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Langley Research Center

LPR 8717.1

Effective Date: August 3, 2007

Expiration Date: August 3, 2012

JOB HAZARD ANALYSIS PROGRAM

National Aeronautics and Space Administration

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Office of Primary Responsibility: Safety and Mission Assurance Office

PREFACE

P.1 PURPOSE

This Langley Procedural Requirement (LPR) establishes the minimum procedural requirements for employees to perform a Job Hazard Analysis (JHA) at NASA Langley Research Center (LaRC). It provides a safety assessment technique that identifies uncontrolled hazards and steps to eliminate or reduce them to an acceptable risk level. This JHA program fulfills the procedural requirement for performing workplace analysis as required by the Occupational Safety and Health Administration (OSHA).

P.2 APPLICABILITY

This LPR applies to all NASA LaRC civil service and contractor employees. Contractor employees shall either utilize this LPR or develop an alternate procedure that meets the intent of this LPR. All alternate procedures shall be reviewed and approved by the Safety and Facility Assurance Branch (SFAB), Safety and Mission Assurance Office (SMAO). Any deviations or waivers to the procedural requirements of this LPR shall be approved by SFAB.

P.3 AUTHORITY

NPR 8715.3, “NASA General Safety Program Requirements”

P.4 APPLICABLE DOCUMENTS

a. OSHA Handbook 3071, “Job Hazard Analysis,” (1998/2002 Versions)
b. Swartz, George. “Job Hazard Analysis: A Guide to Identifying Risk in the Workplace,”
c. KDP-KSC-P-3221, “Job Hazard Analysis (JHA) Selection”
d. NASA Langley Form 338, "Job Hazard Analysis Master Listing of Jobs."
e. NASA Langley Form 275, "Job Hazard Analysis (JHA) Worksheet."
f. NASA Langley Form 164, "Report of Safety/Health Concern/Close Call."
g. LMS-CP-4309, “Identification, Recording, and Evaluation of Required/Mandatory Training."

P.5 MEASUREMENT/VERIFICATION

Through the reduction of injuries, illnesses, equipment/property damage, and close calls occurring on Center.

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P.6 CANCELLATION

None

Original signed on file

Lesa B. Roe
Center Director

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1. INTRODUCTION

1.1 BENEFITS OF A JOB HAZARD ANALYSIS

a. The Job Hazard Analysis (JHA) program shall actively involve employees at LaRC in the identification of unsafe conditions during a "job" performed in their workplace. Also, employees shall participate in the resolution of identified unsafe conditions through their recommendations for design, engineering controls, safety devices, warning devices, training, or personal protective equipment, while performing the "job." JHA's shall be used by employees as a useful training tool for mentoring new employees and refreshing needed skills in demanding multi-facility workplaces.

1.2 VALUE OF A JOB HAZARD ANALYSIS

a. Supervisors shall use the identified unsafe conditions on a JHA to eliminate and prevent hazards in their workplaces, thereby reducing the number of work-related injuries and illnesses; providing safer, more effective work methods; and increasing worker productivity. The JHA shall also be used as a tool for training new employees in the steps required to safely perform their assigned jobs.

1.3 EXCLUSIONS

a. "Jobs" performed under the following programs shall not require a JHA:

(1) Any facility procedure currently in Configuration Management On-line (CMOL) program.
(2) Laboratory Operating Procedures (LOP's) currently in CMOL.
(3) Any task/process currently conducted under a Safety Permit (e.g., Potentially Hazardous Materials Permit (PHM), Non-Ionizing Radiation (LASER) Permit, Pyrotechnic Permit)

b. Branch Heads/Line Supervisors shall have the authority to instruct employees to create and utilize JHA's for "jobs" in accordance with the procedural requirements of this LPR.

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2. RESPONSIBILITIES

2.1 ORGANIZATIONAL UNIT MANAGER

The Organizational Unit Manager (OUM), or assigned designee, shall be responsible for:

a. Implementing and enforcing the JHA program within their organization.
b. Annually reviewing their organization's JHA program.
c. Determining appropriate corrective actions for JHA recommendations when asked by the Branch Head/Line Supervisor.

2.2 BRANCH HEADS/LINE SUPERVISORS

The Branch Head/Line Supervisor shall be responsible for:

a. Establishing a Master Job List of JHA's, using NASA Langley Form 338, "Job Hazard Analysis Master Listing of Jobs," which schedules and prioritizes JHA's to be conducted.
b. Assigning an employee to create/review each JHA listed on NASA Langley Form 338, using NASA Langley Form 275, "Job Hazard Analysis (JHA) Worksheet."
c. Enforcing employees to perform JHA's in which they've been assigned.
d. Assisting employees in performing JHA's, when needed.
e. Reviewing/approving the completed JHA's for thoroughness.
f. Prioritizing, tracking, and implementing accepted recommendations resulting from completed JHA's. Implementation of accepted recommendations involving engineering modifications shall be managed with identified interim action until modifications are complete. When recommendations are not feasible, the OUM shall determine the appropriate corrective action.
g. Scheduling the review of all JHA's, located on NASA Langley Form 338 annually to determine if there have been changes to the job and ensure hazards associated with any changes have been assessed and the appropriate steps added to the JHA.

2.3 FACILITY SAFETY HEAD

The Facility Safety Head (FSH) shall be responsible for:

a. Reviewing/approving the completed JHA's for thoroughness.
b. Maintaining the master NASA Langley Form 338 and NASA Langley Form 275 copies of all completed JHA's pertaining to their assigned facilities.
c. Ensuring all approved JHA's are available to organizational employees via hard or digital copy.
d. Ensuring the review of all JHA's within their facility are reviewed annually.

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2.4 EMPLOYEE

The employee shall be responsible for:

a. Understanding the requirements of this LPR before performing a JHA.
b. Informing Branch Heads/Line Supervisors of “job’s” in which a JHA has not been created and they feel an uncontrolled hazard is present.
c. Identifying uncontrolled hazards in a “job,” which has a JHA and requesting a review of the JHA when circumstances pertaining to the "job" change.
d. Developing a JHA by defining the sequence of steps or activities, identifying the potential hazards present in each step or activity, and recommending safe practices (e.g., engineering controls, actions, procedures, personal protective equipment (PPE)) to eliminate or reduce each hazard.
e. Documenting the JHA for the selected process or activity by completing each of the three sections on NASA Langley Form 275. (NOTE: Additional subject matter expert resources, as needed, may be utilized to assist in the job evaluation, including, but not limited to Facility Safety Heads/Facility Coordinators, the Safety and Facility Assurance Branch, cognizant system engineers, Standard Practice Engineers, etc.)
f. Recommending any changes to their Branch Head/Line Supervisor required to facilitate personnel safety; including, but not limited to, specific procedures, policies, equipment, training, etc.
g. Providing the Branch Head/Line Supervisor with a completed JHA.

2.5 SAFETY AND FACILITY ASSURANCE BRANCH (SFAB)

SFAB employees shall be responsible for

a. Assisting in the development/completion of a NASA Langley Form 275, as requested.
b. Supporting organizations in implementing the LaRC JHA program.

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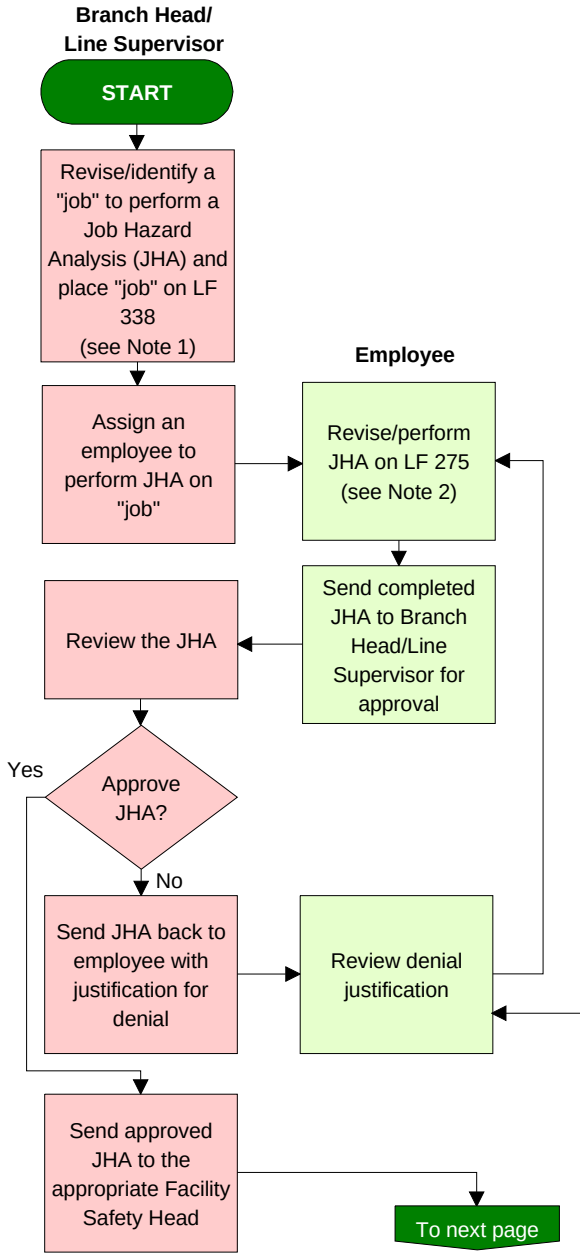
3. CREATING, WRITING, REVIEWING, AND MAINTAINING JOB HAZARD ANALYSIS IN THE WORKPLACE

3.1 GENERAL

Once the need for a JHA is identified on the organizations NASA Langley Form 338, the JHA shall be prepared using NASA Langley Form 275.

3.2 PROCESS



General Information

The following records are generated by this procedural requirement and should be maintained in accordance with LMS-CP-2707:
LF 338, "Job Hazard Analysis Master Listing for Jobs"
LF 275, "Job Hazard Analysis (JHA) Worksheet"

Note 1
Identify a job in accordance with Chapter 5, Establishing Precedence for Creating JHA's.

If an illness or injury occurs on a specific job, the JHA shall be reviewed immediately to determine whether changes are required in the JHA. In addition, if a "close call" or "near miss" has resulted from an employee's failure to follow job procedures, this shall be discussed with all employees performing the job.

Note 2
Request assistance from supervisor, if needed.

Complete all required information to ensure all potential hazards associated with job are identified and adequate preventive control methods are described appropriately. See the following chapters on completing LF 275:
Chapter 6, "Identifying Sequences of Steps or Activities"
Chapter 7, "Identifying Workplace Hazards"
Chapter 8, "Identifying Hazard Controlling Techniques"

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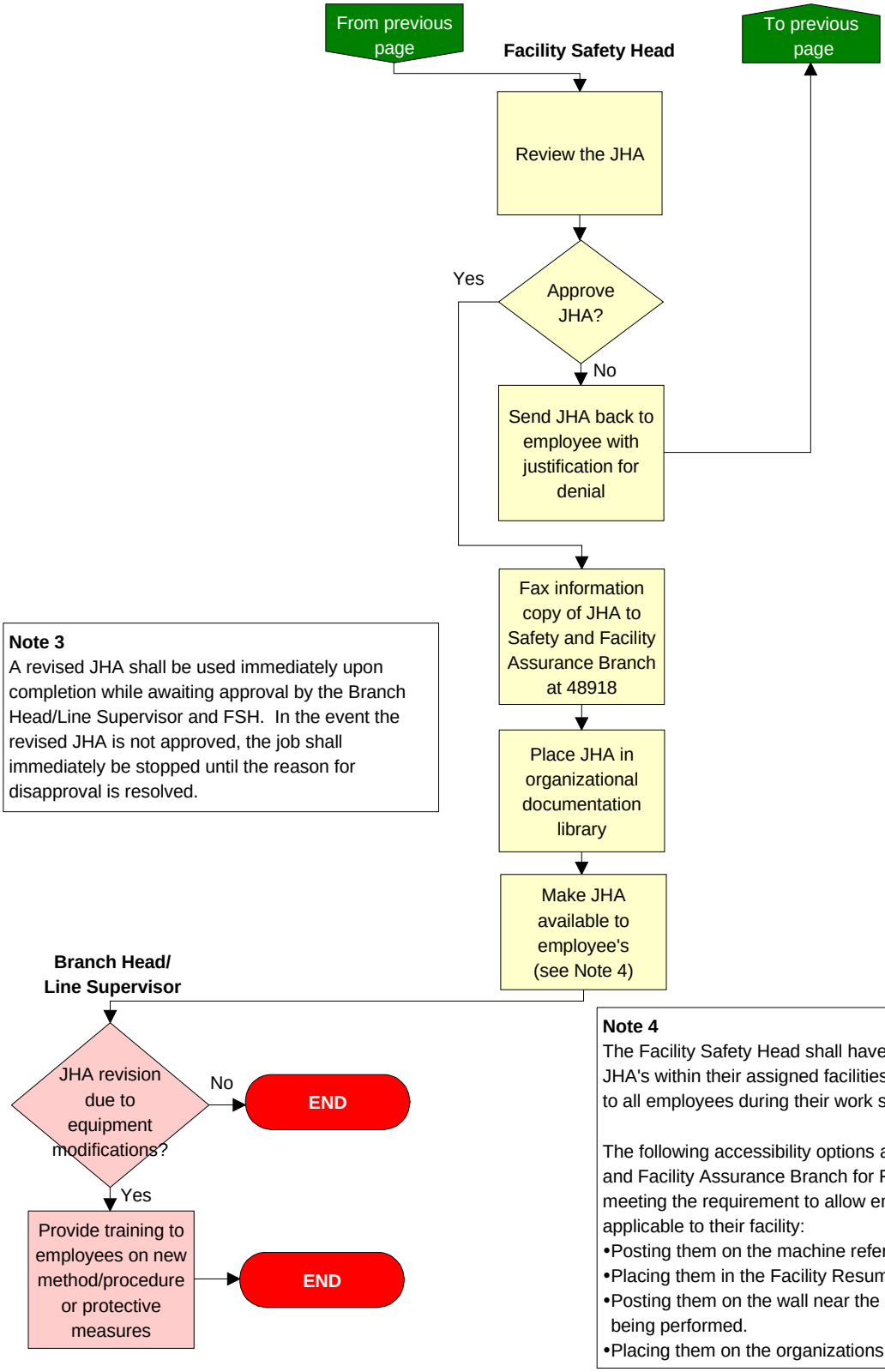

Note 3
A revised JHA shall be used immediately upon completion while awaiting approval by the Branch Head/Line Supervisor and FSH. In the event the revised JHA is not approved, the job shall immediately be stopped until the reason for disapproval is resolved.

Note 4
The Facility Safety Head shall have additional copies of the JHA's within their assigned facilities and make them accessible to all employees during their work shift.

The following accessibility options are recommended by Safety and Facility Assurance Branch for Facility Safety Heads in meeting the requirement to allow employee's access to JHA's applicable to their facility:

- Posting them on the machine referenced by the JHA
- Placing them in the Facility Resume
- Posting them on the wall near the locations where the "job" is being performed.
- Placing them on the organizations server.

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4. UTILIZATION OF A JOB HAZARD ANALYSIS IN THE WORKPLACE

4.1 GENERAL

All LaRC employees shall utilize JHA's in the workplace to proactively abate hazards encountered in their work environments while performing a "job." If a documented JHA does not exist, the "job" shall be placed on the organizations NASA Langley Form 338 and scheduled for creation. The only exception for not placing the "job" on the NASA Langley Form 338 is if the "job" is considered time-critical (refer to Section 4.3 of this LPR for the procedural requirements pertaining to time-critical JHA's). Procedural requirements for establishing precedence for jobs to be analyzed are discussed in Chapter 5 of this LPR.

4.2 REVIEWING ESTABLISHED JHA'S

Employees shall review approved/renewed JHA's a minimum of monthly, when they perform a "job" covered by a JHA. This review shall be performed prior to beginning the "job" and the employee shall acknowledge their review by placing their initials next to the first step in the JHA, next to the second step, and continue to initial next to each job step until they have initialed all of the job steps for that particular JHA. After an employee has initialed next to all the job steps, the employee shall give the initialed copy to the FSH for review and verification.

4.3 TIME - CRITICAL JHA

During operations, a "job" may need to be performed, which is not covered under a JHA. An on-the-run mental or oral review of the situation, using the JHA procedural requirement, shall be performed in lieu of recording the steps on paper.

Any "job," which utilizes the time-critical JHA methodology, shall not be performed more than once without being flagged for requiring a JHA. "Jobs" performed more than once shall not be considered time-critical and shall utilize a documented JHA using NASA Langley Form 275. If a documented JHA does not exist, the "job" shall be placed on the organizations NASA Langley Form 338 and scheduled for creation.

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5. ESTABLISHING PRECEDENCE FOR CREATING JHA'S

5.1 GENERAL

A JHA shall be performed for all "jobs" in the workplace, whether the job task is "special" (non-routine) or routine. Even one-step jobs, such as those in which only a button is pressed, shall be analyzed by evaluating surrounding work conditions. In order to ensure the "jobs" with the most potential hazards are addressed first, precedence for creating JHA's shall be established by each organization.

5.2 JHA DEVELOPMENT PRIORITIZATION

JHA's shall first be created for any "job" within an organization that has resulted in an injury or illness, damage to NASA property or equipment, or a close call/or near miss reported on a NASA Langley Form 164, "Report of Safety/Health Concern/Close Call." Branch Heads/Line Supervisors shall review any injuries or illnesses, damage to NASA property or equipment, or close calls/near misses reported via a NASA Langley Form 164 from the previous 4 years (from the effective date of this LPR) and create JHA's for those "jobs" related to these incidents.

5.3 REQUIREMENTS FOR PRECEDENCE OF JOBS TO BE ANALYZED

The following shall be followed by Branch Heads/Lines Supervisors to determine the precedence of jobs to be analyzed within their organization:

a. Jobs with a history of injuries or illnesses.
b. Jobs with a history of "close calls."
c. Jobs where an employee/supervisor requests a JHA be performed.
d. Jobs that have repetitive tasks with potential for an injury or illness.
e. Jobs that require the handling of hazardous material.
f. Jobs that take place in hazardous physical environments (e.g., work at heights, loud noise, extreme temperatures, confined spaces).
g. Jobs that require the use of personal protective equipment engineering controls, etc.
h. Jobs that involve a **NEW** process/procedure/machine/chemical.

The procedural requirement for performing a JHA on a particular "job" is set forth in Chapter 4 of this LPR

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6. IDENTIFYING SEQUENCES OF STEPS OR ACTIVITIES

6.1 GENERAL

Nearly every job can be broken down into job tasks or steps. In the first part of the JHA, list each step of the job in order of occurrence as you perform the job.

6.2 NUMBER OF WORDS

Enough information shall be provided to describe each job action, but do not make the breakdown too detailed. Three or four words are normally enough to describe each step in the task. Begin each step with action words, such as “remove”, “carry”, “assemble”, “open”, etc. (a list of action verbs may be found in Appendix D of this LPR).

6.3 BREAKING DOWN THE TASK

The task shall be broken down into its basic steps, for example, what is done first, what is done next, and so on (Figure 1). This shall be done by:

a. Observing the task performed by another employee.
b. Discussing it with other employees.
c. Using your experience and knowledge of the task.
d. A combination of all three.

6.4 NUMBER OF JOB STEPS

JHA’s shall contain 10 job steps or less. Identifying more than 10 job steps may hinder the employee’s ability to understand the procedures identified in the JHA. Jobs in which 10 or more steps are warranted shall be split up to allow multiple JHA’s to be established. This will allow the employee to review each JHA before performing the job and help the employee remember the hazards associated with each step. Remember, the objective is to keep it brief to increase job hazard awareness, not impact production.

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Figure 1. A worker performing the basic job steps for grinding iron castings.

Grinding Castings: Job Steps

1. Reach into metal box to right of machine, grasp casting and carry to wheel.

2. Push casting against wheel to grind off burr.

3. Place finished casting in box to left of machine.

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7. IDENTIFYING WORKPLACE HAZARDS

7.1 GENERAL

After each job step has been recorded on NASA Langley Form 275, the preparer shall examine each job step to determine the hazards associated with it and the potential for resulting in an incident (Figure 2).

7.2 DETERMINATION OF HAZARD IDENTIFICATION

a. Preparers shall ensure all tasks are thoroughly reviewed to identify their hazards. The following questions shall be asked, as minimum, to ensure all appropriate hazards are identified.

(1) Is personal protective clothing and equipment, including safety harnesses required?
(2) Are work positions, machinery, pits or holes, and hazardous operations adequately guarded?
(3) Are lockout/tagout procedures required for machinery deactivation during maintenance procedures?
(4) Will the wearing of clothing or jewelry present a hazard of getting caught in the machinery or otherwise cause a hazard?
(5) Are there fixed objects that may cause injury, such as sharp machine edges?
(6) Is the flow of work improperly organized (e.g., Are rapid movements required that may cause a hazard)?
(7) Can an employee get caught in or between machine parts?
(8) Can an employee be injured by reaching over moving machinery parts or materials?
(9) At any time will an employee be in an off-balance position?
(10) Will the employee be positioned to the machine in a manner that is potentially dangerous?
(11) Will the employee be required to make movements that could lead to or cause hand or foot injuries, or strain from lifting, the hazards of repetitive motions?
(12) Can an employee be struck by an object or lean against or strike a machine part or object?
(13) Can an employee fall from one level to another?
(14) Can an employee be injured from lifting or pulling objects, or from carrying heavy objects?
(15) Will environmental hazards, such as, dust, chemicals, radiation, welding rays, heat, or excessive noise, result from the performance of the job?

The preparer shall ask questions, as each job requires, until all hazards have been identified.

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Figure 2. Existing or potential hazards for grinding iron castings.

Grinding Castings: Hazards

1. Hand Struck Against (SA) metal box or casting while removing from bin on the right.

2. Hand Struck Against (SA) wheel. Struck By (SB) flying sparks.

3. Hand Struck Against (SA) metal box or casting while placing in bin on the left.

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8. IDENTIFYING HAZARD CONTROLLING TECHNIQUES

8.1 GENERAL

After each hazard or potential hazard has been identified, the hazards shall be controlled (Figure 3). This shall be accomplished by the utilization of several hazard-controlling methods. General statements, such as “Be Careful,” shall not be acceptable. Be as specific as possible in your recommendations for hazard control.

8.2 HAZARD CONTROLLING METHODS

8.2.1 Engineering

Engineering controls involve changing the physical condition, materials, or procedural requirements that create the hazard. Engineering control measures shall be considered the most effective means to eliminate the hazard or reduce its severity. While other hazard measures may provide protection from hazards, they do not eliminate or control the source of the hazard.

8.2.2 Safety

Using PPE to control hazards shall be considered using safety to abate the hazards. PPE does not control the hazard, but it protects/reduces the hazards effect on the employee. Examples of PPE are hard hats, safety glasses, ear protection, gloves, respirators, face shields, safety shoes, etc.

8.2.3 Warning

Visual and audible means to alert personnel to hazards shall be acceptable, but shall not be considered barriers. Engineering and safety hazard controlling methods shall be considered barriers from hazards. Warning devices are effective only when personnel are aware of them in sufficient time to react; and do, in fact, react.

8.2.4 Administrative

Administrative Controls involve re-arranging work schedules, improving housekeeping, controlling access, or using procedures (Lockout/Tagout) to control the hazards.

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Figure 3. Shows the recommendations for new steps and protective measures when grinding iron castings.

Grinding Castings: Safe Procedures or Personal Protection Equipment

1. Wear gloves and steel-toed shoes.
2. Provide larger guards over the wheel. Provide safety goggles.
3. Provide for removal of completed stock.

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APPENDIX A: DEFINITIONS

Analysis – Separation of steps relating to a "job" to identify unsafe conditions.

Cause - The stimulus or triggering mechanism/act, which precipitates an undesired event (accident).

Configuration Management On Line (CMOL) - A web-based application that enables users to access LaRC facility Configuration Controlled Documents electronically via their desktop computer.

Controls - Actions taken to eliminate hazards or reduce their risk.

Effect - The consequence of an undesired event/accident in terms of equipment damage and/or personnel injury, illness, or death.

Hazard - A condition, which has the potential to result in damage to equipment and/or personnel injury, illness, or death.

Job - A sequence of steps that together accomplish a work goal for the mission of NASA.

Potential Hazards - Any hazard, if left uncontrolled, could result in an unplanned event or series of events resulting in harm to public safety or health, injury, illness, or death to employees, or damage to or loss of assets.

Risk - A possible loss expressed in terms of severity and probability.

Risk Assessment - The process of detecting hazards and assessing associated risks. Step 1 and Step 2 of a JHA constitute a risk assessment.

Severity - Expected consequence of an event in terms of degree of injury, illness, property damage, or other mission-impairing factor.

Standard Operating Procedures (SOP's) - Detailed, written, step-by-step instructions to be routinely followed in operating a facility. SOP's contain all of the information considered pertinent to safe and efficient operation of the facility. SOP's are the source documents for Operational Checklists and are the basis, in part, for the facility Hazard Control Analysis. SOP's may also be used for training operator personnel. SOP's are under the control of the Configuration Management Program.

Undesired Event - An event (or series of events), which unleashes the potential inherent cause of a hazard and, either directly or indirectly, results in damage and/or personnel injury, illness, or death.

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APPENDIX B: INJURY SOURCE DEFINITIONS AND ACRONYMS

The following definitions and their identified acronyms shall be used in identifying workplace hazards.

Struck By (SB)

A Struck By injury occurs when the employee is stationary and an object in motion contacts the employee. Examples of Struck By injuries are an employee being hit in the mouth by the inner door of a restroom as another individual is exiting; a hammer driving an employee's finger instead of a nail; or sparks from a welding operation contacts an employee's forearm causing burns.

Struck Against (SA)

A Struck Against injury occurs when the object is stationary or moving and the employee in motion contacts the object. Examples of Struck Against injuries are an employee walking into an open filing cabinet door; an employee walking into forklift forks at knee height, sustaining contusions and/or lacerations; or an employee applying leverage to loosen a bolt, slipping and striking a steel surface.

Caught Between (CB)

A Caught Between injury occurs when the employee becomes stuck between two different objects, commonly referred to as a “pinch point”. Examples of Caught Between injuries are an employee's foot being caught between a dock and a trailer during warehouse unloading operations; or an employee setting a heavy box on the ground, lodging their hand between the box and the ground.

Contact With (CW)

A Contact With injury occurs when the employee is stationary or in motion and the hazard (chemical, sharp edge, etc.) contacts the employee. Examples of Contact With injuries are an employee placing their hand on a hot surface; an employee walking by and contacting a bare wire, suffering a severe shock; or an employee drops a box of corrosive chemicals and begins cleaning it up with paper towels, in lieu of the appropriate protective gloves

Contacted By (CBy)

A Contact By injury occurs when the employee is stationary or in motion and the hazard forces the employee to contact the hazard. Examples of Contacted By injuries are an employee opens a valve and is sprayed in the face by a chemical; or an employee is cleaning a tool and the tool slips out, falls into the cleaning solution, and splashes the employee in the face.

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Caught On (CO)

A Caught On injury occurs when the employee becomes part of a stationary or moving object. Examples of Caught On injuries are an employee accessing the ceiling of a building and during ascent the employee's ring becomes hung on an object, resulting in severe lacerations or severance of the finger; or an employee dragging an extension cord has the cord suddenly stopped at a “pinch point” and is swept off their feet.

Caught In (CI)

A Caught In injury occurs when the employee, or part of the employee, becomes enclosed by an object. Examples of Caught In injuries are an employee entering a confined space becomes lodged in the narrow access opening; or a supervisor notices there is no possible way to open a storage room from the inside and has the problem corrected to prevent any Caught In incidents.

Fall, Same Level (FS)

A Fall, Same Level injury occurs when the employee is forced by gravity to the same level in which they were either standing, walking, or running. Examples of Fall, Same Level injuries are an employee slips on a wet floor while entering the restroom; or an employee trips over an unsecured extension cord placed across a walking path.

Fall, To Below (FB)

A Fall, To Below injury occurs when the employee is forced by gravity to a lower level from which they were either standing, walking, or running. Examples of Fall, To Below injuries are an employee overextending on a ladder and falling; or an employee being distracted by a fellow employee inadvertently walks off the edge of a warehouse loading dock.

Overexertion (O)

An Overexertion injury occurs when the employee or a part of the employee body fails to properly function due to stress or strain. Examples of Overexertion injuries are an employee decides to lift an object over 50 pounds and injures their back or an employee while lifting several heavy objects begins to have cramps in their legs because of a low potassium level.

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Exposure (E)

An Exposure injury occurs when the employee, or a part of the employee, becomes susceptible to gases, vapors, fumes, dust, mists, temperature extremes, oxygen deficiencies, and noise. Exposure injuries can be of an acute or chronic nature. Examples of Exposure injuries are an employee working in extremely hot weather fails to hydrate and becomes disoriented and faints; or an employee ignores the low-level oxygen alarm in a room and walks into the room and passes out due to the low-level of oxygen.

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APPENDIX C: TYPICAL JOBS IN WHICH WORKPLACE HAZARDS WOULD REQUIRE A JHA

The following are examples of jobs in which a JHA may eliminate workplace hazards.

Shop Operations
Operating a Power Band Saw
Operating a Bench Grinder
Using the 5-ton Bridge Crane
Using a Circular Saw to Cut Metal
Handling Compressed Gases
Using the 10 inch monarch EE Lathe to Cut Metal Components
Using a Drill Press on Aluminum Components
Drilling & Milling
Hand Soldering (Replacing Components for a PC Board))
Electrical Wiring - High Voltage
Setting up an Extension Ladder
Using a Forklift to Move Material
Replacing Light Bulbs with the 65-Ft JLG Boom
Using Portable Electrical Power Tool
Cutting Wood on a Table Saw
Bending/Forming Metal with the Power Press Brake
Applying Conformal Coating to PC Boards

Miscellaneous Operations
Filling Vehicle Tank from Underground Storage Tank

Laboratory Operations
Handling Laboratory Animals
Using Laboratory Scales
Moving Large Cryogenic Liquid Dewar from Loading Dock to Lab
Operation of Spectra-Physics Model PIV 400-30 Nd Laser
Handling Compressed Gases
Transferring of Chemicals Between Containers
Dry Waste Packing a 55 Gallon Drum
Using the Steam Sterilizer

Office Activities
Filing Activities
Moving/Storing Office Supplies
Mail Distribution
Operating the Paper Shredder
Operating the Paper Cutter
Removing Misfed Paper from Copier
Cleaning Office Furniture and Equipment
Connecting Electrical Equipment in the Office
Using a Computer

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APPENDIX D: JHA ACTION VERBS

Accounts
Acquires
Adapts
Adjusts
Administers
Adopts
Advises
Advocates
Allocates
Allots
Alters
Amuses
Analyzes
Answers
Applies
Appoints
Appraises
Approves
Arbitrates
Arranges
Assembles
Assesses
Assigns
Audits
Authorizes
Awards
Balances
Bargains
Batches
Budgets
Calculates
Calibrates
Carries
Categorizes
Certifies
Checks
Circulates
Classifies
Cleans
Climbs
Coaches
Codes
Collaborates
Collates
Collects
Compares
Compiles
Composes
Computes
Condenses
Confers
Confirms
Consolidates
Constructs
Consults
Controls
Converts
Conveys
Coordinates
Copies
Corrects
Correlates
Corresponds
Counsels
Counts
Creates
Debates
Decides
Defends
Defines
Delegates
Deliberates
Delivers
Demonstrates
Describes
Designates
Designs
Destroys
Detects
Determines
Develops
Devises
Diagnoses
Digs
Directs
Disburses
Disciplines
Discovers
Discusses
Dismantles
Dispatches
Dispenses
Displays
Disseminates
Distributes
Drafts
Drives
Dumps
Duplicates
Edits
Elaborates
Elects
Eliminates
Employs
Encourages
Endorses
Enlists
Enters
Entertains
Escorts
Estimates
Evaluates
Examines
Exchanges
Exercises
Exhibits
Experiments
Explains
Extracts
Fabricates
Fastens
Feeds
Files
Forecasts
Formulates
Garners
Gathers
Gauges
Generates
Governs
Grades
Guards
Guides
Hauls
Hires
Hypothesizes
Identifies
Illustrates
Implements
Imports
Improves
Indexes
Indicts
Informs
Innovates
Inspects
Installs
Instructs
Interprets
Interviews
Inventories
Invents
Investigates
Issues
Itemizes
Joins
Judges
Justifies
Leads
Lifts
Loads
Locates
Lubricates
Manages
Manipulates
Manufactures
Maps
Matches
Measures
Mediates
Mends
Mixes
Modifies
Monitors
Motivates
Moves
Negotiates
Notifies
Nullifies
Observes
Obtains
Opens
Operates
Organizes
Originates
Outlines
Overhauls
Oversees
Packages
Permits
Persuades
Picks up
Plans
Posts
Predicts
Prescribes
Presents
Preserves
Prevents
Procures
Produces
Programs
Promotes
Proofreads
Proposes
Pulls
Purchases
Pushes
Quantifies
Questions
Ranks
Rates
Reaps
Rebuilds
Recommends
Reconciles
Records
Reduces
Refers
Refines
Registers
Regulates
Reinforces
Rejects
Releases
Remits
Repairs
Replaces
Reports
Represents
Rescinds
Rescues
Researches
Resolves
Retrieves
Reviews
Revises
Rewards
Salvages
Scans
Schedules
Scores
Screens
Seals
Searches
Selects
Sells
Sends
Serves
Services
Smells
Solicits
Solves
Sorts
Stacks
Stores
Studies
Submits
Summarizes
Supplies
Surveys
Synthesizes
Systematizes
Tabulates
Teaches
Tends
Testifies
Tests
Totals
Traces
Trades
Trains
Transacts
Transcribes
Transfers
Translates
Transmits
Treats
Turns
Tutors
Types
Updates
Ushers
Washes
Waxes
Weighs
Writes

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