<table>
<thead>
<tr>
<th>JHA No.</th>
<th>FBP-JHA-12-0435</th>
<th>Revision No.</th>
<th>4</th>
<th>General or Job-Specific</th>
<th>General</th>
<th>JHA Issue Date</th>
<th>7/24/2013</th>
<th>Expiration Date</th>
<th>NA</th>
</tr>
</thead>
</table>

**Description of Work**

General Site Hazards JHA

[NOTE: This job hazard analysis encompasses a wide range of work activities common to most all FBP locations across the PORTS site. Because of the general nature of the activities, it is not practical to list below the many items such as Material, Tools/Equipment, and Chemical(s) involved or required to address the given activities. When applicable, Personal Protective Equipment (PPE) requirements are presented in each separate section of this JHA in the 'Hazard Control(s)' column. Some entries in the 'Work Activity' column contain references to relevant sections of the FBP "Worker Safety and Health Program" (WSHP) as well as to portions of 10 CFR 851.]

**NOTE 1:** If a prescribed hazard control in this JHA is in conflict with that contained in a job-specific JHA, the job-specific JHA requirement(s) will supersede.

**NOTE 2:** For personnel performing work activities under a work control document, refer to the job-specific JHA (if applicable) for further requirements.

<table>
<thead>
<tr>
<th>Site Location</th>
<th>PORTS</th>
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<tbody>
<tr>
<td>Facility or Project</td>
<td>Site Wide</td>
</tr>
<tr>
<td>Applicable JHAs</td>
<td>None.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Tools\Equipment - see below</th>
<th>None listed</th>
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</thead>
<tbody>
<tr>
<td>Personal Protective Equipment (PPE) - see Hazard Controls below</td>
<td>None listed</td>
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<table>
<thead>
<tr>
<th>Material - see below</th>
<th>None listed</th>
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<tbody>
<tr>
<td>Chemical(s) - see Potential Hazards below</td>
<td>None listed</td>
</tr>
</tbody>
</table>

WORKING COPY

Initials _______________

Date _______________
**PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS:** When entering worksites without additional postings, the following PPE is required when the condition stated exists:

- Protective eyewear, with rigid side shields, meeting ANSI Z87.1 standard (latest revision) when exposed to potential eye hazards
- Protective footwear (reinforced toe boots/shoes) meeting ASTM F2412-11 and F2413-11 standard requirements (latest revision) when exposed to potential foot hazards
- Protective headgear (hard hat), Type I or II Class G/E, meeting ANSI Z89.1 standard (latest revision) when overhead hazard exists
- High-visibility safety vest or outermost layer of clothing (reflective trim for night work) when acting as an assigned spotter or signal person, or when within 30-feet of moving equipment (excluding operator and passengers)
- Hearing protection (ear muffs or ear plugs, as approved by the company) when exposed to noise greater than 85 decibels (8-hr TWA)
- Cut-resistant (leather, Kevlar, or equal) work gloves when exposed to pinch point and/or laceration hazards and when handling rough-/sharp-edged material.

**PERMIT(s) REQUIRED** (enter permit number upon issue): Refer to project-specific procedure(s), and/or job-specific AHA/JHA(s), as required.

**TRAINING REQUIREMENTS:** Refer to Training Position Descriptions (TPDs) for the position titles assigned to the project as well as to the procedure(s), and/or job-specific AHA/JHA(s), as required.

**MEDICAL SURVEILLANCE/MONITORING REQUIREMENTS:** Annual HAZWOPER physical; job-specific (e.g., asbestos), as required.

**SITE ACCESS REQUIREMENTS:**
- Briefing to all project-required documents (i.e., AHA/JHA, RWP, etc.)
- Personnel/visitor(s) without training and briefing shall be required to be briefed to the hazards of the activities for that specific day. A new daily briefing is required when a visitor returns on subsequent days or when a new activity begins that will expose new hazards to the visitor.
- All visitors will check with supervision prior to entering the work site.

**SEVERE WEATHER NOTIFICATIONS:**
- Severe weather watches, warnings, and other information will be broadcasted over the site-wide public address (PA) system and site radios tuned to prescribed channels. At least one radio with emergency channel (1 - 4) shall be located at each work site where the site-wide PA system cannot be heard or when the site-wide PA system is “out-of-service.”
- For outdoor work, review the weather forecast prior to the start of work. If weather interferes with performing work safely, exercise ‘stop work’ or ‘work pause” authority, and notify supervision immediately.
- Prior to the start of work, discuss route to emergency evacuation building(s) for weather relief shelter (i.e., tornadoes). If emergency evacuation building is not available, discuss other alternatives.
- The PSS monitors lightning conditions for the site, and will direct PA and radio announcements be made at condition levels which either:
  1. Prepare personnel for possible protective actions should weather conditions deteriorate further (i.e., Lightning Watch), or
  2. Direct that protective actions be taken immediately (Lightning Stand-down), in which case all outdoor activities shall stop, equipment/work area placed in a safe configuration, and personnel shall seek shelter in an approved location (e.g., permanent grounded structure, car or truck with windows in a closed position, etc.). Personnel shall remain sheltered for a minimum of 30-minutes after the last visible lightning has been detected and/or the “all-clear” announcement has been made. If no PA or radio announcement is heard, personnel shall report all visible lightning observations to the FBP PSS.

**POTENTIAL ENVIRONMENTAL CONCERNS/IMPACTS:** Report all breaches/releases/spills immediately. Such releases shall be cleaned up by trained, qualified individuals only.
### JHA Revision Log (As Applicable)

<table>
<thead>
<tr>
<th>Rev. Level</th>
<th>Date</th>
<th>Revision Description</th>
<th>Page(s)</th>
</tr>
</thead>
</table>
| 1          | 11/20/2012 | Revised PPE requirements section of "Special Instructions," specifically eyewear, footwear, and high-visibility safety vest bullet to add "...excluding equipment/vehicle operator and passengers"

  - Modified Section 7. to add "Heavy Equipment/Machinery" and language.
  - Added new Section 10. "Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12) - Process Building Vehicle Use."
  - Added new Section 40. "Housekeeping."
  - Added new Section 41. "Office/Administrative Activities."

  Total: 2, 6, 9, 32, 33                                                    |                  |
| 2          | 2/26/2013  | Modified 'Description of Work' with NOTE 2 to ensure reader understands the need to refer to the job-specific JHA supporting work activities covered by a work control document; updated and made minor corrections throughout; reduced content, especially Sections 3. Electrical Work, 13. Elevated Work/Fall Protection, 22. Manual Material Handling (removed bulging containers); modified paragraphs A., B., and C. of Section 10. "Equipment and Vehicle Activities - Process Building Vehicle Use;" added NOTE to Section 24. Work Involving the Use of Chemicals; removed "Work Involving Handling or Uncovering Compressor Blades."

  Total: All                                                                 |                  |
| 3          | 3/26/2013  | Updated standards citation for protective footwear; added Type II helmet; revised bullets 1, 4, and 8 in Hoisting and Rigging Activities (Section 12.); added controls for walking on graded/paved areas for Walking activity; added controls in Office/Admin section for changing watercooler bottle. |

  Total: 2, 11, 16, 30                                                                                                    |                  |
| 4          | 7/24/2013  | Reworked controls in A. of 2nd bullet for activity titled "Conducting work in a HOT environment..." and A. of 1st bullet for activity titled "Conducting work in a COLD environment..."                                    | 20 - 21          |

### Work Activity, Task, or Job Step/Section

1. Emergency Response and Notifications for:

   - Medical Illness or Injury
   - Explosion/Fire
   - Chemical Release/Spill
   - Nuclear Criticality Event
   - Radiological Incident
   - UF6 Release
   - Other Emergency Incident
   - Inadvertent/Unauthorized Access to Hazardous Situations and/or Areas (WSHP 2.5.17)

   - Delays Causing Loss of Life/Serious Illness/Injury
   - Catastrophic Harm to Environment
   - Damage to Infrastructure/Physical Plant

   - To summon emergency response assistance, notify the Plant Shift Superintendent (PSS) by one of the following means:

     - A. Call the Plant Shift Superintendent (PSS) or X-300 Control Facility by two-way radio on one of the site emergency reporting channels 1, 2, 3, or 4; or
     - B. Activate near-by manual fire alarm pull box; or
     - C. Dial 911 from any plant (land line) phone routed through the PORTS site switchboard; or
     - D. Dial 740.897.2444 from any cell phone. [DO NOT dial 911 on a cell phone as you will get Pike County Dispatch Center, and the message must then be transferred back to the PORTS site]; or
     - E. Where available (Process Bldgs), pick up the "red phone" (no dialing is required); or
     - F. Dial 911 when at an off-site location to summon the local emergency response group; or
     - G. Send a messenger to the Fire Station.

   - In the event of a breach of containment resulting in a spill, leak, or release, perform the following:

     - A. Warn others in the area.
     - B. If safety will not be compromised, then contain the spill or leak.
     - C. Evacuate, if required (upwind, when feasible).
<table>
<thead>
<tr>
<th>Work Activity, Task, or Job Step/Section</th>
<th>Potential Hazard(s)</th>
<th>Hazard Control(s)</th>
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<tbody>
<tr>
<td>D. Notify “PSS/FBP Emergency Response Team” (by the above-listed means).</td>
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<td>E. Isolate the area to keep out unauthorized personnel.</td>
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<tr>
<td>F. For suspected or known visible UF6 releases, practice the “SEE and FLEE” concept.</td>
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<tr>
<td>G. Report the emergency incident.</td>
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<tr>
<td>IF a radioactive contamination event impacting personnel or property is suspected THEN:</td>
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<td></td>
</tr>
<tr>
<td>A. Warn others in the area.</td>
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<tr>
<td>B. Place the area in a safe configuration, when possible.</td>
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<tr>
<td>C. Notify PSS by the above-listed means, as required.</td>
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<tr>
<td>D. Notify the FBP Radiological Group for additional assistance.</td>
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<tr>
<td>• Biological Exposure</td>
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<td>• Chemical Exposure</td>
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<td>• Noise Exposure</td>
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<tr>
<td>• Physical Harm</td>
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<tr>
<td>• Radiological Exposure</td>
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<tr>
<td>• A. Work area boundaries (physical or personnel) will be used to delineate work areas, where required.</td>
<td></td>
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<tr>
<td>B. Visitors and vendors are required to be briefed to all project requirements by supervision before entering work areas (i.e., JHA, required training, safety briefing, safe observation points, etc.), or shall be escorted at all times by a project person who has satisfied all project access requirements, and who is fully aware of all existing activities and/or hazards.</td>
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<tr>
<td>C. All visitors and vendors shall be approved to access the project site by the FBP Project Manager, Supervisor or Contractor Technical Representative, or their designee.</td>
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</table>

2. Stop Work Authority/Incident Reporting (WSHP 2.1.3)  
• Personnel injury, property damage, or damage to the environment due to performing unsafe acts or utilizing defective equipment  
• Unsafe, or perceived unsafe, condition or activity (i.e., working under a suspended load)  
• ALL FBP personnel, Subcontractors, and Vendors have the right, authority, and responsibility to stop any unsafe act at all times without the fear of reprisal by management or co-workers.  
• All injuries, property damage, or damage to the environment shall be reported to the FBP Project Management Team.  
• Applicable requirements found in procedures FBP-QP-PRO-00002 “Occurrence Notification and Reporting” and FBP-OS-PRO-00028 “Work Stoppage Due to Environmental, Safety, Health and Quality Concerns” shall be followed.  

3. Electrical Work (WSHP 2.5.1)  
[10 CFR 851.23(14), 10 CFR 851.24, and 10 CFR 851]  
• Electrical Burns/Shock/Exertion  
• Fire  
• Damage to Equipment/Electrical Infrastructure  
• See page 1, Description of Work, NOTE 2.  

All electrical work, including repairs, shall be made according to program requirements of FBP-OS-PRD-00001 “Electrical Safety,” safety work practices of which state that:  
A. Only qualified personnel utilizing appropriate electrical safety-related work practices and PPE shall perform work on electrical systems and equipment.
## Work Activity, Task, or Job Step/Section

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| 1. All new electrical installations shall be performed with components that meet NEC standards.  
2. Questions concerning installations shall be referred to the Authority Having Jurisdiction (AHJ).  
B. Circuit directories, such as inside lighting breaker panels, shall be updated to reflect changes brought about by work evolutions and/or to correct deficiencies discovered during this work.  
C. Load-rated switches, circuit breakers, or other devices specifically designed as disconnecting means for the opening, reversing, or closing of circuits under load conditions shall be used. Cable connectors, fuses, terminal lugs, and cable splice connections shall not be used for such purposes, except in an emergency.  
| 4. Lockout/Tagout of Hazardous Energy Sources (WSHP 2.5.2)  
[10 CFR 851.24 and 10 CFR 851]  
| Chemical Burn  
Crush  
Fall from Height  
Electrical Shock  
Electrocution  
Flying Object  
High Temperature Exposure (hot water, steam)  
Impingement (high pressure air/hydraulics)  
Pinch Point  
Puncture  
Sharp Edge  
Slip, Trip, Fall  
Strike Against/Struck By  
| • See page 1, Description of Work, NOTE 2.  
• Equipment or processes are locked out/tagged out and verified isolated from hazardous energy sources (hydraulics, water, electrical, steam, stored energy, and pneumatic) in accordance with FBP-OS-PRO-00068, "Instructions for Lockout/Tagout."  
NOTE: Do not attempt to change the status of any equipment tagged with FBP-OS-PRO-00068-F05, Danger “Do Not Operate” Tag (Lockout/Tagout) (also referred to as a “DDNO tag”), including overriding tags during testing or verification.  
• IF, during the performance of work, it is determined that LOTO (permit or non-permit) is necessary, THEN stop work, place machine or system in a safe configuration, and contact the Supervisor.  
| 5. Outdoor Work Activities (WSHP 2.5.3 and 2.5.11)  
[NOTE: some hazards may also apply to indoor activities]  
| Severe Weather:  
• Blizzard Conditions  
• Earthquake  
• Flooding  
• Hail  
• High Winds  
• Ice Storm  
• Lightning  
• Snow Emergency  
• Thunderstorm  
• Tornado  
| • In addition to the following, reference procedure FBP-EM-PRO-00026, "Severe Weather Response" for additional information:  
A. Review the weather forecast daily and relate conditions during the Pre-job Briefing and/or Safety Task Assignment (STA)  
B. Brief project personnel to the location of the primary severe weather shelter to be utilized by project personnel, and any other secondary severe weather shelters to be utilized if the primary weather shelter is not available.  
C. Monitor available radios and the PA system for notifications and instructions during severe weather conditions.  
D. Safely stop work activities and notify project supervision when unsafe conditions exist as the result of severe weather conditions.  
E. The PSS monitors lightning conditions for the site, and will direct public address (PA) and radio announcements be made at condition levels which either:  
1. Prepare personnel for possible protective actions should weather conditions deteriorate further (i.e., Lightning Watch), or  
2. Direct that protective actions be taken immediately (Lightning Stand-down), in which case all outdoor activities shall stop, equipment/work area placed in a safe configuration, and personnel shall
## Job Hazard Analysis

### Work Activity, Task, or Job Step/Section

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<td>seek shelter in an approved location (e.g., permanent grounded structure, car or truck with windows in a closed position, etc.). Personnel shall remain sheltered for a minimum of 30-minutes after the last visible lightning has been detected and/or the “all-clear” announcement has been made. If no PA or radio announcement is heard, personnel shall report all visible lightning observations to the FBP PSS.</td>
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**Exposure to:**
- Bee Sting
- Mosquito Bite
- Poison Ivy
- Poison Oak
- Rabies
- Snake Bite
- Spider Bite
- Tick Bite
- Other plant or animal exposure with potential for allergic reaction, bloodborne disease, physical harm, etc.

• Depending on the likely potential hazard, do the following:
  A. Brief workers to identify biological hazards, including poisonous animals, insects, and plants.
  B. Inspect work areas prior to starting the assigned activity/task.
  C. Inform supervision and the FBP Medical Group of known allergies or special medicines utilized during allergic reactions (e.g., Epi-pen).
  D. Utilize vendor-provided extermination and/or pest control services when and where practicable and effective (spiders, vermin, etc.).
  D. Cover exposed skin, as needed.
  E. Gather clothing and tape bottom of pants legs, as required.
  F. Utilize disposable coveralls, when appropriate.
  G. Utilize insect repellant or Ivy Block, when appropriate.
  H. Mow high grass or areas of vegetation before starting activity.
  J. Shower, or wash any exposed skin and clothing, if contact with poisonous plants occurs.
  K. Stay away from stray or wild animals.
  L. If a dead bird or animal is discovered, do not come in contact with it. Notify supervision and/or an OS&H Professional immediately.

### 6. Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12)

- Inbound/Outbound Inspections
  - Defective, counterfeit, or unsafe equipment (tools, vehicles, etc.) entering the PORTS Site
  - RAD-contaminated equipment entering the PORTS Site

  - See page 1, Description of Work, NOTE 2.
    - The FBP Equipment Group (ext. 3921) shall conduct an inspection of all inbound equipment for the presence of hazards or other defects.
    - The FBP RAD Group (ext. 2158) shall survey as deemed necessary all inbound equipment prior to authorizing equipment entry into the PORTS Site.

  - RAD-contaminated equipment or material being released from the PORTS site
  - Defective or unsafe conditions of equipment or material being released from the PORTS site

  - All heavy equipment, tools, material, etc. shall undergo a RAD Survey and RAD approval prior to release from the PORTS Site. Equipment approved for release shall have a UE-5 (or other PORTS Site approved) form completed prior to release from the PORTS Site.
  - The responsible FBP Group shall conduct an outbound inspection of all equipment, as required, prior to release from the PORTS Site.
### Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12)
- **Powered Industrial Trucks (Forklifts)**
- **Heavy Equipment/Machinery**

#### Work Activity, Task, or Job Step/Section

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<tbody>
<tr>
<td><strong>Unqualified Operator</strong></td>
<td>• See page 1, Description of Work, NOTE 2.</td>
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<td></td>
<td>NOTE: For all of the below hazards, &quot;equipment&quot; refers to either forklifts or heavy equipment, as appropriate, or both.</td>
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<td>• Use only trained/qualified operators, who shall be briefed on or have read, understand, and follow all equipment manufacturers’ operational manuals.</td>
</tr>
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</table>

- **Utilizing Defective or Damaged Equipment**

- **Struck By Damage to Equipment/Facilities**
  - • Utilize spotter/buddy system when maneuvering, stacking, or loading containers/material. Consider also OVERHEAD hazards.                                                                                                           |
  - • While transporting a load, operators shall travel at a safe speed. Operators shall avoid speeds that cause the equipment to bounce or rock back and forth violently when hitting bumps or potholes. |
  - • Designate a trained flagperson along with signs, signals, and barricades, as necessary.                                                                                                                                                                                                 |
  - • Ground personnel, with the exception of a spotter, shall not position themselves within 30-feet of working heavy equipment.                                                                                                           |
  - • If ground personnel must position themselves within 30-feet of heavy equipment, the following shall be observed |
      A. Approach the heavy equipment from the front so the operator can see you;                                                                                                                                             |
      B. Utilize hand signals or radios to contact the operator;                                                                                                                                                                 |
      C. The operator shall ground equipment attachment(s), place controls in a neutral configuration, and set the equipment brakes (when equipped);                                                                            |
      D. The operator communicates (hand signals or radio) that it is okay for the ground person(s) to enter into the area; and                                                                                                        |
      E. The ground person(s) shall notify the equipment operator when they have cleared the 30-ft. zone.                                                                                                                                 |
  - • Excavations located adjacent to active roadways shall be protected by "jersey barriers" or other FBP-approved protection devices which will function as a warning device that the mobile equipment is approaching the edge of the excavation. |
  - • Non-essential ground personnel shall not enter into any swing radius of operating equipment.                                                                                                                                                                       |
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| **Unsafe Operation**                   | • When provided, all operators and passengers shall utilize seatbelts at all times.  
• Operators shall be responsible for housekeeping conditions within cabs of all equipment.  
• Operators shall not utilize cell phones or non-work-related portable radios, electronic devices, or headphones while operating equipment.  
• An operator is considered to have left a vehicle unattended if he/she is more than 25 feet from the vehicle, or the vehicle is out of sight.  
• Ensure the load is within the equipment's rated capacity.  
• Operator shall utilize equipment/forklift lights when inside facilities.  
• Sound the horn when entering/exiting facilities, passing through doorways, or when back-up alarms are not available.  
• Inside facilities, equipment shall not travel at speeds greater than 5 mph, or a brisk walking pace.  
• Utilize only forklift manufacturer-approved fork attachments or attachments that have been approved by a registered professional engineer when the forklift manufacturer cannot be contacted. A new load capacity plate shall be affixed to the forklift.  
• Equipment operators shall:  
  A. Be alert to their surroundings  
  B. Be alert to roadway and uneven terrain conditions, and vehicle traffic  
  C. Follow posted traffic regulations and travel at a safe, controlled speed  
  D. Ensure that there are no overhead hazards/obstructions. | |
| **Unstable or Non-secured Load** (resulting in a falling load) | • Secure all loads, as necessary. Certain engineered loads (e.g., jersey barriers with fork pockets) may not need to be secured if handled as designed.  
• Keep loads low to the ground during movement of the load.  
• DO NOT rig slings directly to forks during rigging operations. | |
| **Electrocution or Electric Shock** | • Operating equipment shall maintain a minimum clearance from overhead energized wires of 10-feet (20-feet for derricks and cranes) for voltages less than 50kV.  
• Additional clearance distance is required for voltages of 50kV or greater.  
• Refer to OSHA 1910.333(c) for guidance.  
• Power line clearances differ slightly; refer to OSHA 1926.1407 - 1411 for more information. | |
## Job Hazard Analysis

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</table>
| Crush or Pinch (e.g., to hands/extremities when manually adjusting fork width)     | • When manually adjusting fork widths, personnel shall be aware of potential hand pinch-points.  
• Handle forks away from mast components to limit exposure to pinch-points.  
• When possible, tilt the mast forward to free up forks for ease in moving forks; if the fork is too heavy to lift alone, obtain help from another worker.  
• Utilize leather work gloves during adjustment.                                                                 |

### 8. Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12):
- Loading/Unloading Roll-Off Box-type Containers  
- Operating Trash Trucks  
  • Struck By (wire rope cable due to failure and sudden release of energy during loading or unloading of roll-off container; vehicle or equipment operating in congested traffic area)  
  • Crush (pinned between vehicles or vehicles and equipment in congested traffic area)  
  • Receive a pre-job briefing as necessary for the work area.  
  • All ground personnel shall position themselves such that they are not within the danger zone in the event the roll-off box truck wire rope cable fails. This zone will vary case-by-case and shall be determined each time prior to loading or unloading a roll-off box container.  
  • Contact the project supervisor or area facility manager for permission prior to entering into the active work area.  

### 9. Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12):  
- Operation and Use of Motorized Carts  
  • Caught Between  
  • Contact With/Contusion  
  • Crush  
  • Damage to Equipment/Facility  
  • Laceration  
  • Pinch  
  • Struck By  
  • A. Discuss vehicle safety issues at safety meetings, as necessary  
  • B. Ensure that motor vehicle operators are properly trained and qualified prior to operating any vehicles  
  • C. A motorized cart Operator shall:  
    1. Prior to first use each shift, complete an inspection, and complete FBP-OS-PRO-00010-F01, "Operator Checklist for Fossil Fueled/Electric Carts."  
    2. Ensure that carts outdoors in daylight have brake lights.  
    3. Ensure that carts outdoors after dark or inside buildings have the following:  
       i. Minimum one (1) headlight  
       ii. Minimum one (1) tail/brake light  
       iii. Minimum one (1) flashing light  
    4. Take vehicle out of service immediately if vehicle cannot be operated safely, and ensure vehicle is tagged out, according to "Accident Prevention/Equipment Control Tags" procedure.  
    5. Notify Supervisor of any items that do not satisfactorily pass inspection.  
    6. Assess cart size. IF Operator cannot sit comfortably in operator's seat with all extremities inside the cab of the cart during operation, THEN notify Supervisor. DO NOT operate cart.  
    7. Ensure pedestrians are always given the right of way.  
    8. Not operate any type of motorized cart unless issued a "cart license," following completion of training and Job Performance Measure (JPM).  
    9. Follow all traffic sign postings and speed limits.  
   10. Not exceed the posted plant site speed limit.  
   11. Report any deficiencies and operational defects to Supervisor immediately.  
   12. Ensure that all occupants wear seat belts, if so equipped.  
   13. Clear obstructions (e.g., ice, snow, sleet, dust, etc.) from windshield and windows prior to operating vehicle.  
   14. Perform a 360-degree walk-around of the vehicle prior to movement in order to identify if a spotter
<table>
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<tbody>
<tr>
<td>is required (tight spaces and/or obstacles).</td>
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<tr>
<td>15. Not operate within the affected process area or Immediate Evacuation Zone (IEZ) of a Category 2 nuclear facility during loss of the Criticality Accident Alarm System (CAAS) coverage, except for vehicles required for CAAS operability restoration.</td>
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<tr>
<td>16. Take special precautions when driving in congested or high-hazard areas, such as the area around a process building, track alleys, inside buildings, and around construction sites.</td>
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<tr>
<td>17. Not drive over unprotected air hoses, electrical cords, cables, etc.</td>
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<tr>
<td>18. Not block driveways, access to parking lots, or emergency vehicles' access; or park within designated zone of a fire hydrant (within 10-feet of hydrant), marked or unmarked.</td>
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<tr>
<td>19. Yield the right-of-way to all cylinder haulers and emergency vehicles when they are responding to an emergency.</td>
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<td>20. Not move a vehicle until all occupants are seated.</td>
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<tr>
<td>21. Not exit a vehicle until it has come to a complete stop.</td>
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<tr>
<td>22. Shut off the motor prior to leaving vehicle unattended (defined as more than 25 feet from the vehicle, or the vehicle is out of sight).</td>
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<td>23. Set the PARKING brake.</td>
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<tr>
<td>24. Not use cellular phones while driving.</td>
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<tr>
<td><strong>D. WHEN operating a vehicle indoors, observe the following:</strong></td>
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</tr>
<tr>
<td>1. Keep all body parts inside the vehicle.</td>
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<tr>
<td>2. Slow down and sound horn, when equipped, when approaching blind spots or intersections.</td>
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<td>3. Do not park vehicles in an area that would block or impede access to or exit from a building.</td>
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<td>4. Drive vehicle into building only when necessary to perform work.</td>
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<td>5. Travel designated lanes, when possible, inside of building.</td>
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<tr>
<td>6. Ensure overhead doors are fully opened before entering or exiting the building through the doorway.</td>
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<tr>
<td>7. Turn on headlights and flashing lights in a building, or outdoors after dark.</td>
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<td>8. Park only in approved parking areas.</td>
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<td>9. Travel at a speed no faster than a &quot;brisk walk.&quot;</td>
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</table>

**10. Equipment and Vehicle Activities (WSHP 2.5.4 and 2.5.12):**

- Process Building Vehicle Use

- Caught Between
- Contact With/Contusion
- Crush
- Damage to Equipment/Facility
- Laceration
- Pinch
- Struck By

- The following administrative controls were issued in October 22, 2012 and revised in February 7, 2013 notice titled "PROCESS BUILDING VEHICLE USE." Where their implementation conflicts with any requirement in the prior section(s) of this JHA, the requirement(s) of this section shall overrule:

**A.** All gasoline- or diesel-powered vehicles are prohibited from entering the three process buildings (X-326, X-330, X-333) without authorized access by the Facility Manager (FM) in writing. The FM will only authorize those vehicles which must enter the building, and a specific route must be requested and approved. The FM will track the individuals/vehicles which have been authorized entry.

**B.** Any motorized vehicles which are allowed to operate in the three process buildings (electric carts and other vehicles "authorized" by the FM above) will be accompanied by a vehicle escort for all movements. The X-333/X-330 FM may grant approval for cart or other vehicle operations without the use of a vehicle escort.
### Work Activity, Task, or Job Step/Section

<table>
<thead>
<tr>
<th>Potential Hazard(s)</th>
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<tbody>
<tr>
<td>escort to tenant personnel on a case-by-case basis. The vehicle escort will be external to the vehicle (not a passenger). C. Effective October 23, 2012, anyone required to operate any motorized vehicle for work in Process Buildings will be given a brief covering the recent vehicle incidents. D. Effective October 24, 2012, all motorized vehicle operation in Process Buildings will require Facility Manager (or designee) written approval. 1. Work groups may request permission to use motorized vehicles in Process Buildings for specific tasks. 2. Very few &quot;general tasks&quot; will be authorized to use motorized vehicles. 3. Authorization will consist of FM (or designee) written permission for the task which will include the travel path. 4. When a work group has written FM approval for a task, an individual who has received the brief will be authorized to use a motorized vehicle for those approved tasks only in Process Buildings. 5. Motorized vehicles which are in contamination areas will remain in those areas, but cannot be operated/used after 10/24/12 until all of the requirements for motorized vehicle use in Process Facilities have been met. E. Managers/Supervisors from project execution or support organizations assigned to the Process Buildings will assess their areas/activities to ensure compliance. The form and guidance contained within FBP Long Term Order LTO-FBP-12-002, &quot;Observations of Work Activities and Workplace Conditions by Directors and Managers&quot; will be used to document this action; each assigned manager/supervisor will conduct one observation each week, and at least one of the observation elements will be &quot;vehicle safety.&quot;</td>
<td></td>
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</table>

### 11. Activities Requiring the Use of A Spotter

(2.5.5) [10 CFR 851.23(a)(7)]

- Crush
- Pinch Point
- Struck By
- Electrical Shock/Electrocution
- Environmental Insult
- Equipment Damage
- Property Damage

- Spotters (or Vehicle Escorts for activities as described in the prior section) are required for the following activities:
  A. Hoisting and Rigging Activities.
  B. A vehicle/equipment/forklift activity where driver/operator has limited visibility in the direction the vehicle/equipment/forklift is traveling or when the point of operation is not in full view of the driver/operator.
  C. Vehicle/equipment/forklift activities in tight spots, or locations where there is likelihood for personal injury by being struck by equipment, the potential for property damage, or there is potential for damage to equipment.
  D. Movement of vehicles/equipment/forklifts in proximity to or travelling underneath overhead hazards (electric lines, communications lines, pipe runs, other utilities, etc.) where the clearance between the vehicle/equipment/forklift is less than 4-feet from the overhead hazard.
  E. When vehicles/equipment/forklifts must operate within or adjacent to an active pedestrian walkway unless authorization is granted through some other means.
  F. When work activities occur on or adjacent to a PORTS site roadway where traffic must be maintained or controlled – a minimum of two (2) spotters are required when the activity impacts a section of PORTS roadway.
### Work Activity, Task, or Job Step/Section

#### Potential Hazard(s)

G. During loading and unloading activities (including semi-trailers or flatbed trailers).

H. When directed by project supervision or OS&H personnel.

- Personnel designated to function as spotters shall complete FBP Spotter Safe Practices Training.
- Spotters shall be identified during the pre-job by project supervision.
- Spotters shall participate in pre-job briefing that shall include the scope of work, signal protocol to be utilized by the spotter(s)/operators, what to do if visual or voice communication between spotter and operator is lost, and walk-down of routes to be utilized by vehicles, equipment, or forklifts to identify potential hazards (i.e., potential for personnel being struck, potential for striking other moving objects/fixed objects, overhead hazards, uneven surfaces, blind intersections, etc.).
- During movement of scissor lift in tight quarters of less than one foot of clearance on either side, the passenger will leave the scissor lift and become a spotter during the movement.
- Prevent personnel from positioning under a suspended load.
- Keep non-essential personnel and equipment away from the operation that is in-progress.
- Maintain safe distances from moving vehicle/equipment/forklift.
- Maintain eye contact with vehicle/equipment/forklift operator at all times.
- Maintain a clear escape route.
- Provide clear direction during the work activity so as to prevent personal injury, property damage, or damage to equipment.
- Remain clear of vehicle/equipment/forklift blind spots. Operator of vehicles/equipment/forklifts shall STOP all vehicle/equipment/forklift movement any time visual or voice communication with the spotter is lost.
- Approach operating vehicles/equipment/forklift only after the operator has given verbal or visual approval that it is okay for the spotter to approach and the vehicle/equipment/forklift has been placed in a safe configuration with forks or any attachment grounded, the unit controls have been placed in a neutral configuration, the emergency brake (if equipped) set, and the unit is turned off.
- Only designated, qualified spotters shall give signals to the operator. However, operators shall obey a STOP signal at all times, no matter who gives the signal.

#### Hazard Control(s)

12. Hoisting and Rigging Activities (WSHP 2.5.6)

- Caught Between (load and other equipment)
- Crush or Struck By (suspended load)
- Pinch Point (when positioning or removing slings)

- See page 1, Description of Work, NOTE 2.

- Crane operators shall be licensed as required according to OSHA 1926.1427.
- Before performing the lift verify that all lifting equipment and rigging accessories are current with regards to FBP site and all Regulatory Standard inspection requirements.
- Forklift attachments utilized in hoisting activities are required to meet the requirements found in OSHA 1910.178(a).
- Follow the requirements of procedure FBP-SM-PDD-00001, “Hoisting and Rigging Program.”
- Verify that all required forms or checklists have been completed prior to performing any lifting activities.
- Personnel shall not be positioned under any suspended load. Non-essential personnel are not permitted within the established lift zone.
<table>
<thead>
<tr>
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<th>Potential Hazard(s)</th>
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<tbody>
<tr>
<td>13. Elevated Work/Fall Protection (WSHP 2.5.7) [10 CFR 851.23(a)(3) and (7)]</td>
<td>• Contact with Energized Line (shock; electrocution) • Fall from Height • Pinch Point • Strike Against • Struck By</td>
<td>• See page 1, Description of Work, NOTE 2. • The use of fall protection PPE shall be in accordance with procedure FBP-OS-PRO-00020, “Fall Prevention and Protection” and OSHA 1926 Subpart M, “Fall Protection.” • All personnel who utilize fall protection equipment shall have completed the FBP Fall Protection Training Module BEFORE using fall protection equipment at PORTS. • Protection from overhead falling hazards must be provided as follow: A. Placement of toe boards and the use of hard hats shall be required. B. Equipment shall not be stored within four feet of an unprotected edge. C. Canopy structures may be required in high-traffic areas. D. The area to which objects could fall must be barricaded and individuals not equipped with hard hats prohibited from entering. • Engineering controls of fall hazards consist of standard railings and toe boards. • Utilize approved fall protection during conditions as stipulated in the procedure. • A warning line and safety monitor can be used in lieu of fall protection, if desired, only under conditions outlined in the procedure. • WHEN personnel are working from portable ladders above 6 feet from the floor or surface and 3 points of contact cannot be maintained, THEN employees must wear and use an approved safety harness /lanyard system for secondary fall protection. • Fire retardant (FR) rated fall protection equipment shall be utilized by personnel working at elevated locations while performing hot work activities. • Fall protection PPE shall be utilized so that the person utilizing the fall protection PPE will not strike the ground or other objects located below (e.g., piping, platforms or catwalks, etc.) in the event the person were to fall or be ejected from the elevated location. • Personnel shall visually inspect all components of fall protection equipment prior to each use, and shall remove from service and tag out any defective equipment. • Personnel must ensure fall protection equipment is within inspection date prior to use. • WHEN creating a floor hole (see definition), floor opening (see definition), or wall opening, THEN perform actions as outlined in the procedure. • Follow the instructions and guidelines listed on applicable permits, work control documents, and procedures. • Upon completion of work requiring the use of fall protection equipment, transport equipment back to an...</td>
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## Work Activity, Task, or Job Step/Section

<table>
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<tr>
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<tbody>
<tr>
<td>• Unqualified personnel operation of man-lift type of equipment</td>
<td>acceptable storage location (refer to Appendix A, “Supplemental Guidance on Storage and Control of Fall Protection Equipment” in the procedure).</td>
</tr>
<tr>
<td>• Lack of or improper PPE for personnel utilizing aerial man-lift type of equipment</td>
<td>• Fall protection equipment shall be stored at a location that is protected from the outdoor environment.</td>
</tr>
<tr>
<td>• Struck By or Pinch Point (operating aerial man-lift type of equipment in tight or</td>
<td>• Store and control fall protection equipment also as outlined in Appendix A.</td>
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<td>limited areas)</td>
<td>• A “Fall Protection Work Plan” for the use of alternative fall protection systems (such as warning-line systems or controlled access zones) may be authorized under certain conditions.</td>
</tr>
<tr>
<td>• Aerial man-lift type of equipment failures</td>
<td>• The priority of controls for protecting employees is as follows:</td>
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<tr>
<td>• Personnel thrown from or ejected from aerial man-lift type of equipment man-basket</td>
<td>A. Guardrail system</td>
</tr>
<tr>
<td>• Tip-over of aerial man-lift type of equipment during equipment operation</td>
<td>B. Powered aerial devices</td>
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<tr>
<td>• Electrical shock hazards due to operation adjacent to or contacting energized</td>
<td>C. Scaffolds or other access means, and</td>
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<tr>
<td>overhead utilities</td>
<td>D. Alternate fall protection systems.</td>
</tr>
<tr>
<td>• Operation of aerial man-lift type of equipment during high wind conditions</td>
<td>• Employ safety monitoring systems to establish a controlled access zone to limit access only to trained workers.</td>
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<td>• Striking ground personnel, or other object that results in personnel injury, property damage, or damage to equipment</td>
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<tr>
<td>• Aerial man-lift type of equipment failure or occupied aerial man lift becoming</td>
<td>• Personnel awareness of objects that could strike the body or result in a whole body pinch point type of injury (such as exposure to low head space clearance issues, or head/body/extremities caught between stationary object and aerial man lift equipment components) when working from aerial lift or scissors lifts where a whole body pinch point injury could occur.</td>
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<td>disabled with personnel at elevated positions</td>
<td>• Both feet are required to remain on floor of lift equipment when personnel are working from lift equipment</td>
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<td>• Check the surrounding work area for hazards (i.e. obstacles, debris, uneven terrain, etc.) before utilizing the aerial lift do not exceed manufacturer’s allowable side-slope and grade requirements while operating aerial man-lift.</td>
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<td>• Project Safety/IH and/or Supervisor shall jointly agree on the establishment of a work zone during the</td>
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### 14. Use of Aerial Man Lifts and Other Elevated Man-Lift Type of Equipment [such as scissors lifts] (WSHP 2.5.7)

- See page 1, Description of Work, NOTE 2.

- Personnel shall be trained and qualified for the specific aerial lifts they will be utilizing.
- Manufacturer’s operation manual shall be present and followed.
- Conduct a daily documented pre-use inspection/function test on aerial lift.
- Minimum PPE requirements for using aerial man-lift type of equipment shall include: hardhat, safety glasses with rigid side shields, safety-toe work boots, leather gloves, and personal fall arrest system (see next bullet).
- In addition to any relevant requirements of other fall prevention and protection sections of this JHA, a full body harness and personal fall limiter (PFL) device (e.g., Miller TurboLite, MiniLite, etc.) or other self-retracting lifeline (SRL) approved by the SRL manufacturer for use in the horizontal configuration shall be utilized by all personnel when utilizing aerial man-lift equipment to prevent personnel from being ejected or falling from the aerial man-lift basket and striking any object below the elevated position. The PFL/SRL being utilized shall be configured and utilized at the shortest length possible to prevent ejection from the man-lift basket. Contact the Safety/IH Group for guidance of the type of fall protection PPE that should be utilized.
- Personnel awareness of objects that could strike the body or result in a whole body pinch point type of injury (such as exposure to low head space clearance issues, or head/body/extremities caught between stationary object and aerial man lift equipment components) when working from aerial lift or scissors lifts where a whole body pinch point injury could occur.
- Both feet are required to remain on floor of lift equipment when personnel are working from lift equipment.
# Work Activity, Task, or Job Step/Section

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<th>Potential Hazard(s)</th>
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| use of the aerial man lift. Non-essential ground personnel shall not be permitted within the work zone while overhead work is in-progress. This work zone shall be identified by approved barricades, cones, or other FBP OS&H-approved means. | • Keep ALL non-operating personnel away from aerial lift during all driving and swing operations.  
• Proper distances shall be maintained from energized overhead electric lines or other energized equipment based on the type of aerial man-lift being utilized. All non-insulated aerial man-lifts shall maintain a minimum of 10-ft. clearance from all energized electrical circuits/equipment using a barricade. Additional distance may be required dependent on the rated voltage of the involved electrical equipment/device. Contact the project Safety/IH Group for additional guidance.  
• Follow manufacturer’s operating requirements for operating aerial man-lifts during windy conditions. Take wind speed measurements using an anemometer, or contact project OS&H for wind speed evaluation  
• A dedicated support person shall be assigned any time the basket is in the air and aerial lift is operating. This person shall be available at the work-site and shall have been instructed on the means to manually operate and lower the aerial man-lift basket in the event that the personnel in the basket have lost power and cannot lower the basket themselves. Communication (radio or verbal) between the support person and aerial man lift basket occupants shall be available at all times.  
• Aerial man-lifts shall not be utilized to gain access to or from elevated levels unless the aerial man-lift manufacturer approves this type of usage. Manufacturer’s guidelines and instructions shall be followed. |
| 15. Utilizing Ladders to Perform Elevated Work [including ladder stands] (WSHP 2.5.7) |  
• Unqualified personnel utilizing ladders  
• Operation outside of manufacturer’s requirements  
• Personnel injured due to fall from ladder  
• Overhead hazards to ground personnel  
• Contact with electric lines  
• Tip-over due to elevated winds  
• See page 1, Description of Work, NOTE 2.  
  • Follow the requirements of procedure FBP-OS-PRO-00031, “Portable Ladders” and the ladder manufacturer’s operational instructions (usually found on stickers on the side of the ladder).  
  • Complete training for ladder inspection and use, according to FBP-BS-PRO-00030, “Conduct of Training,” as required by OSHA 1926.1060(a) and OSHA 1926.1053(b)(15).  
  NOTE: Personnel who have completed FBP required training for ladder inspection and use are recognized as competent persons to perform periodic inspections, as required by OSHA 1926.1053(b)(15).  
  • Personnel who utilize ladders shall be briefed prior to the use of ladders. Minimum briefing requirements include:  
  A. Nature of fall hazards in work area  
  B. Proper use, care, and placement of the ladder  
  C. Maximum intended load for the ladder used  
  D. Ladder user requirements  
  E. Ladder storage and transportation requirements  
  • The ladder chosen must be long enough to provide access to the work area without necessitating standing on the top two steps or a stepladder or the top three rungs of a straight ladder; |
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<tr>
<td>16. Excavation, Trenching and Cave-in</td>
<td>• The ladder selected must be sufficient for the weight of the employee plus the weight of any tools and materials: limit ladders to Type 1A or stronger as per the site’s ladder procedure.</td>
<td>A. Type 1A – Extra-heavy duty industrial ladder will support 300 lbs.</td>
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<td>• When a straight ladder is used to gain access to a roof an elevated surface, the side rails should extend at least three feet above the support point at the eave, gutter, or roof line elevated surface;</td>
<td>• When a straight ladder is used to gain access to a roof an elevated surface, the side rails should extend at least three feet above the support point at the eave, gutter, or roof line elevated surface;</td>
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<td>• Never splice together short ladders to form a longer ladder;</td>
<td>• Never splice together short ladders to form a longer ladder;</td>
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<td>• Never place ladders on boxes, barrels, or other unstable bases for additional height;</td>
<td>• Never place ladders on boxes, barrels, or other unstable bases for additional height;</td>
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<td></td>
<td>• Ladders must be placed on level surfaces. Although ladder feet or shoes provide an important measure of safety, they cannot compensate for uneven ground unless they are designed with adjustable feet;</td>
<td>• Ladders must be placed on level surfaces. Although ladder feet or shoes provide an important measure of safety, they cannot compensate for uneven ground unless they are designed with adjustable feet;</td>
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<td></td>
<td>• Be alert to slippery surfaces. Nonslip bases are not a substitute for safety in placing, lashing, or holding a ladder on oily, metal, concrete, or other slippery surfaces;</td>
<td>• Be alert to slippery surfaces. Nonslip bases are not a substitute for safety in placing, lashing, or holding a ladder on oily, metal, concrete, or other slippery surfaces;</td>
</tr>
<tr>
<td></td>
<td>• Do not use ladders for unintended purposes;</td>
<td>• Do not use ladders for unintended purposes;</td>
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<td>• Do not use a metal ladder when working on or near electrical equipment;</td>
<td>• Do not use a metal ladder when working on or near electrical equipment;</td>
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<td>• The distance from the bottom of a straight ladder to its support wall shall be one-quarter the working length of the ladder;</td>
<td>• The distance from the bottom of a straight ladder to its support wall shall be one-quarter the working length of the ladder;</td>
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<td>• Where possible, straight ladders should be secured with a rope or wire at the top and blocked at the bottom;</td>
<td>• Where possible, straight ladders should be secured with a rope or wire at the top and blocked at the bottom;</td>
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<td></td>
<td>• The top two steps and platform of a stepladder shall not be used, and the top three rungs of a straight ladder shall not be used;</td>
<td>• The top two steps and platform of a stepladder shall not be used, and the top three rungs of a straight ladder shall not be used;</td>
</tr>
<tr>
<td></td>
<td>• Do not over-reach, jump or slide from a ladder while on it. Ladders shall not be moved, shifted, or extended while occupied;</td>
<td>• Do not over-reach, jump or slide from a ladder while on it. Ladders shall not be moved, shifted, or extended while occupied;</td>
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<td></td>
<td>• Always face the ladder and use both hands while ascending or descending. Use 3-point contact (one hand-two feet or 2-hands-one foot) at all times;</td>
<td>• Always face the ladder and use both hands while ascending or descending. Use 3-point contact (one hand-two feet or 2-hands-one foot) at all times;</td>
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<td></td>
<td>• Tools or materials should be raised by means of a rope after the climber has reached the working position. Carrying heavy loads up or down ladders is prohibited;</td>
<td>• Tools or materials should be raised by means of a rope after the climber has reached the working position. Carrying heavy loads up or down ladders is prohibited;</td>
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<tr>
<td></td>
<td>• Barricades and warning signs should be posted when ladders are placed near doors or other locations where they could be struck;</td>
<td>• Barricades and warning signs should be posted when ladders are placed near doors or other locations where they could be struck;</td>
</tr>
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<td></td>
<td>• Two workers shall handle and set up all extension ladders;</td>
<td>• Two workers shall handle and set up all extension ladders;</td>
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<td></td>
<td>• Ladders should not be used by more than one person at a time unless they are designed for such use;</td>
<td>• Ladders should not be used by more than one person at a time unless they are designed for such use;</td>
</tr>
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<td></td>
<td>• The bracing on the back side rails of stepladders is designed only for increasing stability, not for climbing;</td>
<td>• The bracing on the back side rails of stepladders is designed only for increasing stability, not for climbing;</td>
</tr>
<tr>
<td></td>
<td>• Prior to use, personnel are to visually inspect ladders. Check for cracks, grease, paint or other defects that could compromise the integrity of the ladder or present slip/trip hazards while on the ladder. Tag any defective ladder out of service and notify Project Superintendent.</td>
<td>• Prior to use, personnel are to visually inspect ladders. Check for cracks, grease, paint or other defects that could compromise the integrity of the ladder or present slip/trip hazards while on the ladder. Tag any defective ladder out of service and notify Project Superintendent.</td>
</tr>
<tr>
<td></td>
<td>• Stepladders are not to be utilized for accessing other floors, elevated work areas, or platforms.</td>
<td>• Stepladders are not to be utilized for accessing other floors, elevated work areas, or platforms.</td>
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<tr>
<td></td>
<td>• Secure ladders at top or have ground personnel secure ladders when climbing.</td>
<td>• Secure ladders at top or have ground personnel secure ladders when climbing.</td>
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<tr>
<td></td>
<td>• Fall Protection PPE equipment is required when working from portable ladders above 6-ft. when personnel cannot maintain approved 3-point contact (minimum of one hand) with the ladder.</td>
<td>• Fall Protection PPE equipment is required when working from portable ladders above 6-ft. when personnel cannot maintain approved 3-point contact (minimum of one hand) with the ladder.</td>
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### Job Hazard Analysis

<table>
<thead>
<tr>
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</table>
| Penetration Activities (WSHP 2.5.8) [10 CFR 851.23(a)(7), 10 CFR 851.24] | Electrical Shock, Electrocution, Equipment Damage, Struck By | • See page 1, Description of Work, NOTE 2.  
  - The requirements of procedure FBP-OS-PRO-00022, “Excavation/Penetration” shall be followed for excavations equal to or greater than 12” in depth or penetrations equal to or greater than 1-1/2” into building walls, floors and ceilings. If this is the case, an excavation/penetration permit is required.  
  - Additional requirements found in 29CFR 1926 Subpart P, “Excavations” shall be followed.  
  - Prior to any excavation, ensure a project-specific Excavation Competent Person is identified.  
  - As required, project-specific JHAs shall be utilized to define requirements for excavations specific to the involved project. |
| 17. Walking/Climbing Activities on Uneven Terrain and Graded Gravel/Paved Areas (parking lots, roadways, etc.) (WSHP 2.5.9) | Slip, Trip, Fall | Graded Gravel/Paved Area (parking lot, roadway, sidewalk, etc.):  
  - Be situationally aware of conditions and surroundings  
    > Watch for breaks, holes or seams in asphalt/concrete  
    > Watch for depressions or potholes  
    > Be aware of obstacles such as bumpers, curbs, protrusions, etc.  
    > Avoid water puddles  
    > In cold weather, be aware of icy or snow-covered patches  
  - Stay focused on your walkpath; DO NOT allow distractions (e.g., phone texting) to remove focus  
  - Avoid large gravel, stones, rocks, chunks of asphalt/concrete, etc.  
  - DO NOT walk with hands in pockets such that a stumble or imbalance causes a fall  
  - DO NOT walk with awkward or heavy loads that may cause fall  
  - Wear sturdy, slip-resistant shoes or boots  
  - Uneven Terrain:  
    - Receive briefing of known hazards within the work areas such as uneven terrain conditions and potential for wet or muddy conditions within project area.  
    - Maintain general area housekeeping as work progresses — debris shall be removed from work areas as soon as possible during work shift and at end of shift.  
    - “Walk Your Space” – correct identified hazards upon discovery when possible or barricade hazard to alert others and notify supervisor of the hazard.  
    - Worker protection for work activities on slopes shall be determined during a pre-job walk-down of work area.  
    - Avoid walking on inclined or slick surfaces, when possible. Treat area before beginning repetitive activities.  
    - Keep extension cords, hoses, and other obstructions out of walkways.  
    - Do not step over or duck under barricades. Access the work areas at the appropriate and approved locations/egress points.  
    - Do not jump from equipment stairs/ladders, portable stairs, or ladders.  
    - Utilize 3-point contact when egressing equipment, ladders, and portable stairs.  
    - Wear safety toed-boots with adequate tread to negotiate uneven terrain and slippery surfaces.  
    - Replace worn safety-toed boots/shoes as needed. |
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| 18. Installing Temporary Lighting/Working in Dark or Poorly-Illuminated Areas | • Electric Shock (due to contact with energized electrical components)  
• Trips/Falls  
• Walking into Objects  
• Struck By Vehicles/Equipment | • Follow the requirements of procedure FBP-OS-PRO-00068, “Instructions for Lockout/Tagout” as required.  
• No work shall be performed on an energized electrical circuit.  
• GFCI protection shall be required when utilizing cord and plug type of temporary lighting.  
• Temporary lighting shall provide adequate illumination such that the illumination requirements of OSHA are met.  
• Temporary light bulbs shall be protected by an approved cage system or other approved means to prevent accidental damage to the bulbs.  
• Personnel working at night shall utilize reflective trimmed safety vests or other approved outer-most layer of clothing so they can be seen.  
• Personnel who must travel through non-illuminated or poorly illuminated areas should be provided with flashlights to be utilized as they pass through the area.  
• Areas where light is not provided or natural light is not adequate, and temporary lighting powered by generators is used, shall be posted as “Flashlight Required When Entering.” Personnel working within these areas are required to have a flashlight for exiting the area in the event that the temporary lighting fails. Optional emergency egress lighting that comes on in the event of a power failure may be substituted for the flashlight in these areas as long as adequate lighting is provided by the emergency lighting to exit the involved area.  
• No work activities shall be conducted:  
  A. At night without auxiliary lighting that provides OSHA required illumination levels.  
  B. In non-illuminated or poorly illuminated areas that do not meet the OSHA requirements for illumination.  
  C. By flashlight, when flashlights are the only means of illumination.  
• Any temporary lighting (e.g., trailer mounted light plants, string lights, etc.) utilized for outdoor activities shall be turned on approximately 30-minutes before sunset and turned off approximately 30-minutes after sunrise. |
| 19. Hand/Power Tool Use (WSHP 2.5.16) | Carbon Monoxide Exposure | • Follow requirements of manufacturer's operations manual/instructions during use, including use of recommended PPE, if any.  
• Contact project Industrial Hygiene (IH) representative to determine the need for, and to conduct, monitoring of carbon monoxide if combustion-powered equipment is to be utilized inside buildings, trailers, or confined spaces. |
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<tr>
<td>Flying Debris</td>
<td>• Wear Protective Eyewear (Safety Glasses with side shields, or in combination with Face Shield, as required).</td>
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<tr>
<td>Improper Hand/Power Tool Use</td>
<td>• Follow requirements of manufacturer's operations manual/instructions during use, including use of recommended PPE, if any.</td>
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<tr>
<td>Excessive Noise Exposure causing harm to employee's hearing; Physical harm due to being startled.</td>
<td>• Follow requirements of manufacturer's operations manual/instructions during use, including use of PPE, if any. • Hearing protection will be required in work zones above 85 dBA based upon a Time-Weighted Average (TWA) sample. Areas above 85 dBA TWA shall be posted as requiring hearing PPE. Personnel shall be trained to the module titled &quot;Hearing Conservation.&quot; Other areas may be identified by project Safety/IH.</td>
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<tr>
<td>Exposed Sharp Blade</td>
<td>• Utilize tools/equipment for their intended purpose. • Use only self-retracting safety blade utility knives, and cut away from the body. • Personal, or other non-OS&amp;H-approved, knives are not to be used. • Use leather or cut-resistant (Kevlar) work gloves when manipulating hand tools, handling sharp-edged material, or when hands are exposed to potential pinch points or lacerations. NOTE: There are times when the use of gloves impedes the work (handling small nuts and bolts, intricate pieces, etc.) and are not practical. Personnel need to assess the job and determine conditions under which the work can be completed safely.</td>
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<tr>
<td>Pinch Points/Struck By</td>
<td>• Use leather or cut-resistant (Kevlar) work gloves when manipulating hand tools, handling sharp-edged material, or when hands are exposed to potential pinch points or lacerations. NOTE: There are times when the use of gloves impedes the work (handling small nuts and bolts, intricate pieces, etc.) and are not practical. Personnel need to assess the job and determine conditions under which the work can be completed safely.</td>
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| Sprains/Strains                         | • Avoid working with elbows elevated at awkward angles.  
• Use in-line tools, if available, to keep the wrists straight. | |
| Electrical Shock/Electrocution          | • Follow requirements of manufacturer's operations manual/instructions during use, including use of recommended PPE, if any.  
• Inspect tools and extension cords prior to use.  
• Use only double-insulated or 3-wire grounded power tools.  
• Utilize extension cords that are double-insulated and rated for the work environment.  
• Extension cords shall not be located in standing water, placed so that they create a trip hazard, run over by vehicles or equipment, or otherwise damaged.  
• Stanchions or other approved means to keep extension cords out of standing water shall be utilized.  
• GFCI protection is mandatory for construction and outdoor areas.  
• GFCI(s) shall be tested daily before use.  
• GFCI(s) shall be placed at the electrical power source (e.g., between electrical outlet and extension cord).  
• Unplug power tools before servicing them.  
• No field repairs of power/extension cords are permitted.  
• Electrical repairs shall be made only by a qualified electrician.  
• Remove any defective tools from service and tag them out of service with an orange "WARNING DEFECTIVE EQUIPMENT DO NOT USE" tag in accordance with procedure FBP-OS-PRO-00014, "Accident Prevention/Equipment Control Tags." | |

20. Conducting Work in a HOT Environment (indoor and outdoor activities); i.e., any combination of dry bulb (DB) temperature, relative humidity (RH), radiant heat, air velocity, permeable protective clothing, work activity level, and acclimatization that exceeds Wet-Bulb Globe Temperature (WBGT) Threshold Limit Values (TLVs)  

| Exposure to temperatures that result in HEAT stress-related symptoms or effects [e.g., heat rash, heat illness (nausea, vomiting), heat cramps, heat exhaustion, heat stroke, unconsciousness, death] | • When dry-bulb air temperatures are 85°F and/or when controls have not already been implemented, supervisors should contact their OS&H Professional for evaluations, monitoring, and recommendations of heat stress controls including temperature measurements and work-rest regimens or physiological monitoring (heart rate or body temperature), as well as for guidance regarding engineering controls, administrative work practices and PPE. Other conditions warranting an evaluation for temperature extremes include:  
A. Performing heavy, exhausting work in areas that are above 70°F.  
B. Wearing heavy attire or encapsulating, impermeable suits while working in areas that are above 55°F.  
• Identify potential heat stress conditions during project planning; include feasible controls or preventative measures to minimize heat stress in project design including: |
## Job Hazard Analysis

### 21. Conducting Work in COLD Environment (indoor and outdoor activities)

<table>
<thead>
<tr>
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<tr>
<td>Exposure to temperatures that result in COLD stress-related symptoms or effects; e.g., frostbite or metabolic slow down, such as hypothermia.</td>
<td>• Identify potential cold stress conditions during project planning and include feasible controls or preventative measures to minimize cold stress in project design including:</td>
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<td>A. FBP &quot;Temperature Extremes&quot; training and/or information awareness sessions for individuals working in cold environments.</td>
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<td>B. Implement ‘buddy system’ for isolated work areas.</td>
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<td>C. Comply with any cold-related medical restriction(s) imposed by physician.</td>
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<td>D. Report any known medical restriction(s) to supervision.</td>
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<td>E. Wear multiple layers of loose-fitting clothing, layer protective clothing, and maintain an extra set of dry clothing.</td>
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<td>F. Wear appropriate hand/foot protection based on work conditions (i.e., rubber gloves when working with water, rubber boots when working in wet or muddy conditions, etc.).</td>
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<td>G. Immediately change clothing if a significant area becomes saturated or immersed in water.</td>
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<td>H. Be aware of the encumbrances of wearing cold-weather PPE and the resulting hazards related to loss of dexterity, limited range of motion, impaired vision, and impeded balance associated with its use.</td>
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<td>J. Know, understand, and watch for signs/symptoms of cold stress illnesses.</td>
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<td>K. Encourage personnel to take warm up breaks, as needed.</td>
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<td>L. Industrial Hygiene personnel can assist in performing cold stress monitoring.</td>
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<td>• When dry-bulb air temperatures are 39°F and/or when controls have not already been implemented, supervisors should contact their OS&amp;H Professional for evaluations, monitoring, and recommendations of cold stress controls including temperature measurements and work-rest regimens, as well as for guidance regarding engineering controls, administrative work practices and PPE.</td>
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<td>22. Manual Material Handling</td>
<td>• Muscle strains</td>
<td>• Brief workers on back injury prevention prior to starting work tasks.</td>
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<td>• Sprains</td>
<td>• Personnel shall report any medically-imposed lifting restrictions to project supervision.</td>
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<td>• Other injuries</td>
<td>• “Size Up” the lift by answering the following questions:</td>
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<td>A. What is the estimated weight of the item to be lifted?</td>
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<td>B. Is the item stable?</td>
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<td>C. Will the item shift when moved?</td>
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<td>D. Can the item be better moved by utilizing mechanical equipment?</td>
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<td>E. How many personnel are required to safely lift/move the item?</td>
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<td>F. Do any of the personnel involved have any lifting restrictions?</td>
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<td>G. Are there any environmental restrictions (mud, uneven terrain, ice/snow, illumination concerns)?</td>
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<td>• Use mechanical means to lift/move item when possible.</td>
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<td>• Verify that there is a clear, safe pathway before moving item.</td>
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<td>• Bend at knees, keep back straight, when picking up or setting down the item.</td>
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<td>• Implement worker rotation when multiple lifts are required.</td>
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<td>• Limit single, unassisted manual lifts to items that weigh &lt; 50 lbs unless an independent ergonomic assessment identifies deviation from this guideline.</td>
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<td>• Limit repetitive (3 or more lifts within 1-hour), unassisted lifts to items that weigh &lt; 35 lbs.</td>
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<td>• Assess ergonomics of specific job tasks and recommend methods/technique modifications to lessen injury risk.</td>
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<td>• Practice and maintain good posture when standing, walking, and sitting.</td>
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<td>• Maintain good health through regular medical check-ups.</td>
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<td>• Eat a proper diet and consider participating in stretching or exercise program.</td>
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<td>• Maintain adequate sleep and relaxation.</td>
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<td>• Report all (potential) injuries immediately to project supervision or Safety/IH representative.</td>
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<td>Operating a vehicle or other equipment on a PORTS Site roadway and encountering a UF6 cylinder handler</td>
<td>• UF6 cylinder handling equipment has the right-of-way at all times.</td>
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<td>• When a UF6 cylinder handler is approaching you on a PORTS Site roadway, pull over as far as possible and stop your vehicle until the UF6 cylinder handler has safely passed by.</td>
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<td>• When following a UF6 cylinder handler on a PORTS Site roadway, maintain at least a 100-ft. distance between your vehicle and the UF6 cylinder handler.</td>
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<td>23. Injury/Illness Reporting (both on and off the job)</td>
<td>• Worsening injuries or illnesses due to delay, or failure, of report of Injuries or illnesses</td>
<td>• All injuries and potential injuries shall be reported to the individual's supervisor and the FBP Medical Group in a timely manner immediately upon discovery of the injury or illness. Supervisor should accompany the injured/ill employee to FBP Medical Services, when feasible.</td>
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| 24. Work Involving the Use of Chemicals | General Hazards - Exposure By:  
• Inhalation  
• Absorption (skin contact)  
• Ingestion | B. Upon returning to work after a non-occupational injury or illness, immediately report to your supervisor for the determination as to whether or not evaluation by the FBP-provided Occupational Medical Doctor is required.  
• See page 1, Description of Work, NOTE 2.  
• Obtain, read, and understand the Material Safety Data Sheet (MSDS) and be aware of the hazards listed.  
• Substitute with a less hazardous (toxic) alternative material, if possible.  
• Contact Industrial Hygiene (IH) personnel to evaluate the need for chemical monitoring and/or sampling. Follow the recommendations provided by IH based on the monitoring/sampling results.  
• Chemical Exposure Action Levels will be determined based on the hazards present.  
• Follow the work practices and specific training on how to work safely with these materials at your worksite.  
• Be aware of the typical symptoms of an overexposure and appropriate first aid.  
• Ensure that engineering controls (e.g., ventilation) are operating. Closed handling systems may be necessary to prevent the release of the material (dust, mist, vapor, gas) into the workplace.  
• Report ventilation failures, leaks, or spills to your Supervisor immediately.  
• Store in labeled containers recommended by the manufacturer, protect against damage when handling, and keep closed at all times when not in use.  
• Store in dry, cool areas out of direct sunlight or as directed by manufacturer; keep inventories as low as possible.  
• Inspect containers for damage or leaks before handling; never use containers that appear to be swollen.  
• Avoid skin contact – wear chemical-resistant gloves, apron, boots, coveralls, eyewear, and other clothing as recommended in the MSDS and/or by your Occupational Safety & Health Professional.  
• Wear a respirator to protect lungs, as necessary.  
• Know in advance where the closest eyewash/safety shower station is located and how to use it.  
• Protect eyewash/safety shower equipment from temperature extremes (i.e., direct sunlight or freezing conditions).  
• If required, flush contaminated eyes or skin with water for at least 15-minutes, sometimes longer, in case of accidental contact. Call immediately for medical assistance.  
• Know measures to take to clean up spills, and steps to take in an emergency; maintain spill control equipment at the work site.  
• Do not reuse empty containers – the residue may be hazardous.  
• Handle and dispose of toxic wastes safely. |
| 25. Work in Areas with Radiological Contamination/Other | • Personnel exposure to radiological hazards  
• Personnel, equipment/property. | • Obey postings and comply with Radiation Work Permit (RWP).  
• Implement As Low As Reasonably Achievable (ALARA) practices at all times. |
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<td>Radiological Hazards</td>
<td>or environmental contamination • Spread of contamination</td>
<td>• Follow directions given by project Radiation Control Technicians (RCTs). • Suspend work if any suspect or unknown radiological hazard is discovered and notify project RCTs for direction. • Report all potential contamination events to project RCTs and Supervisor(s).</td>
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<tr>
<td>26. Noise Exposure Activities</td>
<td>• Personnel exposure to hazardous noise levels • Working in defined CAAS areas when noise levels exceed 85 dBA time-weighted average (TWA)</td>
<td>• Engineer out excessive noise, including dampening or shielding, if feasible. • Personnel shall complete FBP “Hearing Conservation” training as required. • Personnel shall maintain as short exposures to noise as possible. • FBP OS&amp;H support personnel can monitor for hazardous noise levels. • Hearing protection will be required in work zones above 85 dBA based upon a Time Weighted Average (TWA) sample. • Areas above 85 dBA shall be posted as requiring hearing PPE; other areas may be identified by project OS&amp;H personnel. • Personnel working within an area covered by a Criticality Accident Alarm System (CAAS) shall meet the requirements of the specific building CAAS Limited Condition of Operation (LCO) requirements regarding noise level controls for alarm response.</td>
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<td>27. Activities With the Potential for Fire</td>
<td>• Fire (burn Injuries, smoke Inhalation) • Pressurized (bulging) container • Environmental Insult (due to toxic smoke and other by-products of fire) • Equipment damage • Property damage</td>
<td>• The requirements of procedure FBP-FP-PRO-00005, &quot;Combustible Control Program&quot; shall be followed. • When working around or within a CAT 2 facility, the requirements of FBP-SM-PRO-00023, &quot;Combustible Material Control Requirements for Non-FUEF Category 2 Facilities at PORTS&quot; shall be followed. • Any hot work conducted, as defined, must meet the requirements of procedure FBP-FP-PRO-00072, &quot;Welding, Burning, and Hot Work.&quot; • Brief all project workers to the locations of the fire extinguishers, manual fire alarm pull stations, and other means of reporting emergencies in their work areas. • Brief all project workers to the emergency evacuation routes, designated assembly points, and applicable additional information required for responding to fire or other emergencies in the project work area. • Ensure access to each of the following is maintained clear and unobstructed at all times: A. Fire Department systems (e.g., fire hydrants, fire extinguishers, fire department sprinkler system connection points, etc.), B. Emergency response equipment, and C. Emergency means of egress. • Maintain a minimum of two (2) different emergency access locations into the project work area for responding site emergency response equipment. • ALL fire detection/suppression impairments SHALL BE coordinated through the FBP Fire Protection Engineer Group and the FBP Fire Services Group.</td>
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| 28. Refueling of Combustion-Powered Tools and Equipment (e.g., portable equipment, vehicles, and construction-type heavy equipment) | • Fire (burn injuries, smoke inhalation)  
• Explosion  
• Spontaneous Combustion  
• Environmental Insult (fuel spills)  
• Equipment and Property Damage | • No refueling activities shall occur inside any building or structure without prior, specific Fire Department approval.  
• Ensure that at least one fire extinguisher (minimum of 10-lb ABC) is present and available at the point of refueling.  
• Ensure spill containment equipment is available for use as needed during the refueling activity.  
• Allow equipment being refueled an adequate time to cool down prior to starting refueling activities. NOTE: the cool down time will vary due to the different types of equipment utilized at the project and/or environmental conditions (e.g., temperature).  
• During refueling operations, ensure that all sources of ignition have been eliminated or controlled. Examples of ignition sources include open flames, lightning, smoking, cutting or welding, hot surfaces, frictional heat, sparks (static, mechanical, and electrical), chemical/physical reactions, and radiant heat. These ignition sources shall be controlled within 50-feet (in all directions) of refueling activities.  
• Ensure that the vehicle/equipment being refueled is turned off during refueling operations.  
• When utilizing safety cans, ensure safety cans have UL, FM, or other recognized approval before initial use.  
• Ensure safety can contents are labeled.  

- The FBP Fire Services Group is responsible for the de-energizing and re-energizing of all PORTS site fire detection/suppression systems.
- When plastic sheeting is required for use (i.e., for lining shipping containers, creating spill containment, creating enclosures, etc.), the plastic shall be fire retardant-rated as per NFPA 701 and approved for use by the FBP Fire Protection Group. Plastic shall have manufacturer’s marking on it so that the plastic can be visually identified as being fire retardant.
- Combustible waste, including used anti-c clothing, shall be placed in non-combustible containers equipped with lids that are approved by the FBP Fire Protection Engineering Group while being accumulated in the work area (Note: poly drums and like containers are not approved for use as combustible waste containers).
- Flammable/combustible liquid storage cabinet locations shall be approved by the FBP Fire Protection Engineering Group prior to their initial usage.
- Flammable/combustible refueling locations shall be approved by the FBP Fire Protection Engineering Group prior to their initial usage.
- Contact the FBP Fire Protection Engineering Group for direction regarding the use and storage of wooden or poly (plastic) pallets. NOTE: Each project area needs to be evaluated individually by the FBP Fire Protection Engineer for direction on the quantity, use, and storage of pallets.
- DO NOT block fire doors in the open position.
- For indoor work areas, all combustible (Class A material such as PPE) brought into the work area shall be stored on metal shelving or in other FBP Fire Protection Engineering Group-approved cabinet.
- Housekeeping shall be maintained at all times. All packaging material, trash, and other combustible debris shall be removed in a timely manner at the end of each work shift, or more frequently as required to prevent the build-up of combustible materials.
### Work Activity, Task, or Job Step/Section

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| • Ensure safety cans have a spring-closing lid and spout cover, and flame-arresting screen. | • When transporting safety cans in the beds of pick-up trucks, gators, or other vehicles, the safety cans shall be secured from accidental movement.  
• Materials susceptible to spontaneous ignition, such as oily rags, paint thinner, soiled rags, etc., shall be stored in Underwriters Laboratory (UL) or Factory Mutual (FM) listed storage container that has been approved by the FBP Fire Protection Engineer and shall be disposed of at the end of each work shift.  
• Wear protective chemical goggles (Approved Equivalent:  Face Shield with safety glasses), as minimum protection, when working with small quantities of fuel that pose a splash hazard that could damage the eye.  
• Wear fuel-resistant gloves when refueling from or refilling safety cans.  
• Utilize appropriate sized funnel, as needed, when refueling from safety cans to prevent spillage.  
• Fill tank of vehicle/equipment/safety can to 90% full level when refueling.  
• When not in use, the safety cans shall be returned to their approved storage cabinet/area.  |
| • Fire (burns injuries)  
• Lung cancer, emphysema, chronic obstructive pulmonary disease, and other respiratory illnesses  
• Carbon monoxide poisoning  
• Increased exposure to heavy metal poisoning | • The use of smoking materials such as cigars, cigarettes, pipes, etc. shall not be permitted:  
A. While actively performing work.  
B. In locations with flammables, combustibles, or vegetation.  
C. During refueling or near fuel storage areas.  
D. Outside of defined, posted, “Designated Smoking Areas”.  
E. While operating heavy equipment or in government owned/leased vehicles.  
F. In government owned/leased buildings, vehicles, office/break trailers, etc.  
• Smoking is permitted in a designated area approved by FBP Safety/IH, FBP Fire Protection Engineering Group, or FBP Fire Services Group that:  
1. Is posted as a “Smoking Area”  
2. Has an approved butt/end receptacle  
3. Has a defined boundary.  |
| • Trip/Slip/Fall (due to uneven terrain conditions and adverse weather conditions)  
• Poor housekeeping | • Prior to start of work activities walk-down involved work areas to identify potential hazards that could result in trips, slips, or falls. Correct items found or barricade hazards. Brief personnel to the hazards prior to starting activities.  
• Clear any snow or ice accumulation from work areas prior to starting work activities in these areas.  
• It is recommended that safety-toed work boots with ankle protection be utilized to reduce the potential for an ankle-type injury.  
• Ensure proper housekeeping to reduce slip, trip, and fall hazards.  |
## Job Hazard Analysis

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<th>Potential Hazard(s)</th>
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</thead>
</table>
| • Struck By (delivery trucks/construction equipment)  
• Electrical Shock/Electrocution (due to striking energized overhead wires) | • Personnel shall be situationally-aware of their surroundings, and especially moving vehicles/equipment, at all times they are within the defined project area  
• At least one Spotter(s) shall be utilized in accordance with the ‘Spotter’ section of this JHA.  
• The spotter should be positioned in front of the truck being dumped, when possible, or outside the potential tip-over zone prior to signaling the truck driver to dump his load.  
• Trucks shall not dump their load until signaled by the spotter.  
• OS&H-approved high visibility safety vests or shirts, safety glasses with rigid side-shields, safety toed-boots, and hard hats shall be utilized by all personnel within 30-feet of in-use vehicles or equipment within the defined project area.  
• Ground personnel shall position themselves outside the potential tip-over zone when trucks are dumping their loads. The tip-over zone shall be considered as the area within one and a half times the height (in fully raised position) of the elevated bed or the highest point of the truck being dumped.  
• Prior to signaling the truck to dump, the spotter shall verify that the truck is on stable, level ground. Trucks shall not be dumped on unstable, soft, or uneven ground.  
• Prior to dumping of any load, verify that any overhead wires are a minimum of 10-feet away from the truck being dumped at all times during the dumping activity. | NOTE: Additional clearance may be required dependent on the voltage of the wires. Contact Project OS&H personnel for guidance. |

### 31. Installing Site Controls:
- Silt Fencing  
- Project Perimeter Area Barricades  
- Project Signage

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| • Striking Buried Utilities (installing site controls including silt and construction fencing, T-posts, etc.)  
• Pinch Points (smashed finger/hand/arm)  
• Sharp Edges (finger, hand, arm injuries during fence and sign installation)  
• Struck By (finger, hand, arm injuries during fence and sign installation)  
• Excessive Noise [personnel exposure to greater than 85 dBA time-weighted average (TWA)]  
• Uncontrolled Whipping Air Hose | • See page 1, Description of Work, NOTE 2.  
• An FBP Penetration Permit is required prior to driving any object greater than 12-inches into the ground or 3-inches into PORTS Site roadways. Follow all requirements of any issued penetration permit.  
• Prior to driving a post, stake, or like object into the ground, it can be marked at a distance of 11-inches from the end to be placed into the ground. DO NOT drive the object into the ground greater than the 11-inch mark.  
• When installing “T” posts, utilize a pneumatic or a manual post driver. DO NOT drive “T” posts with any type of manual hammer.  
• When utilizing manual post drivers, DO NOT lift the post driver completely above the top of the post being driven into the ground. Be aware of the potential pinch point between any part of the post driver and the post at all times to avoid pinch-type injuries to the fingers, hands, and upper extremities.  
• Leather work gloves shall be utilized during fence and sign installation.  
• Prior to utilizing a pneumatic post driver have the project Safety/IH representative conduct noise level monitoring for the post driver and the air compressor. Double hearing PPE may be required based on noise level survey results.  
• Be aware of placement of the barricades or other control measures so as not to block access to fire hydrants or ingress of fire department emergency equipment response routes; contact FBP Fire Services Group, as necessary, for direction. |
# Job Hazard Analysis

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| • Inhalation of airborne dust | • All airline connections shall be secured by safety clips, approved whip control straps, or other approved means to prevent injury due to a whipping hose.  
• Struck By (moving vehicles/equipment in poor visibility conditions)  
• Slick and/or Muddy Conditions (caused by over-use of dust control water)  
• Non-trained personnel operating fire hydrants |  
| 32. Dust Control Activities |  
• All project personnel (e.g., Project Workers, Safety, IH, RCTs, Project Management, etc.) shall have the authority to suspend work when excessive dust is being generated at the project.  
• All work activities shall be paused or stopped until the dust has been controlled (e.g., by application of water, slowing vehicle speeds down, etc.).  
• Personnel should be aware that the application of excessive amounts of water can create muddy and slippery conditions that could result in fall-type injuries and/or vehicles and equipment sliding off the designated roadway.  
• Ground personnel should avoid walking through muddy or over-watered areas located within the project area.  
• Project management shall coordinate the use of fire hydrants as a water supply through the FBP Fire Services Group. Only FBP Fire Services Group personnel (ext. 5909) shall authorize turning on or off any fire hydrant being utilized. |  
| 33. Applying Herbicide and Pesticide |  
• Exposure to herbicide or pesticide chemicals  
• Exposure to hazards created by other on-going activities in the work area |  
• See page 1, Description of Work, NOTE 2.  
• Provide and/or review material safety data sheet (MSDS) information for the chemicals being utilized.  
• Utilize PPE specified in the MSDS information.  
• Notify the Supervisor or Facility Manager of the affected area prior to applying the chemical.  
• Receive a pre-job briefing, as necessary, for the involved work area.  
• Unauthorized personnel shall remain clear of the area being treated until the application is completed and the area is released by the vendor and/or supervisor. |  
| 34. Shredding Activities |  
• Excessive Noise (personnel exposure to noise levels greater than 85 dBA time-weighted average (TWA))  
• Exposure to noise levels greater than 85 dBA TWA when working within a CAAS Area  
• Exposure to hazards created by other on-going activities in the work area |  
• See page 1, Description of Work, NOTE 2.  
• Safety/IH shall monitor noise levels and establish the 85 dBA TWA boundary.  
• Signs shall be posted indicating that hearing PPE is required within the defined boundary.  
• Personnel should heed specific building Limited Condition of Operation (LCO) requirements regarding noise levels and CAAS alarm response. A dedicated person shall remain outside the 85 dBA boundary and shall alert personnel inside the 85dBA in the event of a CAAS Alarm.  
• Personnel shall receive a pre-job briefing, as necessary, for the work area. |
## Job Hazard Analysis

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| 35. Extracting/Towing Stuck or Disabled Heavy Equipment and Vehicles | Uncontrolled Energy Release (due to sudden breakage of pulling equipment resulting in):  
- Struck By (personnel injury)  
- Property damage  
- Equipment damage | • CHAINS ARE PROHIBITED from use for all recovery, pulling, extracting, or towing of heavy equipment, vehicles, or other mobile equipment.  
• A written “Pull Plan” is required to be prepared prior to the recovery, pulling, extracting, or towing of any stuck or disabled piece of heavy equipment, vehicle, or other mobile equipment.  
• At a minimum, the “Pull Plan” SHALL include the following information:  
  A. The known total weight of the load to be pulled, towed, or extracted (this includes the weight of the vehicle, any load on the vehicle, and all rigging-type equipment that will be utilized),  
  B. The planned rigging configuration,  
  C. The rated capacities of each component to be utilized in the rigging configuration, and  
  D. The approving signature of the FBP Hoist and Rigging Management Representative (ext. 3921)  
• ONLY synthetic slings are permitted as the primary towing or pulling component of the rigging configuration. On a case-by-case basis, the FBP Hoist and Rigging Management Representative may approve the use of wire rope.  
• All rigging components SHALL be approved by the FBP Hoist and Rigging Management Representative prior to use.  
• The connection of all rigging components shall be overseen by a qualified FBP Hoist and Rigging Competent Person.  
• After taking up the slack on the rigging equipment components, ALL ground personnel shall position themselves such that they are not within the potential flying projectile 'DANGER' zone in the event that a piece of rigging equipment fails. This zone will vary case-by-case and, therefore, shall be determined during the preparation of every “Pull Plan.” |
| 36. Confined Space Work | • Untrained personnel entering into a confined space  
• Exposure to or potential exposure to:  
  A. a hazardous atmosphere  
  B. an engulfment hazard  
  C. a space with an internal configuration such that an entrant could be trapped or asphyxiated by inward converting walls or by a floor that slopes downward and tapers to a smaller cross-section  
  D. an area that contains any other recognized health or safety hazard | • See page 1, Description of Work, NOTE 2.  
• A confined space means a space that:  
  1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and  
  2. Has limited or restricted means for entry or exit (i.e., tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and  
  3. Is not designed for continuous employee occupancy.  
• The requirements of procedure FBP-IH-PRO-00049, “Confined Space Program” shall be followed.  
• Personnel who are assigned functional responsibilities for confined space activities (i.e., Attendants, Entrants, or Supervisors) shall complete the required FBP Confined Space training module(s) BEFORE assignment to confined space duties and/or when there is a change to assigned duties requiring confined space entry or work.  
• Known permit required confined spaces at the PORTS Site shall be posted as “DANGER – PERMIT REQUIRED CONFINED SPACE – DO NOT ENTER”  
• Prior to entry into any confined space or potential confined space, contact project OS&H support personnel to conduct an evaluation of the area. Items that should be evaluated include (but are not limited to): |
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| A. Presence of hazardous atmospheres,  
B. Presence of engulfment hazards,  
C. Need for Lockout/Tagout, air gapping, installation of blank flanges, ease of rescuing, etc.  
• Additional requirements of the “Permit Required Confined Space” permit or the “Non-Permit Required Confined Space” evaluation form shall be followed. |

37. Moving and Transporting Beneath Overhead Obstructions

| Electric Shock/Electrocution  
Falling Objects  
Struck By/Struck Against  
Damage to Equipment/Infrastructure/Facilities | • Measure height to overhead obstructions at their lowest point to establish clearances against equipment/vehicles traveling beneath. IF adequate clearance cannot be assured, THEN the obstruction must be flagged.  
• Measurements to overhead obstructions, particularly utility lines, are to be conducted using remote measurement (e.g., sonic) methods, whenever possible.  
• The use of high profile heavy construction equipment near overhead lines or obstructions may result in an unsafe condition.  
• Use a dedicated spotter when moving heavy construction equipment near or under overhead lines or obstructions with equipment capable of entering required clearance limitations or contacting an obstruction. |

38. Housekeeping

| Nuclear Criticality | • Perform housekeeping activities in fissile control area, as required in specific NCSAs. |
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| Fire                | • Facility management shall provide general oversight of housekeeping in each area/facility, including provision for scheduled janitorial, maintenance, and other, services, as required.  
• Supervision shall act as liaison with service or tenant group conducting activities in an area/facility, and make routine housekeeping assignments, as directed; initiate maintenance work requests; and direct or request any specific cleaning needs.  
• Adhere to the following practices as described in procedure FBP-OS-PRO-00041, "Housekeeping":  
  A. Place sanitary trash in proper containers.  
  B. Place non-sanitary trash/waste in approved storage containers and/or locations.  
  C. Report oil, water, and chemical spills immediately to supervision. IF spills cannot be cleaned up immediately, THEN ensure they are contained and barricaded/posted until response personnel can arrive.  
  D. Clean up oil spills as soon as possible.  
  WARNING: Oil leaked from lube-oil systems and/or ventilation motor exhaust duct gaskets may contain polychlorinated biphenyls (PCBs). These leaks should be immediately reported to the Supervisor-in-charge and the Facility Manager for appropriate resolution.  
  1. IF small oil leaks cannot be repaired immediately, THEN ensure they are covered with oil absorbent pads.  
  2. Locate and report the source of oil leaks to the Supervisor-in-charge and the Facility Manager.  
  E. In all operating areas, remove all debris, properly store unused equipment, and maintain all operating panels in a clean condition.  
  F. Maintain Area Control Room panels dust-free; wipe oil lines; clean floor areas under supply fans and other such equipment.  
  G. Perform post-maintenance clean-up efforts according to job-specific procedure requirements, or as directed by Maintenance, Supervisor, or Facility Manager.  
  H. Provide safe and orderly storage facilities and containers for all equipment.  
  J. Return all portable equipment (e.g., hand/power tools) to their proper storage location when not in use.  
  K. Keep radioactive material and hazardous material in special designated containers/areas. |
| Slip/Trip/Fall       |                   |
| 39. Office/Administrative Activities | Electrical Shock  
Electrocution | • When working around electrical/electronic equipment, keep drinks and other liquids capped and/or at a safe distance from the equipment; observe posted prohibitions against use of such items in certain areas. |
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| Strike Against/Struck By               | • Be careful approaching, and do not stand behind, closed doors, especially those with no window.  
• Beware of cross-traffic when approaching aisleway intersections, and in tight spaces, to avoid colliding with others.  
• Secure items which could fall from on top of bookcases, file/storage cabinets, tables, and other furniture/locations.  
• When not in use, keep desk and file drawers closed. |                                                                                                                                                                                                                 |
| Fire                                   | • Address and eliminate housekeeping hazards in a timely manner.  
• Do NOT run cables, hoses, wires, etc. across aisles or walkways unless protected by an approved safety protective device designed for that purpose.  
• Keep desks, office supplies, cleaning supplies, storage cabinets, and storage areas in a clean and orderly manner at all times.  
• Inspect chairs, and like furniture, on a frequent basis to ensure proper integrity, function, and stability.  If damaged, or likely to present a fall hazard, tag out the item immediately for repair or replacement.  
• Use only approved step stools and inspect prior to use each time.  If damaged, or likely to present a fall hazard, tag out the item immediately for repair or replacement.  
• Assigned personnel shall inspect all microwaves ovens, refrigerators, convection ovens and stoves in your facility to ensure that interior and exterior surfaces of equipment are clean and properly maintained, as applicable.  
• The use of portable heaters is not authorized in the X-151, X-152 and X-157 Trailer complex areas.  The use of these units may overload the circuits in the trailers.  
CAUTION:  No portable heater can be used in spaces where such heaters are permitted without first receiving approval with the respective facility manager.  
• Have situational awareness when in a stairwell.  Always stay to the right, as you would in any pedestrian traffic route, hold the handrail with one hand and keep the other hand free or positioned to assist with balance.  Do not run or take steps more than one at a time, and be aware of others behind, in front of, and passing you. |                                                                                                                                                                                                                 |
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| Overexertion                            | Sprain/Strain       | • When changing watercooler water bottles:  
  > Obtain help if weight of full water bottle is too great to handle  
  > Plan out ahead of time the manner in which bottle will be lifted and set in place  
  > Get a firm, secure grip on both sides, or the bottom and side, of the bottle before lifting  
  > Lift with the bottle as close to your body as possible, keeping back straight while lifting with legs  
  > Ensure that bottle is fully seated before letting go. |
## Job Hazard Analysis Approval

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<tbody>
<tr>
<td>Kevin O'Day</td>
<td>Electronic Approval</td>
<td>OS&amp;H Professional</td>
<td>7/24/2013</td>
</tr>
<tr>
<td>Joe Uptergrove</td>
<td>Electronic Approval</td>
<td>Operations Program Manager</td>
<td>7/26/2013</td>
</tr>
<tr>
<td>Jeanne Webster</td>
<td>Electronic Approval</td>
<td>USW Safety Representative</td>
<td>7/29/2013</td>
</tr>
<tr>
<td>Dwight Lamb</td>
<td>Electronic Approval</td>
<td>Facility Manager</td>
<td>7/29/2013</td>
</tr>
<tr>
<td>Elise Allison</td>
<td>Electronic Approval</td>
<td>Project Manager</td>
<td>7/29/2013</td>
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