



## **UCOR Subcontractor Safety Manual, Oak Ridge, Tennessee**

This document is approved for public  
release per review by:  
David Lannom

3/24/20

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UCOR Classification &  
Information Control Office

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Date



**UCOR-5357**

**UCOR Subcontractor Safety Manual,  
Oak Ridge, Tennessee**

Date Issued—March 2020

Prepared for the  
U.S. Department of Energy  
Oak Ridge Office of Environmental Management

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## APPROVALS

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	March 2020

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## REVISION LOG

Revision number	Date	Description of changes	Sections or pages affected
0	March 2020	Initial release.	All

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# UCOR Subcontractor Safety Manual

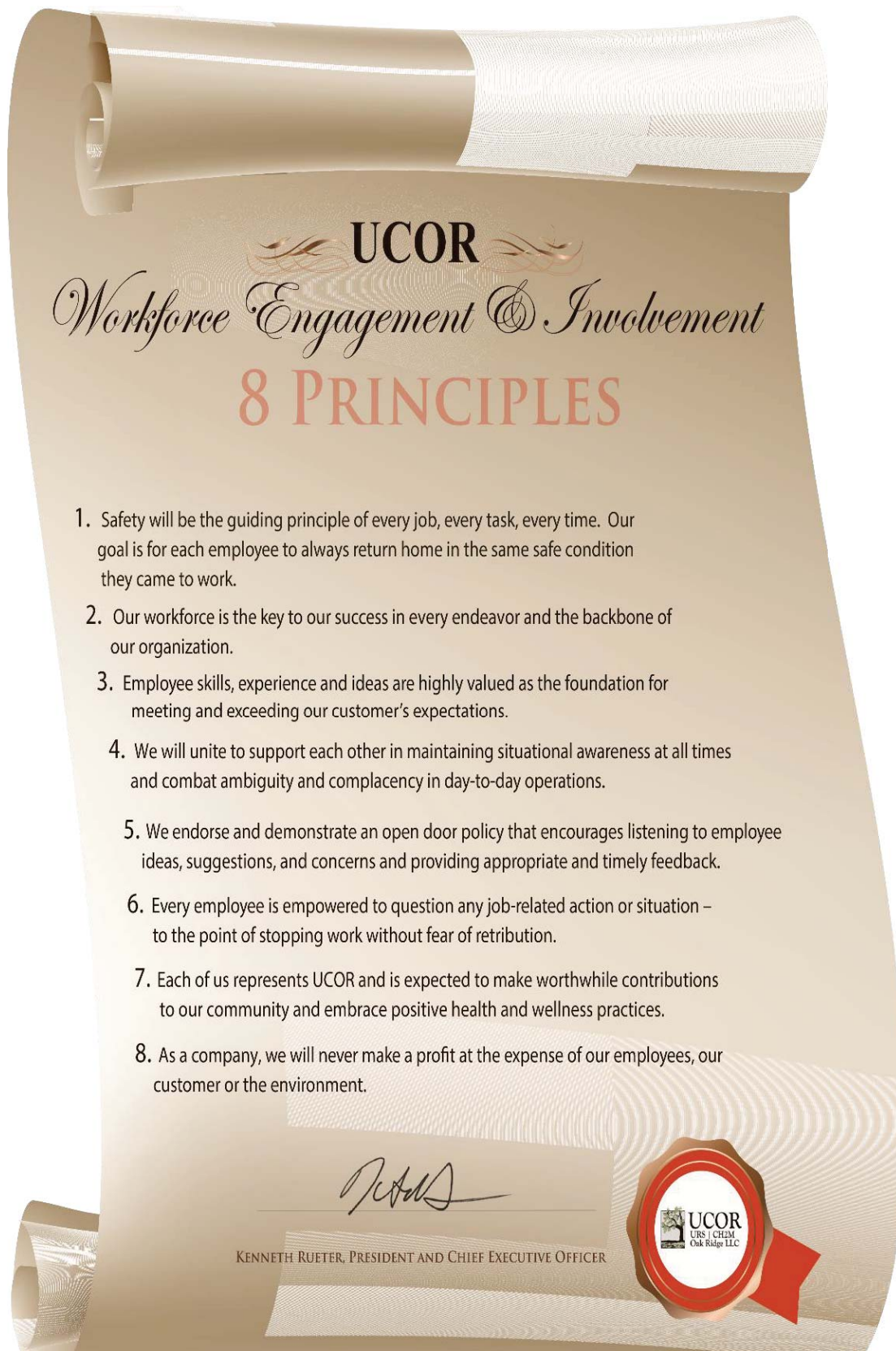
April 2020



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## Safety Conscious Work Environment Policy Statement

January 2020

This policy establishes the commitment of the U.S. Department of Energy Oak Ridge Office of Environmental Management (OREM) and UCOR to foster and maintain a safety conscious work environment (SCWE) in all facility and for all work. Safety includes protecting workers, the public, and the environment. This policy applies to all employees and contractors and is based on the following principles:

- Safety is a prerequisite for all work. Our expectation is that each employee goes home in the same condition in which he or she came to work. Our goal is zero injuries.
- All employees are encouraged and expected to promptly report all injuries, illnesses, and environmental incidents.
- All employees are encouraged and expected to understand the impact of personal choices and personal conditions on being mission ready and expected to come to work each day, prepared, ready and able (physically, mentally, emotionally) to complete their job tasks safely.
- All employees are encouraged and expected to have a questioning attitude and stop work if they feel a job cannot be done safely or the environment is threatened.
- All members of the OREM and UCOR leadership team, up to and including the OREM Manager and the UCOR President and Chief Executive Officer, have an open door policy, especially pertaining to safety.
- Employees have, and are encouraged and expected to use, multiple venues to express safety concerns. These include, but are not limited to, their management chain and Employee Concerns.
- Employee involvement is the cornerstone of our safety culture and is essential to the successful implementation of the Integrated Safety Management System, Environmental Management System, Nuclear Safety, the Voluntary Protection Program, and other Safety System and Services program elements.

Employees are encouraged to raise safety issues and concerns without fear of reprisal. The OREM/UCOR leadership team will address and resolve issues and concerns in a timely manner while exhibiting behaviors that foster employee confidence to raise concerns.

  
 Ken Rueter  
 President and Chief Executive Officer

  
 Jay Mullis  
 Manager, DOE Oak Ridge  
 Office of Environmental Management

## WHAT IS THE Voluntary Protection Program?



The purpose of the DOE Voluntary Protection Program (VPP) is to recognize contractors and their employees who have an excellent safety and health program that is backed by a stellar safety culture.

VPP is based on the following tenets: Management Leadership, Employee Involvement, Worksite Analysis, Hazard Prevention and Control, and Safety and Health Training.

Employee involvement is the cornerstone of VPP. VPP identifies opportunities for improvement and empowers employees to go beyond compliance. The primary benefit of VPP is enhancing UCOR's safety culture and ensuring that all employees go home safe and uninjured each day.



Be a VPP Star  
Performer on  
Team UCOR!



### *VPP Bill of Rights*

As UCOR employees and subcontractors, we have the right and responsibility to:

- ★ Participate in the identification and resolution of safety and health concerns.
- ★ Report and/or suspend unsafe acts and conditions without fear of reprisal.
- ★ Be involved in and/or view the results of accident and incident investigations.
- ★ Be involved in creating a workplace that is free of injury and illness by actively caring for our own safety and the safety of our coworkers.



# Integrated Safety Management System



## Guiding Principles

1. Line Management Responsibility for Safety
2. Clear Roles and Responsibilities
3. Competence Commensurate with Responsibility
4. Balanced Priorities
5. Identification of Safety Standards and Requirements
6. Hazard Control Tailored to Work Being Performed
7. Operations Authorization
8. Worker Involvement





## MISSION READY EMPLOYEES

### are Prepared, Ready, & Able

(physically, mentally, emotionally) to complete their job tasks today.

**GOAL: zero injuries and illnesses on the job**

#### Physical Readiness



Fully able to do what is required physically (e.g., hear and see clearly, lift what you need to, manipulate equipment/ computers that you have to use).



Making accommodations for the environment you will be working in (e.g., hat and sunscreen for heat, gloves and warm clothes for cold, rain gear, etc.).



Diet impacts you physically in a number of ways. A healthy diet provides energy you need to work at your best, helps you sleep better, and leads to longevity.



Adequate hydration is critical, especially if you work in the sun. Dehydration can cause you to feel tired, irritable, confused, and worse.



Stretched: when you are well stretched, your joints and muscles can work at top efficiency. Stretching enhances your flexibility and range of motion, reduces tension, improves your posture, and decreases risk of muscle injury.

#### Mental & Emotional Readiness



Your ability to concentrate on the task at hand and block out distractions. When stressful things happen, your focus can be affected. Tell your supervisor about that stress.



Stress affects you physically, mentally, and emotionally. Learn to recognize your stressors and ways to cope, like deep breathing, writing things down, and letting go of little things that overwhelm you.



Being present and fully engaged in what you are doing, being aware of the situation around you, and being able to control your reactions.



Having the skills and training to successfully do the task in front of you, whether that's operating heavy machinery, planning budgets, overseeing programs, or any of the other things we do at UCOR.

#### Overall Readiness



Getting plenty of sleep so that you are well-rested supports you in every way. The average adult needs 7 to 9 hours of sleep each night. When you don't get enough sleep, you can experience memory problems, depression, low energy, a weakened immune system, and much more.

## I. General Safety Considerations

### 1. KEY DOCUMENTS & RESOURCES

- *Worker Safety and Health Program*, UCOR PPD-EH-1745
- *General Safety Requirements*, UCOR PROC-EH-2000
- 1745 Applicability Matrix, Exhibit G, Attachment A
- *Safety and Health Handbook, Oak Ridge, Tennessee*, UCOR-4087
- Project Training Matrix
- UCOR Exhibit L Procedures
- UCOR Exhibit I Submittals—minimum
  - Initial and as needed chemical SDS
  - Initial and monthly chemical (HMIS) inventory Form
  - Monthly—Hours & Injury/Illness Report Form
- <https://info.ettp.energy.gov/esh/index.html>

### 2. U.S. DEPARTMENT OF ENERGY

- 10 *CFR* 851, *Worker Safety & Health Program*
- <https://www.energy.gov/ehss/worker-safety-and-health-program-10-cfr-851doe-o-4401b>

### 3. SAFETY CULTURE

- Integrated Safety Management System (ISMS)
- UCOR is a DOE Voluntary Protection Program (DOE-VPP) site
- Safety Is A Prerequisite To Everything We Do
- Zero Accidents IS Possible
- Stop Work Authority
- Safety Conscious Work Environment (SCWE)
- Employee Concerns Program
- Employee Engagement
  - Local Safety Improvement Team (LSIT)
  - Questioning Attitude Program – Eye Question

### 4. COMMUNICATION

- Know your location address and emergency contact number
- Develop a project contact list and issue lanyard cards



- Post a notification list
- Contact number for site closures and related info (Mass Notification System)
  - <http://intranet.ettp.gov/forms/massnotify.html>

## 5. BULLETIN BOARD POSTINGS

- <https://www.dol.gov/general/topics/posters>
- <https://www.tn.gov/workforce/general-resources/major-publications0/major-publications-redirect/posters-redirect/required-posters.html>
- It's The Law
- Employee Concerns

Federal Acquisition Regulation		
Exceeds \$10K		
52.222-26	Equal Opportunity	<a href="https://www.dol.gov/general/topics/posters">https://www.dol.gov/general/topics/posters</a>
-27	Affirmative Action Requirements for Construction	
-36	Affirmative Action for Workers With Disabilities	
-40	Notification of Employee Rights Under the National Labor Relations Act	<a href="https://www.dol.gov/olms/regs/compliance/EO13496.htm">https://www.dol.gov/olms/regs/compliance/EO13496.htm</a>

- UCOR Safety Info, etc.
  - UCOR Principles
  - SCWE
  - ACGIH Lifting Poster
  - Peer Check
  - Hand Rails
  - Slip Trip Fall
  - Questioning Attitude Program – Eye Question

## 6. OCCUPATIONAL MEDICINE

- 10 CFR 851, Appendix A, Sect. 8, *Worker Safety and Health Functional Areas*, “Occupational Medicine”
- Pre-employment Fit-for-Duty

- DOE required for individuals working on DOE project(s) for 30 days or more in calendar year
- *Returning to Work Safely*, POL-UCOR-308
  - Occupational injuries
    - Initial evaluation must be performed by UCOR Health Services (per Workers Comp Wrap Up Coverage for DOE Contract)
    - Final evaluation for return-to-work status and limitations
  - Surgery – now includes outpatient
  - Illness involving absence from work for 40 hours or more
- Surveillance Programs
  - Hearing Conservation
  - Respirator Wearer
  - HAZWOPER—respirator use or potential exposure 30 days or more
  - Crane and Mobile Equipment
  - Silica, asbestos, lead, beryllium, heavy metals, etc.
  - Biological monitoring

## **7. EVENT NOTIFICATION**

- Report any of the following to the Subcontract Technical Representative (STR)
- Potential occupational injury/illness
- Near misses
- Upset conditions
- Fires, electrical, etc.
- Equipment and chemical leaks, spills, etc. (no matter the size)
- STR ensures UCOR Safety, Facility Manager (FM), and Project Manager (PM) are notified

## **8. INJURY/ILLNESS & EVENT REPORTING (UCOR PROC-EH-2001)**

- Report all potential occupational injuries, illnesses, electrical shocks, and near misses to the STR
- Secure the scene
- Supervisor and/or safety shall transport injured employee (including insect bites/stings and first aids)
- All injuries and first aids require initial medical evaluation and review by UCOR Medical (field first aid alone is not acceptable)
- All electrical shocks (excluding static with no power source) require medical evaluation

- Assist UCOR Safety with Accident/Incident Report, UCOR Form-411 (required for DOE reporting)
  - UCOR has ultimate responsibility for classifying an injury into the DOE CAIRS per the prime contract with DOE in DOE Order (O) 231.1B, *Environment, Safety and Health Reporting*
  - Subcontractor is responsible for classification and documenting on their OSHA 300A, Summary of Work-related Injuries and Illnesses, and Log
  - Subcontractor Supervisor signs Sect. 36 of the UCOR Form-411, all other signatures are UCOR
  - Subcontractor personnel shall assist with the Work Restriction Evaluation, UCOR Form-3170
  - UCOR Health Services will treat/evaluate all potential injuries—**no service agreement required**

## **9. EMERGENCY PREPAREDNESS**

- Building/Facility Emergency Plan
- Emergency Wardens
- Assembly Points and Safe Shelters

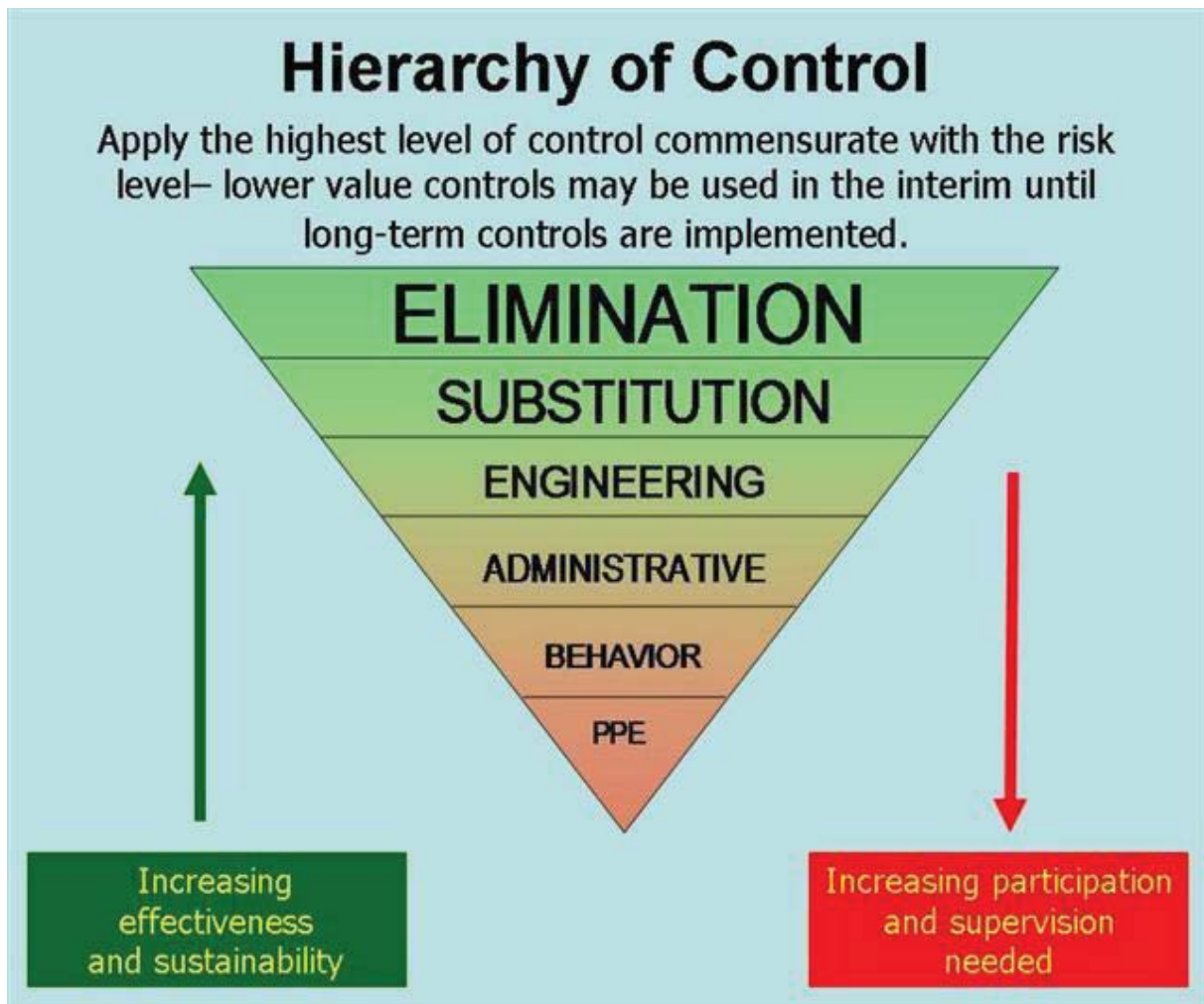
## **10. SEVERE WEATHER**

- Emergency Shelters
- Lightning and Thunder protocols
- Wind speed information
- Snow and Ice removal for safe access
- Contact for site closures

## **11. MOBILIZATION**

- Vehicles
  - Seat belts and all traffic postings
  - Parking and Access
- Sanitation
- Equipment Inbound/Outbound Inspection
- Laydown
- Office/Break Trailers Inspection/Readiness

## 12. HAZARD ANALYSIS & HIERARCHY OF CONTROLS



## 13. PERFORMING WORK & HAZARD ANALYSIS

- Confirmation to start work each day required from the STR
- Key Personnel
  - Approved Superintendent/Manager must be onsite at all times work is being performed
  - Other required key personnel (Safety Rep) must be on site unless approved by the STR
- Work Control
  - Approved work package required per UCOR PROC-FS-1001, *Integrated Work Control Program*
  - Pre-job brief and/or UCOR Safety Task Analysis Risk Reduction Talk (STARRT) card

**14. ACCIDENT PREVENTION SIGNS, BARRICADES, & OTHER POSTINGS (UCOR PROC-EH-1013)**

- Work zones shall be controlled
- Construction sign/posting with contact information and access requirements

**15. PEDESTRIAN SAFETY**

- Safe access and parking lots
- Segregation from vehicles and heavy equipment
- Illumination
- Safe walkways
- Stairs and handrails
- Slip-resistant steps, floors, etc.
- Housekeeping

**16. SAFE CUTTING TOOLS**

- Safety-engineered cutting devices
  - Concealed blade—Martor Secumax
  - Auto-retracting blade independent of release mechanism—Martor Secupro 625
  - Automatic blade guard—Olfa SK6
- Approval required to use the following:
  - Exacto, utility, carpet, or box cutter knives
  - Standard lock back knives
  - Multiuse tools like Leatherman®<sup>1</sup>
- Personal knife/tool use
  - Personal knives and tools are prohibited in the performance of work.
  - Shall not enter the work area
  - Only allowed to be kept in personal vehicle and/or with personal belongings in offices, lunchrooms, etc.
  - Only for personal use on personal time, e.g., preparing food
  - Two work-related events resulting in significant hand injuries were directly related to the use of a personal knife because the worker had it on their person in the work area.

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<sup>1</sup> Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

## II. Training and Procedures

The initial Contractor provided Training Matrix identifies the CONTRACTOR provided training that is or may potentially be applicable for this scope of work, it may not be all inclusive, and may vary based on the method of performance. SUBCONTRACTORS are responsible for demonstrating due diligence in identifying and ensuring each employee is trained to all regulatory, manufacturer, etc., requirements commensurate with their roles and responsibilities. SUBCONTRACTORS must request and be granted an equivalency or exception to obtain training from other sources. Training that CONTRACTOR does not provide will be evaluated on a case by case basis through the STR. (Reference Exhibit B SC-23 Training)

Job Performance Measures (JPMs) are required to be documented by the UCOR Training provider for the operation of all heavy equipment. Training/briefing on the use of power operated hand tools shall be performed and documented by the Subcontractor.

Per OSHA, the employer is responsible for ensuring their employees are properly trained to be qualified to perform their responsible activities and operate all forms of equipment and machinery, as follows:

### 1926.20(b)(4)

The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

Interp

**Question (1):** Are the training requirements in §1910.178(l) applicable to skid-steer loaders used for earthmoving in construction? If not, what training requirements apply?

No, however, 29 *CFR* 1926.21(b)(2) states:

The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his [or her] work environment to control or eliminate any hazards or other exposure to illness or injury.

Therefore, under §1926.21(b)(2), the employer is required to train the skid steer operators so that they can recognize and avoid unsafe conditions. As a practical matter, such training needs to be comprehensive enough to ensure that the operator is fully capable of safely handling the equipment in the type of conditions he/she will encounter at the site. The amount of training necessary to fulfill the requirement may be reduced based on the extent to which the operator has acquired the necessary knowledge and skill from prior experience (see the answer to Question 2, below).

**Question (2):** Section 1926.20(b)(4) provides that only those who are qualified through training or “experience” are allowed to operate equipment. In this context, what does “experienced” mean? If a worker has operated the equipment a number of times in the past, does that automatically mean they are “experienced” for purposes of this requirement?

**Answer:** No. Title 29 *CFR* 1926.20(b)(4) states:

The employer shall permit only those employees **qualified by** training or experience to operate equipment and machinery. [Emphasis added.]

The term “experience” in this provision is used in conjunction with the term “qualified.” Where an operator, through prior experience, has acquired the knowledge and skill necessary to safely operate the equipment, the operator may be considered “qualified by...experience” for purposes of this provision. However, a history of having operated the equipment by itself does not necessarily mean that the operator knows how to safely and competently operate the equipment. The provision requires the operator to be “qualified.” If the worker has operated the machinery in the past but has not acquired the knowledge and skills necessary to safely operate the equipment, the experience is not sufficient to make the employee “qualified.”

#### 1926.20(f)(2)

*Training.* Standards in this part requiring training on hazards and related matters, such as standards requiring that employees receive training or that the employer train employees, provide training to employees, or institute or implement a training program, impose a separate compliance duty with respect to each employee covered by the requirement. The employer must train each affected employee in the manner required by the standard, and each failure to train an employee may be considered a separate violation.

## Example Matrix

<b>Job Position</b> <small>Prep and Installation Center Shop INL 47420</small>	<small>21221</small> <b>Parkworker</b>		<b>OSHA 30-Hour Training Certificate in Construction Standards</b>		<small>31703</small> <b>Excavation Competent Person Designation (use form 2972)</b>		<small>31888</small> <b>Excavation Safety Awareness</b>	
	<b>2 Hrs CBT</b>		<b>30 Hrs never</b>		<b>N/A</b>		<b>1 Hr CR</b>	
	Issued	Expired	Issued	Expired			Issued	Expired
Site Supervisor								
ES&H Rep								
Equipment Operator								
Laborer								
Laborer								

### III. Personal Protective Equipment (PPE)

#### 1. GUIDANCE DOCUMENTS

- UCOR PROC-EH-2005, *Personal Protective Equipment*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 35–39
- OSHA 1910, *Occupational Safety and Health Standards*, and OSHA 1926, *Safety and Health Regulations for Construction*, various sections

\*While PPE is the least preferred control, challenges to hazard assessment imposed by the dynamic nature of UCOR's decontamination and demolition scope often necessitate that PPE be prescribed as additional defense-in-depth.

\*\*The preferred order for controlling hazards that cannot be substituted for or eliminated is engineered safeguards, administrative controls, and PPE. Implement controls to address additional hazards that may be introduced by the use of PPE (e.g., reduced dexterity, heat stress, and impaired vision).

#### 2. TRAINING

- Parkworker, UCOR Module 21221
- Personal Protective Equipment, UCOR Module 28392
- Spec sheets and/or user manuals readily available

#### 3. GENERAL

- Head
  - Minimum of Type 1 for falling object
  - Class E for Electrical
  - Bump caps provide minimal protection for contact with stationary objects and prohibited in areas with potential for falling objects
  - Service life is based on condition, not age alone
- Eyes & Face
  - Z87.1+
  - Face shield is secondary protection and also requires safety glasses for primary
  - Face shield for grinding, chop sawing, etc., and potential splash hazards (concrete)
  - Correct lens shade for ultraviolet radiation with welding and lasers
- Hands
  - Expectation is a glove for all hands-on work
  - Cut and puncture protection are primary concern
  - Chemical protection is addressed through the UCOR Industrial Hygiene Work Permit, Form-3061



- Consider an activity and required glove matrix or guide
- Feet
  - Safety-toed, sturdy work shoe
  - Metatarsal guards may be appropriate
  - Chainsaw activities require ASTM F1818, *Standard Specification for Foot Protection for Chainsaw Users*, Class 2 protection and ASTM F1897-14, *Standard Specification for Leg Protection for Chain Saw Users*, chaps
- Hearing
  - Attenuation/protective factor for inserts is Noise Reduction Rating (NRR)-7
  - Ear muffs with inserts increases rating by 5
- Respiratory—see UCOR PROC-IH-5151, *Respiratory Protection Program*
- Hot Work
  - Flame Resistant (FR) meeting ASTM F1449, *Standard Guide for Industrial Laundering of Flame, Thermal, and Arc Resistant Clothing*, and/or ISO 2801, *Clothing for protection against heat and flame—General recommendations for selection, care and use of protective clothing*
  - Standard welder's leather garments (such as chaps, sleeves, apron, etc.) are considered to be FR garments and meet the intent of this procedure as long as they cover all non-FR clothing
  - Both the individual performing and the fire watch
- Other
  - Traffic Flagger—minimum ANSI 107-2015, *American National Standard for High-Visibility Safety Apparel and Accessories*, Class 2 and Class 3 for low visibility situations
  - Around Heavy Equipment—ANSI Level 2
  - Electrical—see UCOR PROC-EH-2009, *Electrical Safety Program*
  - Over/near water—U.S. Coast Guard-approved life jacket or buoyant work vest

#### 4. FALL PROTECTION EQUIPMENT

- Inventory
- Documented initial and periodic by Fall Protection Equipment Inspection Competent Person
  - Most manufacturers require a minimum of annual with some every 6 months (Guardian)
  - May be more frequent based on use, conditions, etc.
- Consider a safety helmet with chin strap for fall arrest configurations

## IV. Electrical

### 1. GUIDANCE DOCUMENTS

- UCOR PROC-EH-2009, *Electrical Safety Program*
- UCOR PROC-EH-2000, *General Safety Requirements*
- UCOR PROC-EH-2002, *Hazardous Energy Control (Lockout/Tagout)*
- UCOR PROC-FO-1072, *Penetration Permitting*
- UCOR PROC-FO-3033, *Out of Commission Isolation Process for Structures, Systems, and Components*
- UCOR-4087, *Safety and Health Handbook, Oak Ridge, Tennessee*, pg. 57–61
- Institute of Electrical and Electronics Engineers (IEEE), National Fire Protection Association (NFPA), and OSHA 1910, *Occupational Safety and Health Standards*, and OSHA 1926, *Safety and Health Regulations for Construction*—various sections

### 2. TRAINING

- All – UCOR Module 29291, *Electrical Safety for the Non-Electrical Worker*
- Equipment Operators to operate electrical disconnects/breakers  $\leq 600V$ 
  - UCOR Module 31009, *Electrical Safety for Equipment Operators* (every 3 years)
- Qualified Electrical Worker (QEW) – complete the Training Position Description (TPD) for QEWs
- Subject Matter Expert (SME) approval required for training exemption and/or equivalency.

### 3. GENERAL

- Report any and all potential electrical events, shocks, etc.
- All electrical shocks (excludes static in non-powered installations) require medical evaluation
- Never cross a Limited Approach Boundary (LAB)
- Equipment operations and transit near (20 ft) overhead utility lines, UCOR PROC-EH-2009, Sect. 6.0
  - Includes personnel, tools, equipment proximity during scaffold and roofing activities
  - Requires UCOR Form-3090, *Overhead Utilities Pre-Determined Working and Transit Clearances*
- Non-NRTL requires UCOR Electrical Authority Having Jurisdiction (EAHJ) approval
- Damaged/unacceptable equipment must be tagged, controlled, and removed as soon as possible

**4. INSPECTIONS**

- Inventory of all equipment
- Initial and periodic inspection and identification process

**5. EXTENSION CORDS**

- Nationally Recognized Testing Laboratory (NRTL) listed
- Rated for Hard Service & Wet Location (i.e., marked as type SOW, SOOW, STW, STOW, STOOW, SEW, SEOW, SEOOW, SJOW, SJOOW, SJTW, SJTOW, SJTOOW, SJEW, SJEOW, OR SJEOOW)
- Protective cover required when placed through doors, windows, etc.
- Elevated when feasible
- No daisy chaining

**6. POWER TOOLS**

- NRTL listed (charging stations for battery powered)
- Double insulated for corded tools
- User manual readily available
- A tripped Ground Fault Circuit Interrupter (GFCI) can only be reset one time, QEW required for further evaluation
- Users training/briefing of tool manual—documented

**7. GFCI**

- Class A GFCI required for all portable equipment
- Permanently installed GFCI receptacles require monthly testing and labeling
- Test portable GFCIs prior to use per 3.4.7 of UCOR PROC-EH-2009

**8. LOCK OUT/TAG OUT**

- Lockout/Tagout Permit, UCOR Form-194, required except for single source
  - Red locks or red label required
  - Name and badge number
  - Subcontractor Supervisor signs Sect. 8
- Single Source see section on Single Source Lockout of UCOR PROC-EH-2002
- Affected Personnel – briefing on UCOR PROC-EH-2002
- Authorized Personnel – UCOR Module 31132, Hazardous Energy Control for Authorized Employees

- Supervisor – UCOR Module 31132 and 21142, Hazardous Energy Control for Issuing Authorities, Supervisors, and FMs
- Verification of zero energy is the most critical aspect
- Supervisor participates in UCOR Form-3418, LO/TO Walkdown Aid

## **9. AIR-GAPPED**

- Electrically removed from service by dismantling, cutting and/or disconnecting cable, removing buses, or other equivalent means of disconnecting circuitry, such that power cannot be reintroduced inadvertently or easily without construction-type activities to restore power. Air-gapping is typically used to abandon electrical equipment and deactivate facilities, and does not require a Lock Out/Tag Out (LO/TO) to remain in place after the establishment of the air-gap. Pulling fuses, opening disconnect switches, racking out circuit breakers, or utilizing other operational activities and/or equipment features is not sufficient to be considered air-gapped.

## **10. PORTABLE GENERATORS**

- Require initial inspection and tag by the UCOR Electrical Authority Having Jurisdiction (EAHJ)
- Currently approved models (see STR) require EAHJ inspection & tag

## V. Ladders

### 1. GUIDANCE DOCUMENTS

- UCOR PROC-FO-1015, *Scaffolds and Ladders*
- UCOR-4087, *Safety and Health Handbook, Oak Ridge, Tennessee*, pg. 45–47
- OSHA 1910, Subpart D, *Occupational Safety and Health Standards*, “Walking-Working Surfaces” and OSHA 1926, Subpart X, *Safety and Health Regulations for Construction*, “Stairways and Ladders”
- ANSI-ASC A14, *Ladders*

### 2. TRAINING

- Ladder User – UCOR Module 29007, Ladders or Module 28981, Ladders and Scaffolds
- SME approval required for training exemption and/or equivalency.

### 3. COMPETENT PERSON DESIGNATION 31700

- Required to perform the initial and quarterly inspection (inventory and tagging)
- UCOR Module 29007, Ladders or Module 28981, Ladders & Scaffolds
- Subcontractor designates and UCOR SCC/STR reviews/approves on UCOR Form-2972, Competent Person Designation Form

### 4. WORK FROM A PORTABLE LADDER WHEN NO OTHER METHOD IS FEASIBLE

- Feasibility shall be driven by assessing total risk, not based on ease or convenience
- S&H Rep required to evaluate and approve work performed from ladders
  - See UCOR S&H for risk evaluation worksheet for documentation

### 5. TYPES OF LADDERS

- Mobile stands, platform, podium, and cage ladders preferred as primary choice
- Stepladders must be minimum ANSI Type 1A (300 pounds) but should consider Type 1AA for increased capacity up to 375 pounds
- Fiberglass required unless approved by S&H Rep

### 6. OTHER REQUIREMENTS

- Inventory to ensure initial and quarterly inspection
- All ladders will be tied, blocked, held, or otherwise secured
- Spotter required when work is performed using a standard stepladder
- Hard hat required for spotter when work is performed above

- Ensure adequate falling object hazard and work area control (consider deflection and bounce)
- Fixed ladders must have a current inspection prior to use
- Stepladders and platform ladders cannot exceed 12 ft
- Straight ladders cannot exceed 20 ft
- Extension ladders cannot exceed 36 ft
- Ladder stands shall meet ANSI-ASC A14.7, *Mobile Ladder Stands & Mobile Ladder Stand Platforms*

## VI. Scaffolds

### 1. GUIDANCE DOCUMENTS

- UCOR PROC-FO-1015, *Scaffolds and Ladders*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 44
- OSHA 1926, Subpart L, *Occupational Safety and Health Standards*, “Scaffolds”
- ANSI A10.8-2011, *Scaffolding Safety Requirements*

### 2. TRAINING

- Scaffold User requires UCOR Module 28981, Ladders and Scaffolds
  - Erector/Disassembler requires UCOR Module 29024, Scaffold Erector, and Module 28981
    - OR trained on the specific type of scaffold to be constructed—e.g., Baker Scaffold
      - Requires SME approval
- SME approval required for training exemption and/or equivalency.

### 3. COMPETENT PERSON DESIGNATION 31700

- Required to perform inspection and tagging
- Oversee erecting and disassembly activities
- Subcontractor designates and UCOR SCC/STR reviews/approves on UCOR Form-2972, Competent Person Designation

### 4. OTHER REQUIREMENTS

- Certificate of Conformance from the supplier of NOT having Suspect/Counterfeit Items per DOE G 414.1-3, *Suspect/Counterfeit Items Guide for Use with 10 CFR 830 Subpart A, Quality Assurance Requirements*, and DOE O 414.1B, *Quality Assurance*
- Mobile scaffolds, baker scaffold, etc., are equal to and shall comply with the scaffold requirements
- Fall protection equipment required during erecting/disassembly above 10 ft
- Self-closing gates at access points are the expectation and to be used when feasible
- SME and Structural Engineer approval required in writing to mix/mingle parts and types of scaffolding
- Toe boards required for all scaffolds and screens should be considered for higher elevated activities
- UCOR Form-3090, Overhead Utilities Pre-Determined Working and Transit Clearances, required when any person, tool, or part could potentially violate the Limited Approach Boundary of an energized source
- Cross bracing cannot serve as both the mid and top guard rail

- Platforms and planks
  - Wood used for planking shall be stamped with
  - Platforms shall not deflect more than 1/60 of the span when loaded at the center point
  - Wood products stamping/labeling
    - “Scaffold Plank” or similar verbiage
    - Manufacturing or regrading mill id number
    - Species
    - Moisture content level
    - Technical grade name (e.g., D165, 171A, 171B)
    - Third party inspection agency



## VII. Fall Prevention & Protection

### 1. GUIDANCE DOCUMENTS

- UCOR PROC-EH-2006, *Fall Prevention and Protection*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 40
- OSHA 1910, *Occupational Safety and Health Standards*, and OSHA 1926, *Safety and Health Regulations for Construction*, various sections
- ANSI A10 and Z359

### 2. UCOR & DOE EXPECTATION

UCOR understands that an industry best management practice, as well as a U.S. Department of Energy (DOE) expectation, is 100 percent fall protection when it comes to protecting personnel when a fall hazard is present. With that said, some work could create very unique situations in which this may not be feasible.

When situations/circumstances exist where 100 percent fall protection (best management practice/expectation) for work above the relevant OSHA trigger elevation (4 ft or 6 ft) cannot be achieved/performed, there shall be written controls established, documented and approved by the ES&H Operations Manager, Area Project Manager, and Fall Protection SME.

### 3. TRAINING & QUALIFICATIONS

	Fall Prevention Initial 28824	Fall Prevention Refresher 31284
Retrain Interval	Once	3 year
Employee	X	X
Supervisor	X	X

SME approval required for training exemption and/or equivalency.

### 4. COMPETENT PERSON

- Subcontractor designates and UCOR SCC/STR reviews/approves on UCOR Form-2972, Competent Person Designation
- Competent Person Fall Protection Designation, UCOR Module 31890
- Equipment Inspector for Fall Protection Competent Person Designation, UCOR Module 31925

### 5. GENERAL EXPECTATIONS

- Primary Fall Prevention (guardrails, hole covers, etc.) is the expectation and feasible in most scenarios.
- Self-closing gates will be used at elevated access points.

- Secondary Fall Protection Equipment (only when primary prevention is not feasible) in the following order:
  - Fall Restraint
  - Fall Arrest
- Warning Line and Monitor—high level of justification required
- Adequate controls for potential falling material/equipment hazards

## 6. ROOFING ACTIVITIES

- See attachments to UCOR PROC-EH-2006, *Fall Prevention and Protection*
- Fall Protection Hazard Analysis
- Warning lines and roof monitors should only be used in rare/SME-approved circumstances

## 7. MOBILE ELEVATED WORK PLATFORMS

- Retractable lanyard or restraint configured lanyard (no 6 ft shock-absorbing lanyards)
- Fall Protection Hazard Analysis for using aerial lift anchor point while working outside of basket

## 8. EXCAVATIONS/TRENCHES

- Depth of 6 ft or greater requires evaluation by S&H Rep
- Prevention by sloping, guardrails, etc., required when feasible
- If prevention not feasible, boundary postings requiring Personal Fall Restraint or Arrest

## 9. RECALLS

- Check recall list and manufacturer specific safety notices and advisories.

Manufacturer	Item	Date of Notification
Miller	MightEvac	August 2019
Miller	MightyLite	August 2019
3M/DBI-SALA	DBI-SALA Nano-Lok <i>edge</i> & Wrap Back	July 2019
3M/DBI-SALA	Protecta Cobra Rope Grab	July 2019
3M/DBI-SALA	DBI-SALA ExoFit NEX Harness	April 2019
3M/DBI-SALA	DBI-SALA Zorbit Energy Absorber	October 2016
3M/DBI-SALA	Capital Safety Protecta Rebel SRL—Inspection Notice	March 2015

## VIII. Mobile Elevating Work Platforms

(Aerial lifts, boom trucks, scissor lifts, personnel lifts, bucket trucks, etc.)

### 1. GUIDANCE DOCUMENT(S)

- UCOR PROC-FO-3036, *Mobile Elevated Work Platform Operation*
- UCOR PPD-FO-1037, *Construction and Heavy Equipment Program*
- UCOR PROC-FO-1039, *Construction Equipment Inspection and Maintenance Program*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 63
- OSHA 1910, Subpart F, *Occupational Safety and Health Standards*, “Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms, and 1926.556, “Aerial lifts”
- ANSI A92.20, *Design, Calculations, Safety Requirements and Test Methods for Mobile Elevating Work Platforms (MEWPs)*—2018 Mobile Elevated Work Platforms
  - New design requirements (see attached JLG guidance doc)

### 2. TRAINING & QUALIFICATIONS

Mobile Elevated Work Platform Training & Qualification					
	Classroom* 26415	JPM**	Fall Prevention Initial 28824	Fall Prevention Refresher 31284	Equipment Spotter 31136
Retrain Interval	3 year	3 year	Once	3 year	3 year
Supervisor	X				X
Operator	X	Aerial Lift 31605 Aerial Lift Outrigger Axle 31767 Scissor Lift 31674 Bucket Truck 31675	X	X	X
Occupant			X	X	
Occupant and Ground Person	To be briefed by the qualified operator To demonstrate proficiency of placing equipment in a safe configuration				

\*Union/vendor training can be approved by the UCOR Construction Heavy Equipment (CHE) SME.

\*\*JPMs are required to only be performed by UCOR’s training subcontractor, SRA.

- UCOR has a virtual reality aerial lift simulator available

### 3. SUBCONTRACTOR SHALL DOCUMENT AUTHORIZED OPERATORS ON THE UCOR OPERATOR DESIGNATION

UCOR Form-31934 and issue card

**4. INSPECTIONS**

- Annual (inbound) by UCOR qualified inspector (STR)
- Daily on UCOR Form-897, Aerial Platform – Daily Checklist and Safety Inspection Form, or SME-approved equivalent

**5. OPERATIONS**

- Retractable lanyard or restraint configured lanyard (no 6-ft shock-absorbing lanyards)
- UCOR Form-3090, Overhead Utilities Pre-Determined Working and Transit Clearances, when potential for overhead utilities within 20 ft
- Fall Protection Hazard Analysis for using aerial lift anchor point while working outside of basket
- Riders and ground operator must be proficient in operating controls for an emergency event
- Ensure weight of personnel, PPE, and other equipment does not exceed platform load limits
- Ensure adequate boundaries and controls for potential falling material/equipment hazards

**6. ENVIRONMENTAL**

- Ensure preventive measures are in place for potential hydraulic/oil leaks into nearby storm drains and waterways

## IX. Forklifts & Telescopic Handlers

### 1. GUIDANCE DOCUMENT(S)

- UCOR PROC-FO-1040, *Lift Truck Operation*
- UCOR PPD-FO-1037, *Construction and Heavy Equipment Program*
- UCOR PROC-FO-1039, *Construction Equipment Inspection and Maintenance Program*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 62
- OSHA 1910.178, *Occupational Safety and Health Standards*, “Powered industrial trucks”
- ANSI B56

### 2. TRAINING & QUALIFICATIONS

Forklift Training & Qualification						
	*Classroom 26416	**JPM 31396	Equipment Spotter 31136	Lift Truck Supervisor 31937	Operator Designation 31934	Operator Card
Retrain Interval	3 year	Annual	3 year	2 year	Once	Once
Operator	X	X	X		X	X
Supervisor	X		X			
Lift Truck Supervisor				X UCOR only		

Telescopic Handler Training & Qualification					
	*Classroom 25836	**JPM 31398	Equipment Spotter 31136	Operator Designation 31934	Operator Card
Retrain Interval	3 year	Annual	3 year	Once	Once
Operator	X	X	X	X	X
Supervisor	X		X		

\*Union/vendor training can be approved by the Construction Heavy Equipment (CHE) SME.

\*\*JPMs are required to only be performed by UCOR’s training subcontractor, SRA.

**NOTE:** Lift Truck Supervisor is appointed by the UCOR Area Project Manager to assist the UCOR CHE SME.

### 3. FORMS & CHECKLISTS

- Annual (inbound) by UCOR qualified inspector (STR)

- Daily on UCOR Form-925, Forklift Daily Checklist and Safety Inspection Form, or SME-approved equivalent
- UCOR Form-1022, Structural & Mechanical Fork Truck Attachment Inspection Checklist
- UCOR Form-3419, Lift Truck Pre-Lift Checklist
- UCOR Form-3425, Field Calculation for Unknown Weight
- UCOR Form-3090, Overhead Utilities Pre-Determined Working and Transit Clearances, used when potential for overhead utilities within 20 ft

#### **4. ATTACHMENTS**

- Mast attachments (side-shift, rotator, larger forks, etc.) shall be identified on the lift truck data plate
- Temporary (fork-mounted) attachments shall have legible identification plate and load chart
- Attachments involving Hoisting & Rigging fall under UCOR PROC-FO-1008, *Hoisting and Rigging Operations*

#### **5. OTHER HEAVY EQUIPMENT USING FORK ATTACHMENTS**

- Must be approved by the UCOR CHE SME
- Lift truck training per this procedure is not required
- JPM on “other” equipment must include use of fork attachments
- UCOR Form-3419, Lift Truck Pre-Lift Checklist, is required

#### **6. VENDORS OPERATING LIFT TRUCKS TO OFF-LOAD MATERIALS/EQUIPMENT**

- Provide proof of training from their employer
- Show proof of daily inspection
- UCOR Inbound/Outbound Equipment Inspector (STR) must be present

#### **7. ENVIRONMENTAL**

- Ensure preventive measures are in place for potential hydraulic/oil leaks into nearby storm drains and waterways

#### **8. OTHER**

- No free rigging directly from fork tines

## X. Earth Moving Equipment

### 1. GUIDANCE DOCUMENT(S)

- UCOR PROC-FO-3034, *Earth Moving Equipment Operation*
- UCOR PPD-FO-1037, *Construction and Heavy Equipment Program*
- UCOR PROC-FO-1039, *Construction Equipment Inspection and Maintenance Program*
- UCOR-4087, *Safety and Health Handbook*, Oak Ridge, Tennessee, pg. 62
- OSHA 1926, Subpart O, *Safety and Health Regulations for Construction*, “Motor Vehicles, Mechanized Equipment, and Marine Operations”

### 2. TRAINING & JPMS

- Training (3 years)—Union operators meet the initial qualification and other/vendor provided training requires approval by the UCOR CHE SME.
- Construction Equipment Spotter, UCOR Module 31136 (3 year) and also required for Supervisor
- JPMs—must be conducted by UCOR’s training subcontractor, SRA

Skidsteer – 17119 (annual)	Excavator – 31944 (annual)
Scraper – 31602 (3 years)	Roller/Compactor – 17126 (3 years)
Dozer – 17122 (annual)	Loader – 17124 (3 years)
Grader – 17127 (annual)	Chipper – 31448 (5 years)
Backhoe – 17123 (annual)	Other Equipment – requires CHE SME evaluation

**NOTE:** Supervisors must have Construction Equipment Spotter, UCOR Module 31136, and extensive experience operating and supervising heavy equipment.

### 3. SUBCONTRACTOR SHALL DOCUMENT AUTHORIZED OPERATORS ON EQUIPMENT OPERATOR DESIGNATION FORM-31934 AND ISSUE OPERATOR CARD.

### 4. FORMS & CHECKLISTS

- Annual (inbound) by UCOR qualified inspector (STR)
- Daily on UCOR Form-832, Equipment Daily Checklist and Safety Inspection Form, or SME-approved equivalent
- UCOR Form-3090, Overhead Utilities Pre-Determined Working and Transit Clearances, when potential for overhead utilities within 20 ft

### 5. USING FORK ATTACHMENTS

- Must be approved by the UCOR CHE SME
- Forklift training is not required

- JPM on equipment must include use of fork attachments
- UCOR Form-3419, Lift Truck Pre-Lift Checklist, is required

## **6. HOISTING & RIGGING ACTIVITIES**

- Requires approval from UCOR Hoisting & Rigging SME & notification prior to performing
- In accordance with manufacturer's manual and Working Load Limit (WLL)
- Attachment points are
  - Installed/approved by the manufacturer
  - Rated WLLs available to the Competent Person Rigger
  - Proof test reports, CofC, and included on the annual inspection report
- No free rigging from fork tines

## **7. ENVIRONMENTAL**

- Ensure preventive measures are in place for potential hydraulic/oil leaks into nearby storm drains and waterways

## **8. WELL DRILLING OPERATIONS**

- See UCOR PROC-FO-3035, *Well Drilling Operations*



## **XI. Excavations & Trenching**

### **1. GUIDANCE DOCUMENT(S)**

- UCOR PROC-FO-3034, *Earth Moving Equipment Operation*(safety associated with working in/near)
- UCOR PROC-FO-1004, *Excavation/Trenching Permitting*
- UCOR PROC-FO-3037, *Ground Penetration Permitting*
- UCOR-4087, *Safety and Health Handbook, Oak Ridge, Tennessee*, pg. 42
- OSHA 1926, Subpart P, *Safety and Health Regulations for Construction*, “Evacuations”

### **2. TRAINING**

- UCOR Module 31888, Excavation Safety Awareness, when within 6 ft of excavation 4 ft deep or greater
- Competent Person classroom at the Association of General Contractors, United Rentals, or other approved by the UCOR Excavation/Penetration SME

### **3. COMPETENT PERSON DESIGNATION MODULE 31703 ON FORM-2972**

- UCOR PROC-FO-3034, *Earth Moving Equipment Operation*
- Designated by subcontractor and reviewed/accepted by UCOR SCC/STR
- Not required under the following conditions
  - Personnel will not be entering
  - Drilling/boring activities—see UCOR PROC-FO-3037, *Ground Penetration Permitting*
- Completes Competent Person Excavation Checklist, UCOR Form-913 daily and continuously evaluates with changing conditions
- Required to be present at all times when work is taking place in excavations 4 ft or greater
- No other duties unless approved by the UCOR ES&H Ops Manager

### **4. OPERATIONS & PERMIT**

- Excavation/Trenching Permit (ETP), UCOR Form-147
- Operator & Supervisor complete Excavation Operator Pre-Dig Checklist, UCOR Form-3445

### **5. TRENCH BOXES/SHIELDS**

- Certification and installation documents required
- Fall Prevention guardrails when feasible

**6. FALL PREVENTION & PROTECTION**

- Depth of 6 ft or greater requires evaluation by S&H Rep (see UCOR PROC-FO-2006, Sect. G, *Fall Prevention and Protection*, “Evacuations”)
- Prevention by sloping, guardrails, etc., required when feasible
- If prevention not feasible, barricade boundary requiring Personal Fall Restraint or Arrest

## XII. Hoisting, Rigging, & Cranes

### 1. GUIDANCE DOCUMENT(S)

- UCOR PPD-FO-1037, *Construction and Heavy Equipment Program*
- UCOR PROC-FO-1008, *Hoisting and Rigging Operations*
- UCOR PROC-FO-1009, *Qualification & Performance as Competent Person Rigger & Crane Signal Person*
- UCOR PROC-FO-1037, *Hoisting and Rigging Hardware Inspection, Testing, and Purchases*
- UCOR PROC-FO-1039, *Construction Equipment Inspection and Maintenance Program*
- UCOR PROC-FO-1041, *Crane Operator Certification/Qualification*
- OSHA 1910, *Occupational Safety and Health Standards*, and OSHA 1926, *Safety and Health Regulations for Construction*, various sections
- ASME B30

### 2. TRAINING & QUALIFICATIONS

	<b>*CPR Initial 28847 Annual 29268</b>	<b>Signal Person 31233</b>	<b>CPR Designation 31702</b>	<b>CPR Card</b>	<b>Rigging Inspector 31274</b>
<b>Retrain Interval</b>	Annual	5 year	Once	Once	3 year
<b>PIC</b>	X	X	X	X	
<b>DL</b>	X	X	X	X	
<b>CPR</b>	X	X	X	X	
<b>Signal Person</b>	X	X	X	X	
<b>H&amp;R Qualified Inspector</b>	X	X	X	X	X

	<b>Certified Operator Core 31254</b>	<b>Site Specific Competency JPM 29077</b>	<b>Mobile Crane Qual 17111</b>	<b>Medical Exam</b>	<b>Truck Mounted Crane JPM 31657</b>	<b>Operator Designation 31934</b>
<b>Retrain Interval</b>	5 year	Once	3 year	Annual	3 year	
<b>Mobile Crane</b>	See Note 1		See Note 2	X		See Note 3
<b>Truck Mounted</b>					X	X

\*Local Union 384 Rigger Training Program shall receive credit for UCOR Module 28847, Competent Person Rigger Initial

Note 1: Subcontractor operators shall have a current physical and be in possession of a current and valid certification from one of the following entities:

- National Commission for the Certification of Crane Operators (NCCCO)
- International Union of Operating Engineers, Local 917, Knoxville, TN

Note 2: If work will be monitored by the UCOR H&R SME or designee then the operator will not be tested or certified by the UCOR procedure. JPMs will be conducted during mobilization and setup.

Note 3: Not required for Subcontractor. Certification card in Note 1 is equivalent.

UCOR H&R SME approval required for training exemption and/or equivalency.

### **3. FORMS & CHECKLISTS**

- Annual (inbound) by UCOR qualified inspector (STR)
- UCOR Form-834, Monthly Crane and Wire Rope Inspection Form
- UCOR Form-899, URS | CH2M Oak Ridge LLC/Subcontractor Lift Plan
- UCOR Form-928, Daily/Monthly Crane Checklist and Safety Inspection Form
- UCOR Form-971, Hoisting and Rigging Checklist
- UCOR Form-1601, Daily Overhead Crane/Hoist Checklist and Safety Inspection Form
- UCOR Form-2218, Annual-Overhead-Crane/Monorail Inspection Checklist Form
- UCOR Form-3143, Pre-Engineered/Critical Lift Classification Worksheet
- UCOR Form-3090, Overhead Utilities Pre-Determined Working and Transit Clearances

### **4. ITEMS NOT COVERED**

- Tie downs or other equipment regulated under 49 *CFR, Transportation*
- Jacks for automotive service, trip-lowered jacks, and static support jacks

### **5. ROLES/RESPONSIBILITIES**

- UCOR H&R SME
  - Ultimate authority
  - Approves all lift plans
  - Determines all lift classifications for subcontractors
- UCOR Rigging Engineers
  - Assists in determination of lift classification
  - Develops lift plans
  - Assists UCOR Project Rigging Coordinator with procuring equipment
- Person In Charge (PIC)
  - Responsible for execution of critical lifts

- Ensures all forms are completed and placed in the work package
- Designated Leader (DL)
  - Ordinary Lift classification per UCOR Form-971, Hoisting & Rigging Checklist
  - Responsible for execution of pre-engineered and ordinary lifts
  - Ensures all forms are completed and placed in the work package
- Competent Person Rigger (CPR)
  - Follows instructions of PIC or DL
  - Oversees all hoisting & rigging operations, inspections, and installation of equipment
  - Qualified Crane Signal Person
  - Dedicated Spotter for work around power lines
- Qualified Rigging Inspector
  - Approved by the UCOR H&R SME
  - Performs annual inspections of H&R equipment
- Dedicated Spotter for potential within 20 ft of overhead lines
  - Must be a CPR
  - Shall have no other duties
  - Must have direct communication channel with the operator
- Certified Crane Operators
  - Ultimate responsibility for the safe operation of crane activities
  - Ensures all crane inspections are performed

**NOTE:** Rigging may be performed by somebody other than a CPR only if the CPR is present to approve.

## 6. LIFT CLASSIFICATIONS—UCOR H&R SME SHALL DETERMINE FOR SUBCONTRACTORS

- Mast attachments (side-shift, rotator, larger forks, etc.) shall be identified on the lift truck data plate
- Temporary (fork-mounted) attachments shall have legible identification plate and load chart
- Attachments involving Hoisting & Rigging fall under UCOR PROC-FO-1008, *Hoisting and Rigging Operations*

## 7. OTHER REQUIREMENTS

- UCOR H&R SME shall be notified prior to performing H&R activities
- It is permissible for a PIC or DL to serve in conjunction with other roles such as the CPR.
- Ensure entire work area is controlled

- Fall/shadow zone is equal to or greater than the height of the object and shall only be entered for hooking/unhooking
- Load positioning should be performed with tag lines and tools, not by hand
- Hoists (scaffold hoists, etc.) require UCOR H&R SME evaluation and approval

**8. OTHER HEAVY EQUIPMENT USED FOR H&R ACTIVITIES**

- Requires consultation with UCOR H&R SME and notification prior to performing
- In accordance with manufacturer's manual and Working Load Limit (WLL)
- Attachment points are
  - Installed/approved by the manufacturer
  - Rated WLLs available to the CPR
  - Proof test reports, CofC, and inspected on the annual inspection report
- Requires UCOR Form-971, Hoisting and Rigging Checklist

**9. ENVIRONMENTAL**

- Ensure preventive measures are in place for potential hydraulic/oil leaks into nearby storm drains and waterways

### **XIII. Fire Prevention**

#### **1. GUIDANCE DOCUMENTS**

- UCOR PPD-FP-2001, *Fire Protection Program Description*
- UCOR PROC-FP-2001, *Fire Protection Program Procedure*
- UCOR PROC-FP-2003, *Fire Extinguisher Inspection and Maintenance*
- UCOR PROC-FP-2006, *UCOR Program for Controlling Combustibles & Ignition Sources*
- UCOR PROC-FP-2008, *Hot Work*
- UCOR-4087, *Safety and Health Handbook, Oak Ridge, Tennessee*, pg. 53–54
- International Building Code (IBC), NFPA, OSHA 1910, *Occupational Safety and Health Standards*, and OSHA 1926, *Safety and Health Regulations for Construction*, various sections

#### **2. FIRE PROTECTION ENGINEER FOR THE PROJECT SHOULD BE CONSULTED FREQUENTLY**

#### **3. ACCESS/EGRESS**

- Maintain clear paths at all times
- Do not store combustible materials under stairs or in stairwells

#### **4. FIRE EXTINGUISHERS**

- Inventory and monthly inspection
- Designated locations that are properly secured, visible, and readily accessible
- Immediately replace if taken out of service or used
- Annual maintenance and 5 year hydrostatic test

#### **5. CONTROLLING COMBUSTIBLES & IGNITION SOURCES**

- Housekeeping – Housekeeping – Housekeeping
- Combustible waste stored in metal drum, box, etc.
- UCOR Fire Protection Engineer evaluation of flammable/combustible liquid storage
- Oil rags (spontaneous ignition) shall be stored in appropriate, listed disposal container
- Designated smoking areas and receptacles
- Storage cabinets and flammable liquid containers must be UL listed
- Secure all gas cylinders

## 6. REFUELING

- Portable Tanks
  - Ensure nearby facility requirements will not be violated
  - Portable tanks a minimum of 50 ft from building
  - Double wall containment
  - Tank bonding
  - Portable fire extinguisher minimum 2A 40BC
  - UL listed pump
  - Tanks shall be equipped with overflow warning and shutoff device
  - Must be placarded in compliance with NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*, including hazard diamond
  - 50 ft No Smoking & Open Flame sign
- Truck Mounted Tanks
  - UL listed or DOT compliant and UL listed pump
  - Maximum capacity of 110 gal
  - Grounded to vehicle body
  - 50 ft No Smoking & Open Flame sign
  - Portable fire extinguisher minimum 5A 40BC
  - All equipment shut off and secured from movement
  - Continuously monitored
- Type II Safety Fuel Cans
  - 6 gal max, UL listed
  - Leak tight and self-closing spout
  - Equipment shut off and allowed to cool prior to refueling

## 7. HOT WORK

- Any flame or spark producing activity requires a permit
  - Includes Bernz-O-Matic
  - FPE to evaluate heat producing activities
- Welding, torch cutting, grinding, etc.
  - Respiratory protection required in most cases and evaluated per IHWP by UCOR IH
  - Contract will state if UCOR or Subcontractor to provide respirators
  - UCOR normally provides IH monitoring
  - Ensure correct lens shade



- FR clothing meeting ASTM F1449 and/or ISO 2801
- Standard welder's leather garments (such as chaps, sleeves, apron, etc.) are considered to be FR garments and meet the intent of this procedure as long as they cover all non-FR clothing
  - Both the individual performing and the fire watch (unless noted on the permit)
- Training
  - Supervisor required to take UCOR Module 11655, Hot Work Issuing Authority/Supervisor Training
  - Fire Watch, UCOR Module 23129, annual classroom
  - Fire Ext. Practical, UCOR Module 23290 or Fire Watch & Practical (Vendor) Module 29019, annual OJT
- Several burns have occurred from radiating heat

## **XIV. Industrial Hygiene**

### **1. KEY DOCUMENTS & RESOURCES**

- UCOR PPD-IH-3345, *Chemical Safety Management Program*
- UCOR PPD-IH-5133, *Ergonomics Program*
- UCOR PPD-IH-5140, *Hazard Communication*
- UCOR PPD-IH-5151, *Respiratory Protection Program*
- UCOR PPD-IH-5205, *Airborne Silica Hazard Assessment and Control*
- UCOR PPD-IH-5418, *Industrial Hygiene Program*
- UCOR PROC-IH-5121, *Occupational Noise Exposure and Hearing Conservation*
- UCOR PROC-IH-5134, *Temperature Extremes*
- UCOR PROC-IH-5138, *Confined Space Entry*
- UCOR PROC-IH-5177, *Asbestos and Other Fibrous Materials*
- UCOR PROC-IH-5181, *Hazardous Materials Information System*
- UCOR PROC-IH-5206, *Generation and Use of Industrial Hygiene Work Permits*
- UCOR-4087, *Safety and Health Handbook, Oak Ridge, Tennessee*
- OSHA, ACGIH, National Institute for Occupational Safety and Health (NIOSH), etc.

### **2. EXPECTATIONS**

- UCOR has recently increased resources to improve the IH Program for the protection of all workers
- All chemicals are evaluated for their hazards, health effects, and exposure potentials by professionals using the IHWP process and integrated into the Work Control
- Hierarchy of Controls is strictly followed
  - Eliminate
  - Substitute
  - Engineer
  - Administrative
  - PPE
- IH Monitoring is the expectation not the exception
  - Documented training/JPM on equipment

### **3. GENERAL APPROACH & RESPONSIBILITIES**

- Subcontractor will provide a designated Competent Person on UCOR Form-2972, Competent Person Designation

- Silica, asbestos, lead, and cadmium
- Subcontractor is responsible for Medical Surveillance with their chosen Occ Med provider.
- UCOR will perform the Industrial Hygiene Work Permit
- UCOR will provide IH monitoring in most cases.
- UCOR will provide respiratory protection in most cases.

#### 4. TOP AREAS OF CONCERN

- Heat Stress
  - UCOR PROC-IH-5134, *Temperature Extremes*
  - Temperature Extremes, UCOR Module 31736
  - ACGIH
  - Work/Rest Regimen
  - Physiological Monitoring & Heart Card
- Ergonomics
  - UCOR PPD-IH-5133, *Ergonomics Program*
  - 30 lb is the trigger for evaluation by Safety/IH
  - Matrix/Inventory on weight of materials/items
- Silica
  - UCOR PPD-IH-5205, *Airborne Silica Hazard Assessment and Control*
  - Requires Silica Competent Person
    - UCOR Module 308, Respirator, UCOR Module 31835, Silica Hazard Awareness, and UCOR Module 31836, Silica Competent Person Designation
  - Worker requires Silica Hazard Awareness, UCOR Module 31835
  - Drilling, sawing, grinding, etc.
    - Engineered tools with dust capture
    - Shrouds, covers, and water for dust suppression
  - Most drilling does not require respiratory protection
  - Grout mixing, etc.
    - Less than 1 hour = filtering facepiece
- Volatile organic compounds
- Welding & Aggressive Cutting
  - Welding requires respiratory protection

## 5. CONFINED SPACE

- UCOR PROC-IH-5138, *Confined Space Entry*
- Confined Space Evaluation Checklist, UCOR Form-1237 (for any created spaces, i.e., manholes)
- Confined Space Entry Permit (CSEP), UCOR Form-783
- Evaluate equipment (vaults, manholes, etc.) for proper posting
- Training
  - Confined Space Entrant/Attendant, UCOR Module 1550
  - Confined Space for Supervisors, UCOR Modules 1550 & 1551
  - Confined Space Competent Person—normally performed by UCOR IH Lead

## 6. RESPIRATORY

- UCOR PPD-IH-5151, *Respiratory Protection Program*
- Occ Med evaluation, model specific fit test for tight fitting respirator, UCOR Module 308, Respirator General User, and specific module for PAPR
- Medical Approval card with identified Fit Test for specific tight fitting respirator, PAPR approval card
- Filtering Facepieces (Dust Masks)
  - Voluntary use requires UCOR Form-2358, Voluntary Use of 3M 8271 (P95) Filtering Facepiece or Equivalent (Module 31297)
  - Mandatory Use
    - Stringent assessment requirements by IH
    - Requires medical evaluation, respirator fit testing, and training

## 7. HEARING CONSERVATION

- UCOR PROC-IH-5121, *Occupational Noise Exposure and Hearing Conservation*
- Hearing Conservation, UCOR Module 26455

## 8. EYE WASH

- UCOR PROC-EH-2012, *Emergency Showers and Eyewash Equipment*
- Emergency showers and/or eyewash equipment shall be required where the eyes or body of any person could be exposed to injurious corrosive materials, such as any of the following conditions:
  - Acidic ( $\text{pH} \leq 2$ ) or caustic ( $\text{pH} \geq 12.5$ ) chemicals are used, stored, or handled (and the possibility of spillage exists).

- A condition, activity, and/or safety data sheet evaluated by the project Industrial Hygiene or Safety representative to require an emergency shower or eyewash.
- Battery handling and charging stations.
- Full eyewash station is rarely required
- Emergency eyewash bottles normally are sufficient for immediate response until professional medical assistance is provided or transport to UCOR Health Services

**9. HAZARDOUS MATERIALS (HM)**

- Safety Data Sheet required to be submitted for all chemicals before bringing on site
- HM Control Area and inventory on UCOR Form-1017, HMIS Physical Inventory, is required if chemicals do not leave site each day
- HM Custodian and Alternate designated for each Control Area

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**Notes**

**UCOR-5357**

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