards.
2. **Required:** Start a new AJHA from scratch.
3. **Required:** Complete the Task Information Screen.
4. **Required:** Complete the Hazard Tree in the Identify Hazards Screen.
5. **As Appropriate:** In the Controls Screens, Comments Forms, or other appropriate area, enter any limited controls/actions necessary for the work, reference any controlling documents/actions that are already in place to mitigate hazards (e.g., an active Radioactive Work Permit [RWP], other permit, workplace postings, etc.), and identify important workplace conditions that must exist/not exist for the work. See examples below for the types of entries that might be made.
6. **As Appropriate:** Involve select SMEs and obtain their review/sign-off on the Involvement Screen. See examples below where SME sign-off is appropriate.
7. **Required:** Finalize the Limited Hazards Summary Report using the button indicated on the Finalize Screen.
8. **Required:** Print the Limited Hazards Summary Report using the button in the upper tool bar of the Print Screen.
9. **Required:** As the final step, just as the work is about to commence, assure the limited hazard summary report is still valid and the worksite conditions have not changed such that new hazards are introduced.

## Automated Job Hazards Analysis Process Guide

### Examples of Control Entries and SME Input:

1. Scenario: A work area is being entered where radiological and some non-radiological hazards are present. An RWP is in place that mitigates the hazards.

Controls/SME Actions: On the Hazard Tree, check the applicable hazard questions. On Controls by Task/Additional Text, type the RWP that applies (or enter it on the Forms/Permits section if desired). Have the RadCon SME acknowledge by sign-off on the Involvement Screen.

2. Scenario: The same as Scenario 1, except that the activity is adding a noise hazard.

Controls/SME Actions: Same as Scenario 1, but also have the Safety SME specify the type of hearing protection and sign-off on the Involvement Screen.

3. Scenario: The same as Scenario 1, except that the activity is adding a noise hazard and requires a chemical and/or radiological waste system breach.

Controls/SME Actions: If you determined that a Limited Hazards Summary Report was adequate, you probably made the wrong decision. Do not use a Limited Hazards Summary Report. Convene an AJHA Team and complete a full AJHA.

4. Scenario: Work is to be conducted on a roof. A fall hazard is possible, but should be easily mitigated.

Controls/SME Actions: Indicate the fall hazard on the Hazard Tree. Have the Safety SME identify the mitigating action on the Controls Screens and sign-off on the Involvement Screen.

5. Scenario: Work is to be conducted in an area where noise levels could exceed 85 dBA. No other hazards are associated with the activity.

Controls/SME Actions: Indicate the noise hazard and level “2” hazard question (> 85 dBA) on the Hazard Tree. Have the Industrial Hygiene SME determine if any optional controls are needed and sign-off on the Involvement Screen. No additional team involvement is required.

**NOTE:** *If this work is to be performed in an area where the noise levels have been predetermined and posted as a part of a facility safety evaluation, the supervisor may choose to have this work performed as “Skill-Based Work.” This would be justified because the hazard and related controls have already been determined by the Industrial Hygiene SME and are posted. In this case the supervisor must also assure the workers’ EJTA/ITEM covers the medical qualification and training. In this case, the AJHA would not have to be used and the AJHA Coordinator would have no role.*

## Automated Job Hazards Analysis Process Guide

### APPENDIX C Glossary of Terms

<b>Formal Post Job Review</b>	A preplanned exchange of essential conduct of work information between assigned workers and task Supervisor/Work Leader. They are designed to solicit worker feedback regarding the completion of the work activity/task in order to affirm or seek improvement of work performance. The positive and negative outcomes experienced during work performance serve as the talking points that lead to continual improvement. Such reviews are documented, and are typically orchestrated in a meeting or similar joint session. Job participants discuss the effectiveness of hazard identification activities, work hazard controls, emergency contingency actions, and individual roles/responsibilities.
<b>Formal Pre-Job Briefing</b>	A preplanned exchange of essential conduct of work information between assigned workers and task Supervisor/Work Leader. Such briefings are documented, and are typically orchestrated in a meeting or similar joint session. The Pre-job briefing is the last confirmation of readiness before performing individual work activities/tasks and provides the job participants with a collective understanding of the task to be completed, requirements for performing the task, identified hazards and necessary controls, environmental impacts, facility conditions, emergency contingency actions, and individual roles/responsibilities. An AJHA developed for the work should be used to communicate information during the Pre-job discussion.
<b>Graded Approach</b>	The process of <i>tailoring</i> hazard controls to the work being performed, applying a level of planning and rigor that is commensurate to the level of ESH issues, risk, complexity, and work coordination. Graded approach seeks to achieve a balanced combination of craft skills, written guidance/worker instructions, and worksite supervision.
<b>Hazard</b>	A work place hazard means a physical, chemical, biological, or safety hazard with a potential to cause illness, injury, or death to a person or damage to the environment (e.g. environmental impact).
<b>Informal Feedback</b>	A method used to exchange S&H information, usually associated with performance of limited hazard tasks. Such reviews are not routinely documented, and may be as simple as a face-to-face communication or brief discussion between the worker(s) and the responsible Supervisor/Work Leader covering any notable safety experience resulting from performance of the work. Such Post job reviews communicate comments to reinforce or influence change in conduct of work.

## Automated Job Hazards Analysis Process Guide

<b>Limited Hazards</b>	<p>This term refers to the concept that the potential hazards associated with the scope of work being reviewed are known (or easy to identify) and stable, screen as non-rad or low radiological risk, and the work activity expected to pose no difficulty for team members to understand. Although the low level of severity and complexity built into the work will not necessitate the convening of an AJHA Team, some SME review and approval will still be triggered.</p>
<b>Skill-Based Work</b>	<p>Work meeting the criteria outlined in the Skill-Based Determination Criteria document in <a href="#">MSC-PRO-079</a>, <i>Job Hazard Analysis, Appendix B</i>.</p>
<b>Standing AJHA</b>	<p>The method used to document job hazard analysis for a defined scope of work which is activity-based, considered routine in nature, and is performed on a regular or repetitive basis under stable conditions. A Standing AJHA may be applied to work performed in more than one location when the activities/tasks in the work environment are consistent (e.g., hazards and controls do not vary), with conditions expected to remain constant. A Standing AJHA may be modified, or a new one developed, when the activities/tasks change.</p>
<b>Validation Authority</b>	<p>The individual in an organization who has the responsibility and authority to validate work requests. <b>NOTE:</b> <i>This job description/position title may not exist in all Project locations and, therefore, does not always apply.</i></p>
<b>Worksite Review</b>	<p>The activity/process undertaken to think-through a planned job to assure a level of readiness to perform work. It includes an understanding of the work environment hazards that may be acquired through inherent knowledge, work document review, or work site walkthrough.</p>

## Automated Job Hazards Analysis Process Guide

### APPENDIX D

#### Conducting an Effective “Analysis” in Activity-Based Job Hazard Analysis

Activity-based Job Hazard Analysis (JHA) is an analysis of associated hazards within a particular job or task. The analysis assesses each aspect (step) of a task and addresses the items which could result in an injury to an individual by focusing on the relationship between the worker, the task, the tools, and the work environment. This involves an evaluation of the mechanics of any operation, identifying what can go wrong, and how to do it safely (controls).

After selecting a job for hazard analysis, JHA is essentially a 2-step process:

1. identify the hazards, unsafe conditions and unsafe work practices associated with each step of the individual task/operation; and
2. determine the actions to take to mitigate the hazards and identified contingencies associated with task/operation performance.

#### How do I “analyze” potential hazards?

In addition to SME and worker input, knowledge of the job scope (e.g., via walk down, past performance, personal experience, lessons learned) is helpful in establishing what could go wrong at each step of the activity. We need to understand the job we are analyzing. This requires careful examination. Discussion and review of the task between the Work Supervisor and Team members (including any SMEs) should produce enough information to evaluate the hazards without getting overly detailed. The more familiarity the group has with the task, the less complex the evaluation is likely to be.

Hazards should be analyzed by considering each step in the work activity and anticipating what the worker(s) might encounter during the particular job that is being analyzed. The analysts should consider the work environment, the materials and equipment that are to be used, and the work procedures themselves. Most tasks can be viewed in manageable steps/parts to produce the most effective analysis. Some judgment will be needed; hence, the purpose for selecting knowledgeable individuals to review the work.

To gain a full understanding of the hazard, those analyzing the job should ask such questions as:

**NOTE:** *This is not intended to represent a complete list.*

- Where is the job happening (environment)?
- What is happening?
- What can go wrong (include contingent events)?
- How could an event happen?
- What are the consequences?
- How could it happen?

## Automated Job Hazards Analysis Process Guide

- Do I take into consideration the following hazards?
  - a. Striking against or being struck by an object.
  - b. Getting caught in or between objects.
  - c. Use of tools, machines, or equipment.
  - d. Housekeeping.
  - e. Lifting, pushing, pulling motions.
  - f. Organization in flow of work.
  - g. Reviewing hazards indirectly associated with the work scope (or exterior to the work environment boundaries) that may also be encountered (e.g., an exposure present near a lockout/tagout isolation point that is not in the vicinity of the work; adjacent or collocated work activities).

### Things to remember when establishing hazard controls:

Always remember to apply the hierarchy of controls to the extent possible.

- (1) Elimination or substitution of the hazards where feasible and appropriate;
- (2) Engineering controls where feasible and appropriate;
- (3) Work practices and administrative controls that limit worker exposures; and
- (4) Personal protective equipment.

Subject Matter Expert (SME) analysis may be inclusive (i.e. result in a decision to select or add new controls) or may be exclusive (i.e. result in a decision that the conditions of the activity do not require any additional control measures). Both are legitimate outcomes. When an SME review results in the selection or addition of a control the result is apparent. When the result of an SME analysis is exclusive the SME should enter SME Analysis Notes that record the basis / rationale used to determine no additional controls are needed. Several of the SME Analyses require the SME to “determine the need for”... some type of control. The SME may find that an exposure limit will not likely be exceeded, or the work to be done will not be in an environmentally sensitive area. As a result no new controls are added, yet that decision is a key element of the hazard analysis. Decisions like these should be recorded in the SME Analysis Notes.

The control type “SME Analysis” is not only intended to prompt the SME to perform a specific review, but also to provide a place to record the basis for the control measures selected. For example, when an Industrial Safety SME selects an anchor point for a worker’s fall arrest, that decision should be supported with a calculation that demonstrates the selected anchor point can handle the required shock load rating. The calculations for that anchor point should be added to the SME Analysis Notes. The SME Analysis Notes are NOT to be used to enter the control measures. There is a special report in AJHA just for the SME analysis which includes the SME Analysis Notes. All control measures must be entered in the Combined (HC) Details screen in order to show up on the AJHA standard report.