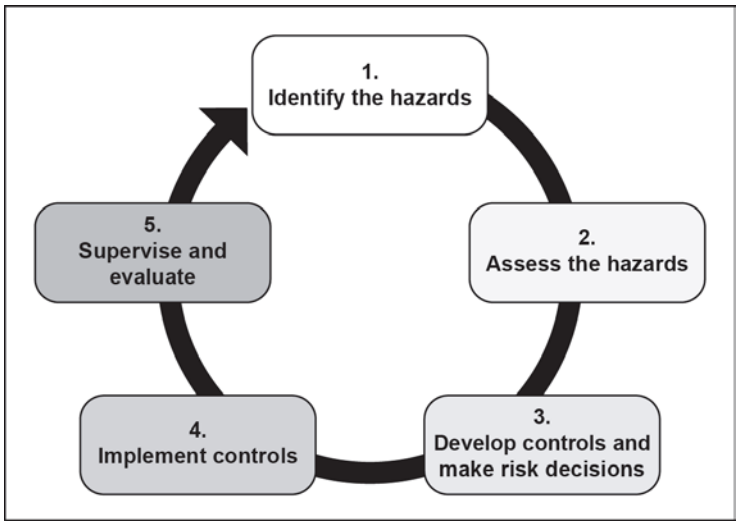
USAG Bavaria

Job Hazard Analysis (JHA) Guide



May 2016

Job Hazard Analysis (JHA)

(Excerpts from OSHA Pamphlet 3071, AR/P 385-10, DoDI 6055.01, et al)

OSHA standard 29 CFR 1910 requires employers to assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). The employer shall verify that the required workplace hazard assessment has been performed through a written certification that identifies:

- the workplace evaluated;
- the person certifying that the evaluation has been performed;
- the date(s) of the hazard assessment;
- and which identifies the document as a certification of hazard assessment.

DoD Instruction 6055.01 requires each service to perform job hazard analyses for existing, new, and changed operations to identify hazards and safe work conditions, practices, and procedures.

The Army meets these two requirements by requiring supervisors to conduct formal (DOCUMENTED) Job Hazard Analysis (JHAs) in all work centers.

NOTE: A JHA for a work center that is entirely administrative will obviously not be as detailed as one for an industrial area. Don't make it more complicated than it needs to be. How many actual hazards exist in a well-organized office environment?

What is a Job Hazard Analysis (JHA)?

A job hazard analysis is a technique that focuses on job tasks as a way to identify hazards before they cause an accident. It focuses on the relationship between the worker, the task, the tools, and the work environment. Ideally, after you identify uncontrolled hazards, you will also take steps to eliminate or reduce them to an acceptable risk level and then communicate these findings to all of your employees in a documented format.

Purpose:

The purpose of the JHA is to identify hazards associated with the workplace. It serves as a tool for supervisors to implement controls needed to improve working conditions or develop administrative controls that reduce workplace hazards. The primary focus of JHA is the development of operational employee protection programs, identifying and eliminating hazards in the workplace, and to identify employees requiring medical surveillance due to work related factors. It also assists supervisors in determining personal protective equipment (PPE) requirements.

Supervisors can use the findings of a job hazard analysis to eliminate and prevent hazards in their workplaces. This is likely to result in fewer worker injuries and illnesses; safer, more effective work methods; reduced workers' compensation costs; and increased worker productivity. The analysis also can be **a valuable tool for training new employees in the steps required to perform their jobs safely.**

For a job hazard analysis to be effective, management must demonstrate its commitment to safety and health and follow through to correct any uncontrolled hazards identified. Otherwise, management will lose credibility and employees may hesitate to go to management when dangerous conditions threaten them.

Where do I begin?

1. **Involve your employees**. It is very important to involve your employees in the hazard analysis process. They have a unique understanding of the job, and this knowledge is invaluable for finding hazards. Involving employees will help minimize oversights, ensure a quality analysis, and get workers to "buy in" to the solutions because they will share ownership in their safety and health program.

2. **Review your accident history**. Review with your employees your worksite's history of accidents and occupational illnesses that needed treatment, losses that required repair or replacement, and any "near misses" —events in which an accident or loss did not occur, but could have. These events are indicators that the existing hazard controls (if any) may not be adequate and deserve more scrutiny.

3. **Conduct a preliminary job review**. Discuss with your employees the hazards they know exist in their current work and surroundings. Brainstorm with them for ideas to eliminate or control those hazards.
If any hazards exist that pose an immediate danger to an employee's life or health, take immediate action to protect the worker. Any problems that can be corrected easily should be corrected as soon as possible. Do not wait to complete your job hazard analysis. This will demonstrate your commitment to safety and health and enable you to focus on the hazards and jobs that need more study because of their complexity. For those hazards determined to present unacceptable risks, evaluate types of hazard controls.

4. **List, rank, and set priorities for hazardous jobs**. List jobs with hazards that present unacceptable risks, based on those most likely to occur and with the most severe consequences. These jobs should be your first priority for analysis.

5. **Outline the steps or tasks**. Nearly every job can be broken down into job tasks or steps. When beginning a job hazard analysis, watch the employee perform the job and list each step as the worker takes it. Be sure to record enough information to describe each job action without getting overly detailed. Avoid making the breakdown of steps so detailed that it becomes unnecessarily long or so broad that it does not include basic steps. You may find it valuable to get input from other workers who have performed the same job. Later, review the job steps with the employee to make sure you have not omitted something. Point out that you are evaluating the job itself, not the employee's job performance. Include the employee in all phases of the analysis—from reviewing the job steps and procedures to discussing uncontrolled hazards and recommended solutions.

What is a hazard?

A hazard is the potential for harm. In practical terms, a hazard often is associated with a condition or activity that, if left uncontrolled, can result in an injury or illness.
Identifying hazards and eliminating or controlling them as early as possible will help prevent injuries and illnesses.

How do I identify workplace hazards?

A job hazard analysis is an exercise in detective work. Your goal is to discover the following:

- What can go wrong?
- What are the consequences?
- How could it arise?
- What are other contributing factors?
- How likely is it that the hazard will occur?

To make your job hazard analysis useful, document the answers to these questions in a consistent manner. Describing a hazard in this way helps to ensure that your efforts to eliminate the hazard and implement hazard controls help target the most important contributors to the hazard.

Good hazard scenarios describe:

- Where it is happening (environment),
- Who or what it is happening to (exposure),
- What precipitates the hazard (trigger),
- The outcome that would occur should it happen (consequence), and
- Any other contributing factors.

Rarely is a hazard a simple case of one singular cause resulting in one singular effect. More frequently, many contributing factors tend to line up in a certain way to create the hazard.

Here is an example of a hazard scenario:
In the metal shop (environment), while clearing a snag (trigger), a worker's hand (exposure) comes into contact with a rotating pulley. It pulls his hand into the machine and severs his fingers (consequences) quickly.

To perform a job hazard analysis, you would ask:
• **What can go wrong?** The worker's hand could come into contact with a rotating object that "catches" it and pulls it into the machine.
• **What are the consequences?** The worker could receive a severe injury and lose fingers and hands.
• **How could it happen?** The accident could happen as a result of the worker trying to clear a snag during operations or as part of a maintenance activity while the pulley is operating. Obviously, this hazard scenario could not occur if the pulley is not rotating.
• **What are other contributing factors?** This hazard occurs very quickly. It does not give the worker much opportunity to recover or prevent it once his hand comes into contact with the pulley. This is an important factor, because it helps you determine the severity and likelihood of an accident when selecting appropriate hazard controls. Unfortunately, experience has shown

that training is not very effective in hazard control when triggering events happen quickly because humans can react only so quickly.

• **How likely is it that the hazard will occur?** This determination requires some judgment. If there have been "near-misses" or actual cases, then the likelihood of a recurrence would be considered high. If the pulley is exposed and easily accessible, that also is a consideration. In the example, the likelihood that the hazard will occur is high because there is no guard preventing contact, and the operation is performed while the machine is running. By following the steps in this example, you can organize your hazard analysis activities.

Common Hazards

- **Chemical (Toxic):** A chemical that exposes a person by absorption through the skin, inhalation, or through the blood stream that causes illness, disease, or death. The amount of chemical exposure is critical in determining hazardous effects. Check Safety Data Sheets (SDS), and/or OSHA 1910.1000 for chemical hazard information.
- **Chemical (Flammable):** A chemical that, when exposed to a heat ignition source, results in combustion. Typically, the lower a chemical's flash point and boiling point, the more flammable the chemical. Check MSDS for flammability information.
- **Chemical (Corrosive):** A chemical that, when it comes into contact with skin, metal, or other materials, damages the materials. Acids and bases are examples of corrosives.
- **Explosion (Chemical Reaction):** Self-explanatory.
- **Explosion Over Pressurization:** Sudden and violent release of a large amount of gas/energy due to a significant pressure difference such as rupture in a boiler or compressed gas cylinder.
- **Electrical (Shock/Short Circuit):** Contact with exposed conductors or a device that (Shock/ is incorrectly or inadvertently grounded, such as when a metal ladder comes into contact with power lines. 60Hz alternating current (common house current) is very dangerous because it can stop the heart.
- **Electrical (Fire):** Use of electrical power that results in electrical overheating or arcing to the point of combustion or ignition of flammables, or electrical component damage.
- **Electrical (Static/ESD):** The moving or rubbing of wool, nylon, other synthetic fibers, and even flowing liquids can generate static electricity. This creates an excess or deficiency of electrons on the surface of material that discharges (spark) to the ground resulting in the ignition of flammables or damage to electronics or the body's nervous system.
- **Electrical (Loss of Power):** Safety-critical equipment failure as a result of loss of power.
- **Ergonomics (Strain):** Damage of tissue due to overexertion (strains and sprains) or repetitive motion.
- **Ergonomics (Human Error):** A system design, procedure, or equipment that is error-provocative. (A switch goes up to turn something off).
- **Excavation (Collapse):** Soil collapse in a trench or excavation as a result of improper or inadequate shoring. Soil type is critical in determining the hazard likelihood.

- **Fall (Slip, Trip):** Conditions that result in falls (impacts) from height or traditional walking surfaces (such as slippery floors, poor housekeeping, uneven walking surfaces, exposed ledges, etc.)
- **Fire/Heat:** Temperatures that can cause burns to the skin or damage to other organs. Fires require a heat source, fuel, and oxygen.
- **Mechanical/ Vibration (Chaffing/Fatigue):** Vibration that can cause damage to nerve endings, or material fatigue that results in a safety-critical / failure. (Examples are abraded slings and ropes, weakened hoses and belts.)
- **Mechanical Failure:** Self-explanatory; typically occurs when devices exceed designed capacity or are inadequately maintained.
- **Mechanical:** Skin, muscle, or body part exposed to crushing, caught-between, cutting, tearing, shearing items or equipment.
- **Noise:** Noise levels (>85 dBA 8 hr. TWA) that result in hearing damage or inability to communicate safety-critical information.
- **Radiation (Ionizing):** Alpha, Beta, Gamma, neutral particles, and X-rays that cause injury (tissue damage) by ionization of cellular components.
- **Radiation (Non-Ionizing):** Ultraviolet, visible light, infrared, and microwaves that cause injury to tissue by thermal or photochemical means.
- **Struck By (Mass Acceleration):** Accelerated mass that strikes the body causing injury or death. (Examples are falling objects and projectiles.)
- **Struck Against:** Injury to a body part as a result of coming into contact of a surface in which action was initiated by the person. (An example is when a screwdriver slips.)
- **Temperature Extreme (Heat/Cold):** Temperatures that result in heat stress, exhaustion, or metabolic slow down such as hypothermia.
- **Visibility:** Lack of lighting or obstructed vision that results in an error or other hazard.
- **Weather Phenomena (Snow/Rain/Wind/Ice**): Self-explanatory.

Potential Accident Causes Or Hazards: For each task step, ask yourself what accident could happen to workers performing the task and what the probability would be of the accident occurring. Get the answers by: (1) observing the task, (2) discussing the task with workers and/or (3) using ―lessons learned‖ from other accidents. Ask the questions:

- Can workers be struck by or contacted by anything?
- Can they strike against or be exposed to any item that can cause injury?
- Can they be caught in or between anything?
- Can they fall?
- Can they overexert themselves?
- Are they required to do repetitive lifting or heavy lifting?
- Are there potential hazards such as chemical substances, physical agents (including noise, ergonomic and thermal stress), ionizing and non-ionizing radiation or biological exposures?

How do I correct or prevent hazards?

After reviewing your list of hazards with the employee, consider what control methods will eliminate or reduce them.

For each potential accident cause or hazard identified, consider the following questions:

- How should workers perform the task step to avoid the accident or eliminate the potential hazard?
- What can be done to eliminate or mitigate the hazard by redesigning the work area or equipment?
- How can the procedure be modified to eliminate the hazard?

NOTE: Be sure to describe in detail the precautions workers must take and ensure that these steps are placed in the task procedure or checklist. Take special care to ensure important steps or details are not inadvertently omitted from the task and that guidance is clear, specific and easily understood by all workers—particularly new employees.

Discuss your recommendations with all employees who perform the job and consider their responses carefully. If you plan to introduce new or modified job procedures, be sure they understand what they are required to do and the reasons for the changes.

Hazard Control Measures

Information obtained from a job hazard analysis is useless unless hazard control measures recommended in the analysis are incorporated into the tasks. Managers should recognize that not all hazard controls are equal. Some are more effective than others at reducing the risk. The order of precedence and effectiveness of hazard control is the following:

1. Engineering controls.
2. Administrative controls.
3. Personal protective equipment.

The most effective controls are engineering controls that physically change a machine or work environment to prevent employee exposure to the hazard. The more reliable or less likely a hazard control can be circumvented, the better. If this is not feasible, administrative controls may be appropriate. This may involve changing how employees do their jobs. Engineering controls are the preferred method of reducing exposure to hazards, but are not always feasible.
Following are examples of engineering controls that can be implemented:

Engineering controls include the following:

- Elimination/minimization of the hazard—Designing the facility, equipment, or process to remove the hazard, or substituting processes, equipment, materials, or other factors to lessen the hazard;
- Enclosure of the hazard using enclosed cabs, enclosures for noisy equipment, or other means;

- Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains, or other means; and
- Removal or redirection of the hazard such as with local and exhaust ventilation.
-

Administrative controls include the following:

- Written operating procedures, work permits, and safe work practices;
- Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards);
- Monitoring the use of highly hazardous materials;
- Alarms, signs, and warnings;
- Buddy system; and
- Training.

Personal Protective Equipment—such as respirators, hearing protection, protective clothing, safety glasses, and hardhats—is acceptable as a control method in the following circumstances:

- When engineering controls are not feasible or do not totally eliminate the hazard;
- While engineering controls are being developed;
- When safe work practices do not provide sufficient additional protection; and
- During emergencies when engineering controls may not be feasible.

Personal Protective Equipment (PPE) to be used is determined by hazard identification in hazard analysis. PPE should be used when all other hazard controls have been exhausted or more significant hazard controls are not feasible.

Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently.
In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

Documenting the JHA

Any format is acceptable. The example provided below is just a sample format—there are numerous "templates" available online. Use whatever format is convenient for your work center. The attached JHA is a sample JHA for an administrative/ office workplace. They key is to assess the working environment diligently.

Federal law stipulates JHAs will be maintained on file at the workplace, and updated whenever new hazards are introduced into the work environment (i.e. a new process or piece of equipment).

Once completed, the JHA should be used as an outline to train all (U.S. and Local National) new employees before they start working. Employees then sign the JHA acknowledging they are aware of the hazards of their new job.

Why should I review my job hazard analysis?

The Army requires annual reviews of all JHAs. Periodically reviewing your job hazard analysis ensures that it remains current and continues to help reduce workplace accidents and injuries. Even if the job has not changed, it is possible that during the review process you will identify hazards that were not identified in the initial analysis.

It is particularly important to review your job hazard analysis if an illness or injury occurs on a specific job. Based on the circumstances, you may determine that you need to change the job procedure to prevent similar incidents in the future. If an employee's failure to follow proper job procedures results in a "close call," discuss the situation with all employees who perform the job and remind them of proper procedures. Any time you revise a job hazard analysis, it is important to train all employees affected by the changes in the new job methods, procedures, or protective measures adopted.

Important: JHAs must be **workplace-specific** and reviewed in earnest annually by the workplace supervisor. The review must be **signed and dated** by the supervisor every year.

If you have any questions or require any assistance during the JHA process, please call your Garrison Safety Office.

Job Hazard Analysis (JHA) for: (Workplace)

Gegaehrdungsbeurteiling

Date of Hazard Assessment:	Installation: USAG Hohenfels	
Directorate:	Building:	
Room:	Notes/Misc.	

J.H.A Type /Art der Gefaehrdungsbeurteilung		
Check appropriate reason / Zutreffendes ankreuzen		
☐ Initial/Erstbeurteilung	☐ New Procedure	☐ New Equipment or Machinery
☐ Other (explain)		

Supervisor Certification	
Certified by:	E-mail Address:
Job Title:	Telephone Number:

Work Tasks/Job Steps *Describe the tasks / steps involved in the work process– in sequence*	**Recognized or Potential Hazard(s)/*Gefahren***	**Risk Level (Probability x Severity)** (Low, Medium or High)	**Hazard Control Measures** *(Detail controls to be implemented, based on the hierarchy of control options)*
Occasional lifting of heavy and/or bulky items	Sprains/Strains	Medium	Use mechanical means to lift and move heavy items, use push carts and dolly. Always employ proper lifting techniques and get help with loads that cannot be safely lifted by one person. Wear hand and foot protection to safeguard against crushing and pinching injuries.
Occasional exposure to general cleaning chemicals.	Some chemicals are flammable or potentially irritating to the eyes/skin.	Low	Use general safety precautions. Store flammables in flammable storage locker. Nitrile gloves and safety glasses are available in storage room.
General Office Work	Back Strain, Eye Strain, Repetitive Motion Injury	Low	Change work activity often to interrupt repetitions activity or motion. Avoid excessive unnatural or awkward motions such as twisting the arm or wrist and overexertion. Make a conscious effort to avoid incorrect posture.
General Office Work	Physical Injury and/or Trauma: Slips, Trips and Falls, Struck by Falling Objects	Low	Practice Good Housekeeping i.e., keep floors clear of debris and liquid spills. Do not block or restrict doorways, halls, closets or paths of egress. Do not stand on chairs, use foot stool or ladder. Open only one file drawer at a time and secure cabinet to the wall if feasible. Never overload shelves and stack evenly to avoid tipping.

Work Tasks/Job Steps *Describe the tasks / steps involved in the work process– in sequence*	**Recognized or Potential Hazard(s)/*Gefahren***	**Risk Level (Probability x Severity)** (Low, Medium or High)	**Hazard Control Measures** *(Detail controls to be implemented, based on the hierarchy of control options)*
Using electrical equipment	Electrical shock, Equipment damage	Low	Never use extension cords in place of permanent wiring. If a cord must be used make sure it is properly sized for the voltage and amperage of the equipment. Avoid unnecessary use of adapters and multi-outlet strips. Do not run power cords through door openings or under chairs or carpets were it may be walked on or pinched. Ensure machines and equipment are grounded, extension cords are the 3-wire type. Ensure the plugs and wall outlets are in good condition and circuits are not overloaded.
Using electrical equipment	Fire	Low	Appropriately placed fire extinguisher, remove all combustibles and fire hazards from area.
Using stairways, halls, ramps and storage spaces around office areas	Slips, Trips, Falls	Low	Ensure there is adequate lighting – suitable for the work to be done. Ramps have a nonslip surface. Stairways are clear-not cluttered. Stair treads are in good condition. Handrails are installed. Halls are kept clear of equipment and supplies
Using bookcases, shelves and cabinets	Injuries from materials tipping and falling	Low	Ensure that shelves are not overloaded, heavy storage shelves are secured to the wall, heavy storage files are secured from tipping with only one drawer open at a time and bookcases are secured from tipping.

Work Tasks/Job Steps *Describe the tasks / steps involved in the work process– in sequence*	**Recognized or Potential Hazard(s)/*Gefahren***	**Risk Level (Probability x Severity)** (Low, Medium or High)	**Hazard Control Measures** *(Detail controls to be implemented, based on the hierarchy of control options)*
Using office equipment	Cuts, sprains, strains and injuries caused by personnel tripping and falling	Low	Ensure file drawers are closed when not in use and are not over-stuffed. Ensure chairs are in good mechanical condition, fans are guarded and secure from falling. Paper cutters are equipped with a guard, safe use of paper shredders (keep loose hanging items such as badges and ties clear), step stools are used when needed and kept clear of aisleways when not in use. Ensure paper, supplies and other material are safely stacked. Ensure knives and scissors are used and stored correctly.
Computer work	Visual problems such as eye fatigue/irritation, blurred vision, headaches and dizziness. Risk factors that can cause or aggravate musculoskeletal disorders such as tendonitis, low back pain and carpal tunnel syndrome	Low	Ensure proper lighting where VDT's are being used. Use a non-glare screen. Use correct screen positioning and take vision breaks. Encourage the use of a screen prompt for ergonomic breaks. Control workplace risk factor exposure. Ensure ergonomic design and controls for present, new or changed jobs. Provide medical management when needed. Educate employees about the risk factors associated with musculoskeletal disorders. Identify who employees report work-related disorders to. Encourage early reporting of signs and symptoms.

Work Tasks/Job Steps *Describe the tasks / steps involved in the work process– in sequence*	**Recognized or Potential Hazard(s)/*Gefahren***	**Risk Level (Probability x Severity)** (Low, Medium or High)	**Hazard Control Measures** *(Detail controls to be implemented, based on the hierarchy of control options)*
Official Travel	Vehicle accidents. Moving/carrying luggage and equipment	Low	Stay alert. Ensure the vehicle to be used is in safe working order. Inspect the vehicle prior to use. Always plan the trip fully prior to leaving or returning. Drive with the vehicle doors locked. Keep plenty of gasoline in the vehicle's tank. Operate the vehicle in the safest manner road conditions will allow. Observe all traffic laws. Participate in defensive driving. Seat belt use is mandatory. Use caution when in and around airports. Stay in area where there are other people. Use restroom facilities that are located near to public areas. Be aware of people around you. Pack travel baggage/equipment not to exceed safe lifting weight (depends on individuals) and use good lifting techniques.

Other new employee training requirements (as applicable):

- Hazard Communication Program (for employees exposed to hazardous chemicals).
- Fire Safety and Emergency Evacuation Plans/procedures.
- Location and use, as appropriate, of emergency and fire protection equipment.
- Ergonomics training.
- Defensive driving.
- First Aid / CPR (Location of medical facilities and procedures for obtaining treatment).
- Bloodborne Pathogens Program (for employees who have a reasonably anticipated exposure to blood).
- Proper lifting techniques.
- Requirements and procedures for reporting accidents, occupational injuries and illnesses.
- Procedures for reporting unsafe equipment, conditions or procedures.
- Requirements of the Army Traffic Safety Training Program (ATSTP), including mandatory use of seat belts and helmets, speed limits, local traffic hazards, personal risk management and cell phone prohibition while operating a GMV or PMV on post. If applicable, discuss motorcycle safety training requirements before riding a motorcycle.
- Risk management training.
- Fetal Protection Program awareness training (for women of child bearing age).
- Personal Protective Equipment. (Must address 5 items: **When** PPE is necessary, **What** PPE is necessary, **How** to properly don, doff, adjust, and wear PPE, The **limitations** of the PPE, and The proper **care**, maintenance, useful life and disposal of the PPE)
- Confined Space Program Training (for employees who enter into confined spaces-- confined space awareness training is sufficient for everyone else).
- Lockout/Tagout Program Training (for employees that service machines).
- Machine Guarding (for employees that operate/service machines).
- Fall Protection Program training (for employees exposed to falls greater than four (4) feet.
- Ladder Safety Training.
- Arc Flash Protection (for employees exposed to energized electrical systems/circuits/components greater than 50 volts).
- Crane/Hoist safety.
- Explosives/ammo/UXO safety.

JOB HAZARD ANALYSIS for: (Name of Work center)

Employees Signature/Date = I have read and understand the Job Hazardous Analysis (JHA) for my workplace.

Employee Name (PRINT) Last, First MI	**Signature**	**Job Title**	**Date**

This Job Hazard Analysis (JHA) serves as the assessment required by OSHA 29 CFR 1910 and DoDI 6055.01. The affected employee(s) covered by this analysis has/have been instructed in the tasks to be performed, the hazards to be encountered, the potential adverse effects of exposure to such hazards, and the controls to be used. He/she has received training specifically related to safe work practices, administrative/engineering controls, and personal protective equipment (PPE). He/she has demonstrated an understanding of the PPE to be used in the performance of his / her duties. He/she understands when PPE is necessary, what PPE is necessary, how to properly don, doff, adjust and wear PPE, the limitations of the PPE and the proper care, maintenance, useful life and disposal of the PPE. Documentation of employee fire, safety and health training, to include dates of such training are maintained:
(where) _____.

Supervisor's Signature: _____ Date: _____

JHA Annual Supervisory Review

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____

Name: _____ Date: _____